

**PRISM**

TOOLKIT FOR EVALUATING  
THE OUTCOMES AND IMPACTS  
OF SMALL/MEDIUM-SIZED  
CONSERVATION  
PROJECTS

Dickson, I. M., Butchart, S. H. M., Dauncey, V.,  
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Thomas, D. H. L., & Trevelyan, R., (2017)  
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## PRISM

# TOOLKIT FOR EVALUATING THE OUTCOMES AND IMPACTS OF SMALL/MEDIUM-SIZED CONSERVATION PROJECTS

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prism

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## OVERVIEW

This toolkit is divided into three main sections:

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**Section 1** introduces the toolkit and outlines some of the key concepts relating to evaluation of outcomes and impacts that are likely to be relevant to small/medium-sized conservation projects.

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**Section 2** is designed to guide you through a step-by-step process for evaluating project outcomes and impacts.

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**Section 3** provides detailed guidance and methods to measure outcomes and impacts relating to each of PRISM's five thematic modules, each one covering a different category of conservation action.

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**Icons** have been used throughout the PRISM Toolkit to aid navigation. Solid colour icons indicate active page content and greyed out indicates an inactive state. The Contents icon is active throughout.



Contents



Required steps



Examples are shown



Tips available



Checklists to complete



Downloads available



Available as Excel

Sections 1 & 2 should be read before the information in Section 3. However, we are aware that some users will already have a good idea of what they want to evaluate and will be seeking guidance on specific evaluation needs for certain actions. Where this is the case, users are able to go directly to the appropriate module of Section 3 to identify suitable methods. In the interactive version of this toolkit, you can use the relevant hyperlinks to navigate to the relevant pages.

Methods are laid out in a factsheet format. The factsheets include general methods (applicable to all modules) and methods that are specific to a particular module. Factsheets are included in the annexes and via hyperlinks within the interactive version of the toolkit.

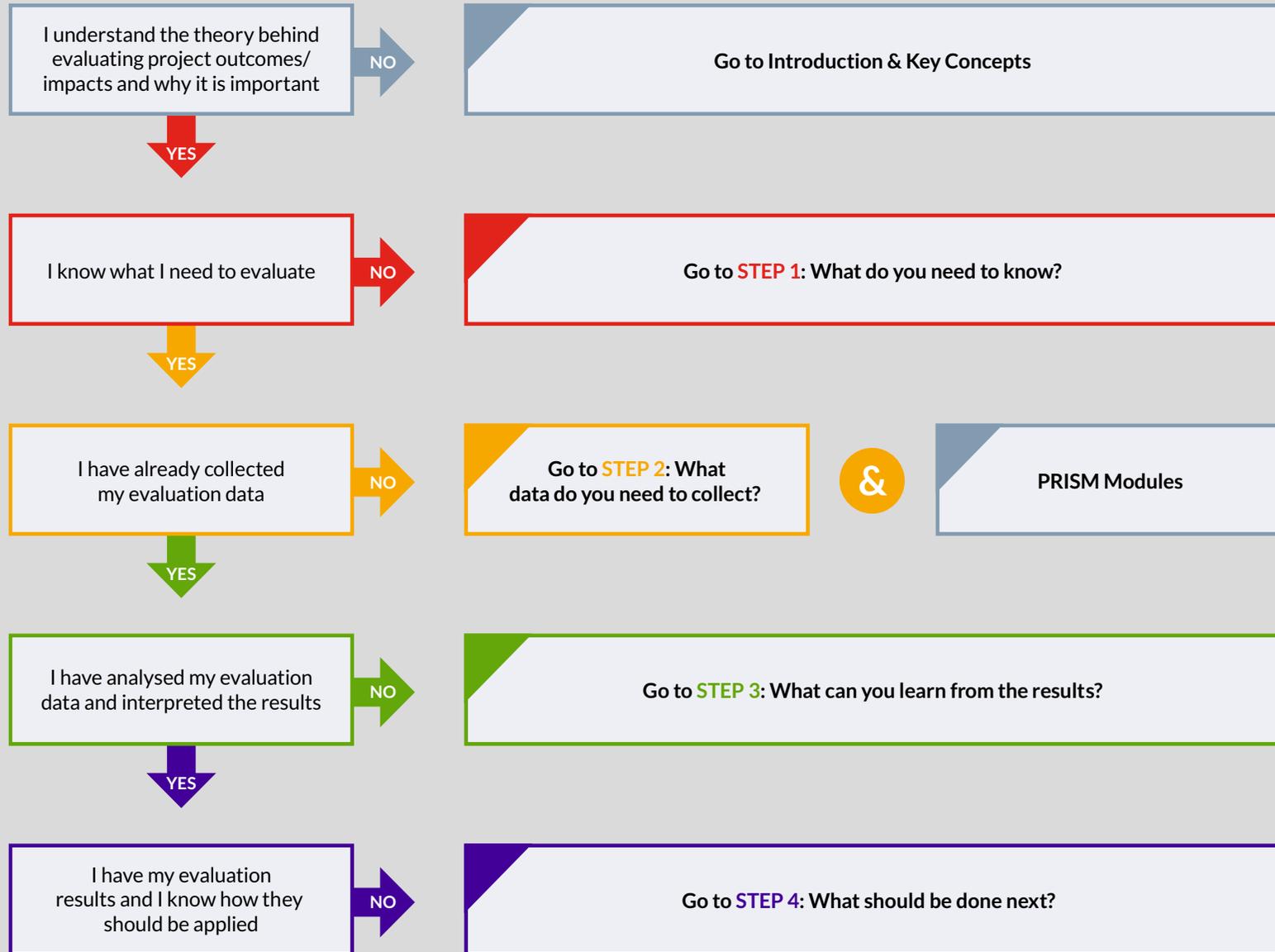
Whilst trying to make this resource as generically applicable as possible, we recognise that the guidance and methods may need to be adapted to specific projects and/or local context.

**For ease of use we would highly recommend adding the “previous view” button to your PDF viewer. In Adobe Acrobat you can do this by right clicking on the toolbar, select page navigation tools and make sure that there is a tick next to “previous view”. This will add a back button to the toolbar. Pressing alt+right arrow provides the same function.**





DECISION TREE





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## SECTION 1

# INTRODUCTION & KEY CONCEPTS

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### SECTION 1

#### Section 1 Introduction and Key Concepts

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This section introduces the toolkit and outlines some of the key concepts relating to evaluation of outcomes and impacts that are likely to be relevant to small/medium-sized conservation projects.

## WHAT IS THIS TOOLKIT FOR?

### What is this toolkit for?

Conservationists are increasingly looking to improve the ways in which they evaluate the outcomes and impacts of their work. Good evaluation practice is essential for demonstrating achievements, avoiding wasted effort and modifying projects to improve delivery. In addition, sharing evidence of what works and what doesn't allows other conservationists to learn from experience, make decisions and design projects and actions that are better informed by available evidence.

Existing monitoring frameworks used by small to medium sized conservation projects often focus on how well the project has delivered on actions and outputs (what the project has done); however, these do not always effectively evaluate the outcomes and impacts of these actions (the short, medium and long term changes brought about by the project). Equally, it is often extremely challenging for smaller projects to establish their long-term conservation impact, as this may take years to become measurable.

This toolkit aims to help practitioners overcome these challenges by describing some of the practical approaches and methods that can be used to evaluate the outcomes and impacts of small/medium-sized conservation projects. Overall, PRISM aims to help practitioners to go beyond only measuring actions & outputs, and to begin to evaluate outcomes & impacts, in a way that promotes learning, while still remaining within the capacity and resource limits of the project team.

### SPECIFICALLY, THIS TOOLKIT IS DESIGNED TO HELP YOU ANSWER THE FOLLOWING QUESTIONS:

#### What do you need to know?

Identify which of the project's outcomes/impacts to focus on in an evaluation, and the questions you will try to answer

#### What data do you need to collect?

Design your data collection and select appropriate methods that will provide you with the data you need to answer your evaluation questions

#### What can you learn from the results?

Examine your data to provide answers to your evaluation questions, determine what lessons can be learnt and what the results mean in relation to the overall aim of the project

#### What should be done next?

Apply results to improve practice and share results the wider conservation community

## WHO CAN USE THIS TOOLKIT?

### Who can use this toolkit?

This toolkit has been designed primarily for use by practitioners carrying out small/medium-sized conservation projects and those who work to support these projects. Many evaluation methods require considerable investment in time and resources, making them unsuitable for small/medium-sized projects. This toolkit focuses instead on some of the methods and approaches that are more relevant for smaller projects.

There is no set definition for a small/medium-sized project. As a rough guide this toolkit has been designed to apply to projects with some or all of the characteristics listed below (although much of the guidance it contains will be appropriate for other projects too).

- Budget between \$5,000 - \$100,000
- Short timeframe (<5 years)
- Small project team, often with limited capacity in relation to evaluation
- Limited resources available for evaluation
- Projects taking place in complex environments, where it can be difficult to separate project outcomes and impacts from other factors.

There is also no set requirement for how much a small/medium-sized project should evaluate. For some projects minimal evaluation of specific actions may be sufficient, whereas others would be better off investing considerable time and resources in understanding some of the specific change(s) brought about by the project.

A key point to remember is that small/medium-sized projects should not expect, or be expected to carry out a full and comprehensive evaluation of all their outcomes and impacts. How you evaluate will depend on your time, your budget and on what you and your audience need to know. This toolkit is designed to help you develop and carry out an appropriate evaluation based on these criteria – including careful consideration of the project and its design, identification of the key elements to be evaluated and selection of appropriate methods for collecting the information needed.



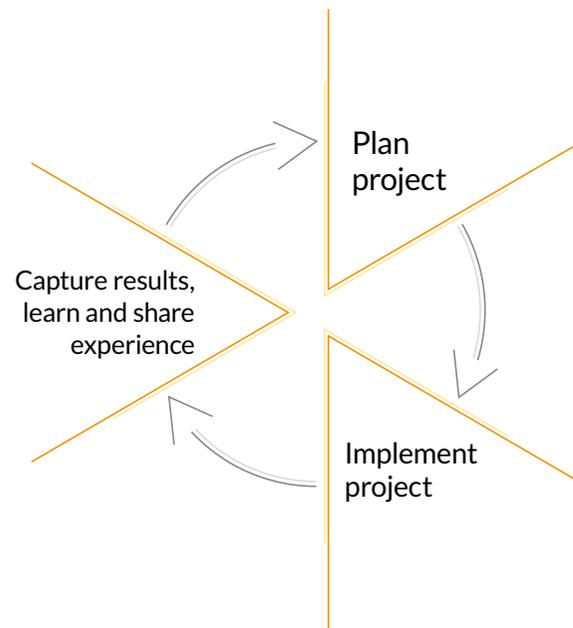
Photo credit: Iain Dickson

## WHEN TO USE THIS TOOLKIT

### When to use this toolkit

It is useful to think of conservation action as a cyclical process, where learning and experience is captured and used to inform future decision making. Evaluating your project's outcomes and impacts allows you to complete the cycle by looking at what difference the project has made, what the key lessons are and what actions should be taken next. Above all, evaluation should not be seen as a standalone activity - instead it should be seen as an essential component which allows you to complete the project cycle.

FIGURE 1: CONSERVATION PROJECT CYCLE



### THIS TOOLKIT CAN BE USED AT THE FOLLOWING POINTS IN THE PROJECT CYCLE:

POINTS IN THE PROJECT CYCLE	USE THIS TOOLKIT TO
<b>Plan project</b>	Identify the key outcomes/ impacts to evaluate and how data will be collected
<b>Implement project</b>	Collect the data required
<b>Capture results, learn &amp; share experience</b>	Decide how to analyse, interpret, learn from and communicate results

In an ideal world, all projects would build in evaluation from the start. We recognise however that many users may be picking up this toolkit mid-way through a project, towards the end of a project or after the project has ended. If this is the case, then the recommended steps (see [Section 2](#)) are still the same, although note that assessments can be more challenging if evaluation is not built into the project from the start (note also that some methods will only apply to projects that have considered evaluation at the outset).

## WHAT DO WE MEAN BY EVALUATION?

### What do we mean by evaluation?

**Evaluation** involves looking at a project, or specific elements of a project, to understand what difference it has made and what lessons have been learnt. Evaluation can look at a project of any size and at any stage; however this toolkit is specifically concerned with how to evaluate the **outcomes** and **impacts** of small/medium-sized conservation projects.

Evaluating project outcomes and impacts is not just about measuring “success”. It is about measuring **change** - which can be **positive** or **negative, intended** or **unintended** (see Figure 4). This change can be brought about by a single project action or a number of different actions.

### What about monitoring and learning?

The term **monitoring** is often used alongside evaluation (often as a single phrase – Monitoring & Evaluation or M&E). Increasingly organisations also include **learning** (Monitoring, Evaluation & Learning or MEL).

Rather than treating these elements separately, it is often useful to view them as parts of the same process: **monitoring** refers to the collection of data over the course of the project, **evaluation** is when you examine this data to make a judgement about an aspect of the project, and **learning** is when you use these judgements to make decisions about what could or should be done next.

Evaluation needs relevant data. That said, collecting data without a purpose in view (making judgements, applying results) is a waste of time and resources that could be used elsewhere in the project.

In order to ensure that you are making the best use of your time and resources it is usually necessary to include a step before you begin collecting data, where you consider what questions need to be answered, and use these to guide your data collection, your interpretation of results and your application of those results.

This toolkit is designed to help you design and implement an evaluation to reflect this process:

#### STEP 1

Start by identifying what you need to evaluate, consider the project’s design and identify the questions that you need to answer.

#### STEP 2

The questions from Step 1 then inform what data you need to collect, when they will need to be collected and the methods you will use.

#### STEP 3

These data then inform your interpretation of the results and the judgements you make when answering your questions.

#### STEP 4

The judgements in Step 3 are then used to develop recommendations, inform practice and share results.



## WHAT DO WE MEAN BY OUTCOMES AND IMPACTS?

### What do we mean by outcomes and impacts?

When planning to evaluate a conservation project it is useful to think of the project as a series of different stages. Throughout this toolkit we use the following definitions and framework as shown in Figure 2<sup>1</sup> to refer to these stages.

**Actions** – What the project does to bring about change. For example conducting biodiversity surveys, training workshops, education/outreach campaigns.

**Outputs** – What is produced by the project's actions. These are usually measured in terms of quantity and quality of delivery, for example the number of reports produced from survey data or the number of individuals trained.

**Outcomes** – The change(s) brought about by the project's actions. For a conservation project these can be further divided into:

- **Intermediate outcomes** which show progress towards subsequent outcomes/impacts (see Figure 2);
- **Threat reduction outcomes** which represent the final change(s) that need to happen in order to impact a conservation target (see Figure 2).

**Impacts** – The long-term, lasting change(s) brought about by the project's actions. For conservation projects these typically relate to changes in the status of species and/or habitats.

**Assumptions** – The links between each of the stages above are underpinned by assumptions. For example a project focused on training park rangers to carry out anti-poaching patrols makes the assumption that training park guards will result in more

effective patrols. A project will also make assumptions about external factors that the project does not have control over, but that may influence the project's results if they do not remain true. For example, in order for training to be successful, park rangers need to have sufficient resources to carry out their work (e.g. equipment, salary). These kind of assumptions are particularly important for a small/medium-sized project to consider, as there will often be a large number of factors that could influence the project's outcomes/impacts and they will form an integral part of the story you will use to explain and contextualise your results.

### Are these definitions always used in the same way?

Different organisations may use different terminology when they mean the same thing. For example "actions" may be referred to as "activities" or "interventions", "outcomes" may be referred to as "results" or "intermediate results", and "impacts" may be referred to as "goals", "aims" or "ultimate outcomes". We would encourage you not to spend too much time focusing on any differences between the terms used in PRISM and those used in other frameworks. What is most important is that you understand what the terms given above represent, and that you are able to relate them to your own project.

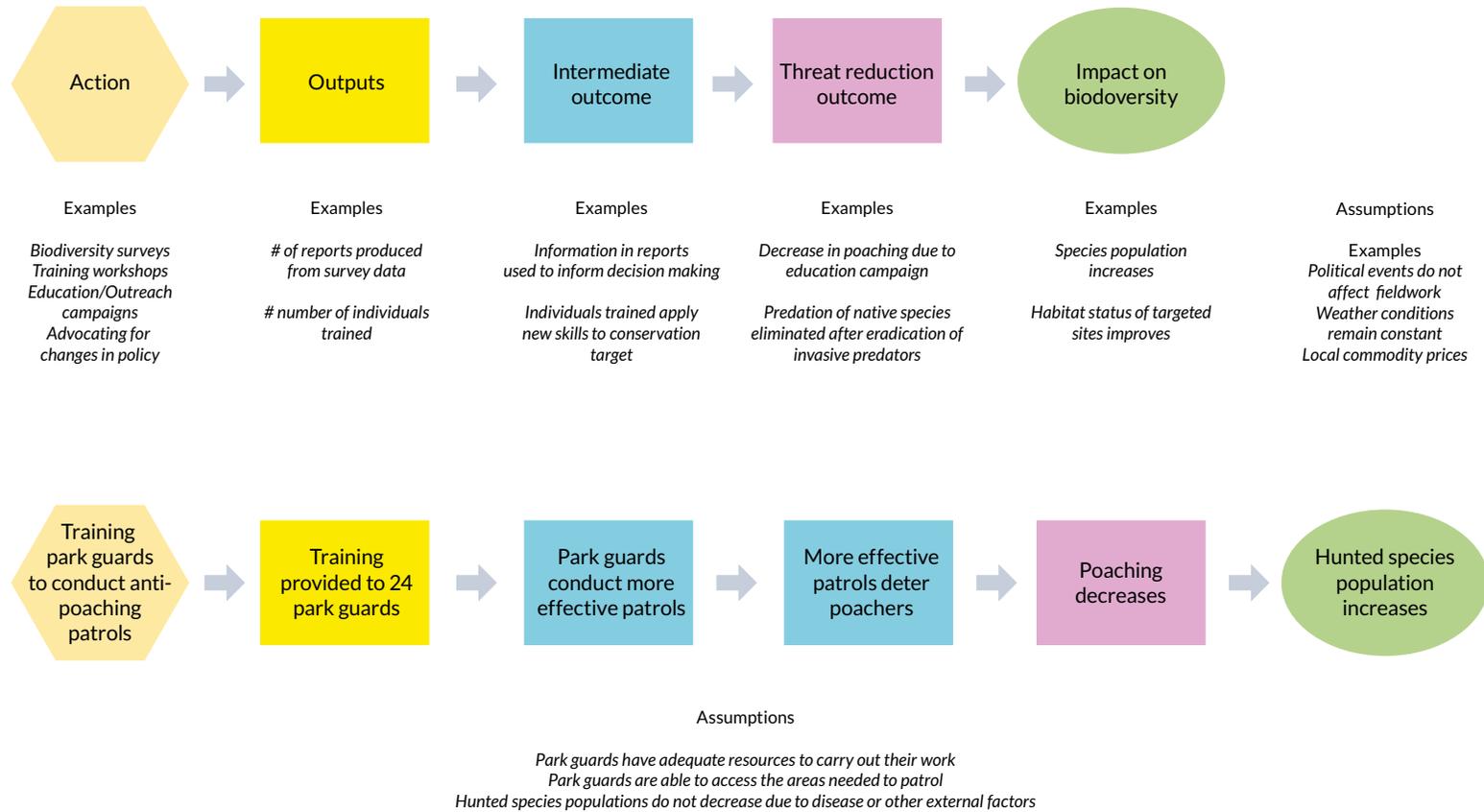
Please refer to the [Glossary](#) for a list of key terms and definitions used in PRISM.

<sup>1</sup>Colours, shapes and wordings in the boxes are designed to reflect those used by the Conservation Measures Partnership <http://www.conservationmeasures.org/> and the Miradi Conservation Planning software [www.miradi.org/](http://www.miradi.org/).

# WHAT DO WE MEAN BY OUTCOMES AND IMPACTS?

**FIGURE 2: DEFINITIONS OF PROJECT STAGES (ACTIONS, OUTPUTS, INTERMEDIATE OUTCOMES, THREAT REDUCTION OUTCOMES AND IMPACTS) USED IN PRISM.**

● Actions   
 ■ Outputs   
 ■ Intermediate outcomes   
 ■ Threat reduction outcomes   
 ● Impact on Biodiversity



## WHY FOCUS ON OUTCOMES & IMPACTS?

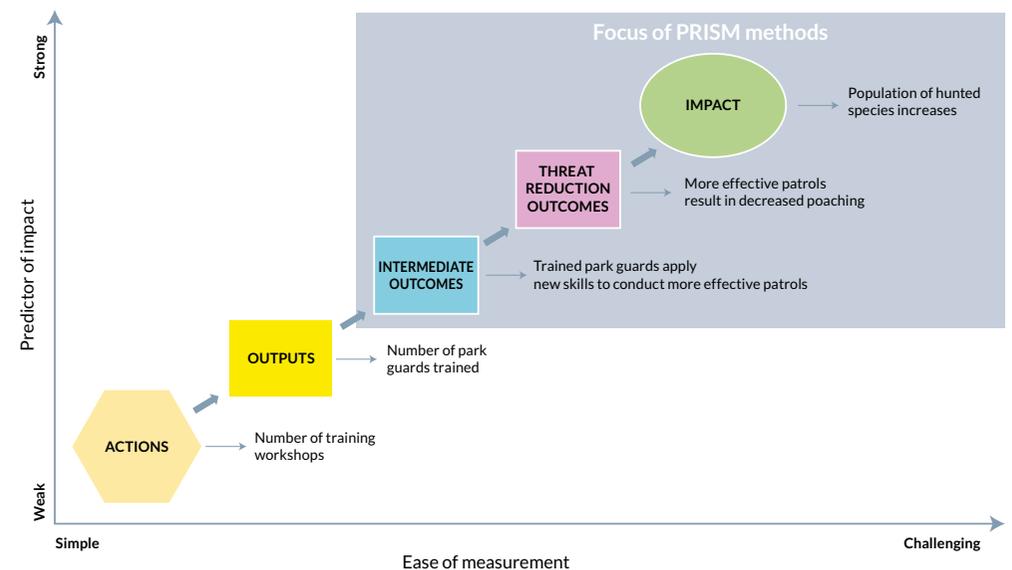
### Why focus on outcomes & impacts?

Project reporting often requires information relating to actions and outputs to assess whether you have done what you planned. These measures are useful for tracking project progress and delivery, but they do not effectively demonstrate what difference the project has made (see Figure 3). The latter requires information on what has changed as a result of the project (its outcomes & impacts). However while actions and outputs are events that are under our control and thus somewhat predictable, outcomes and impacts are not, which can make measuring these changes more challenging.

### Why not just focus on impacts?

Ideally every project would evaluate its impacts (see Figure 3) as these provide the most reliable measure of the project's success. However in practice, impacts can sometimes be challenging to evaluate, for example some conservation impacts may not become measurable until after the project has finished while others may be too costly to measure with the resources available. In these cases outcomes – shorter-term changes resulting from the project – can be used to indicate the likelihood of future impacts. There is a trade-off involved, in the sense that the further away from impacts you measure, the more challenging it is to be certain about the conclusions you are reaching. Effective evaluation therefore requires a balance between trying to obtain the most useful results and tackling questions that are feasible to measure.

**FIGURE 3:** Links between project stages, typical ease of measurement vs utility as a predictor of impact, and the stages that PRISM's guidance and methods focus on (adapted from USFWS (2014) Standard Measures of Effectiveness and Threats for Wildlife Conservation in Central Africa, Version 1.0).



## WHY FOCUS ON OUTCOMES & IMPACTS?

### EXAMPLE

Example: A project is aiming to reduce chimpanzee poaching by providing training to park rangers to conduct more effective patrols. The desired impact is to see an increase in the number of chimps. However, since chimps reproduce relatively slowly, this is not measurable within the project's lifetime. Equally, simply counting how many rangers were trained does not indicate whether the training has made patrols more effective. Instead, it might be best to evaluate whether better patrolling resulted in a decrease in the number of snares being set (the main cause of chimp mortality), compared to other areas, or to the number of snares present before training. In time, a reduction in the number of snares might be expected to contribute to decreased mortality and thus to an increase in chimp numbers.



Photo credit: Emily Wroblewski (Stanford University)



## DOES THE PROJECT'S DESIGN ALLOW FOR EVALUATION OF OUTCOMES/ IMPACTS?

### Does the project's design allow for evaluation of outcomes/ impacts?

Whether or not you can effectively evaluate your project's outcomes/impacts will often depend on whether the project has a clear and logical design<sup>2</sup>. This should be based on a good understanding of both the conservation issue being addressed and how the project's actions could be expected to bring about the intended conservation impacts.

Another way of framing this is to ask the question “**why do you think this project will work?**”

For example, the design of the chimpanzee project outlined in the previous section could be illustrated like this:



If the project has a clear and logical design this makes it much more straightforward to come up with clear questions and hypotheses that can be tested during the evaluation, and allows you to make effective judgements on the project's success and lessons learnt. For example:

**Project design:** If the project can decrease poaching by training park guards, then chimpanzee populations should recover

**Questions:** Did training help park guards to prevent poaching from occurring?

Did chimpanzee populations recover?

Equally if the project design lacks a clear rationale this makes it extremely challenging to identify which aspects of the project should be evaluated and to make any kind of judgement on whether or not the project has been a success.

<sup>2</sup>Although good project design is crucial for effective evaluation, please note that PRISM is not a resource for designing a conservation project or project actions. Instead this toolkit is focused on how to evaluate project outcomes & impacts. Several excellent resources exist for designing and implementing conservation actions. The Open Standards for the Practise of Conservation: [cmp-openstandards.org/](http://cmp-openstandards.org/) is one of the most useful and widely applied of these.

DOES THE PROJECT'S DESIGN ALLOW FOR EVALUATION OF OUTCOMES/ IMPACTS?

EXAMPLE: CONSIDER THE FOLLOWING TWO PROJECTS:

**PROJECT A**

*Having established that the decline of the Yellow-eared Parrot in the Colombian Andes is linked to the overharvesting of the quindío wax palm for use in Palm Sunday celebrations, conservationists conducted an education campaign backed by the Catholic Church to raise awareness and promote sustainable alternatives for palm fronds during Easter festivities.*

This project has a clear design informed by a solid understanding of the underlying conservation issue (i.e. if the main threat - overharvesting of wax palm - is addressed then the species population should improve). Because of this it is relatively straightforward to see how the project might be evaluated, either by focusing on a relevant ecological characteristics of the project's conservation target (e.g. greater nest density of Yellow-eared Parrot) or by focusing on measures to address the threats relating to the underlying conservation issue (e.g. a reduction in palm felling, a reduction in the use of palm fronds during Easter festivities).

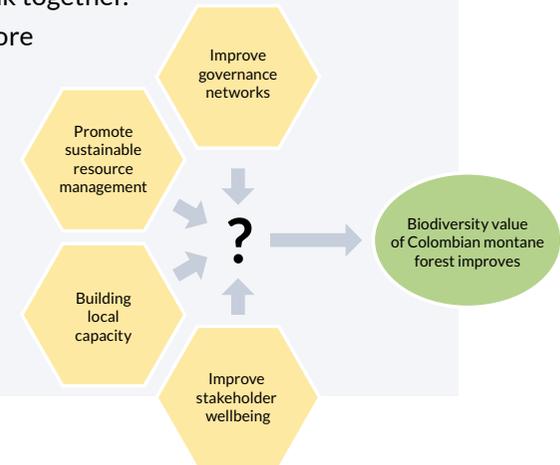


**PROJECT B**

*Recognising the biodiversity value of the montane forests of the Colombian Andes, home to globally threatened species such as the Yellow-eared Parrot, conservationists launched an integrated conservation and development project in a nearby community. The project included components on sustainable resource management, institutional capacity building, governance networks and stakeholder empowerment and well-being.*

While many of these actions may be worthwhile, this project lacks a clear design. The project does not have a clear conservation target and there appears to be a limited understanding of the factors affecting biodiversity loss and how the project's actions will address these. Instead, a range of different approaches is proposed without a coherent design showing how these link together.

This makes it much more difficult to come up with clear questions for an evaluation to address.

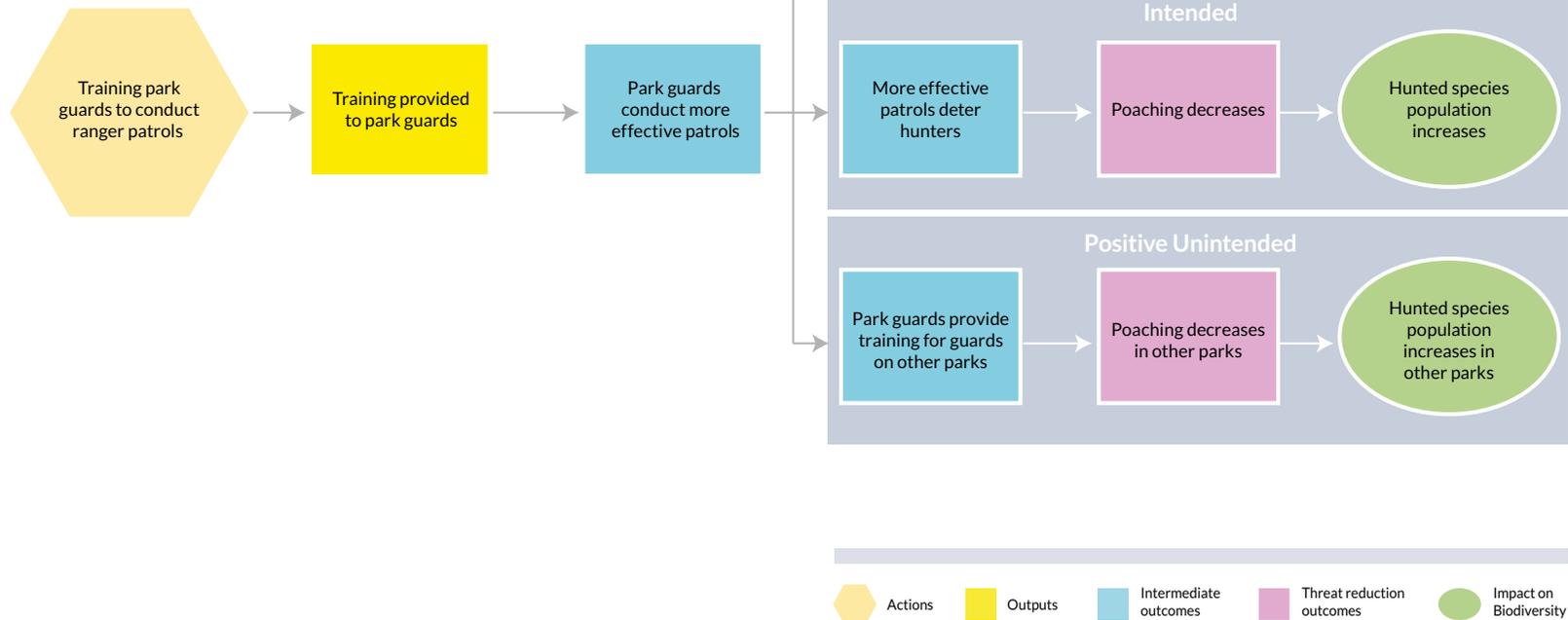


## UNINTENDED OUTCOMES & IMPACTS

### Unintended outcomes & impacts

Sometimes projects result in changes that were not anticipated in the original project plan.

Often evaluation is focused on the **intended** consequences of a project, i.e. whether the project's results match what was expected. However, conservation settings are often complex and thus conservation actions frequently have **unintended outcomes/impacts**, which can be **positive** or **negative** (see Figure 4). Learning from these unintended outcomes is extremely valuable; even when things go wrong, this information is important for developing successful projects in future.



## UNINTENDED OUTCOMES & IMPACTS

### Conservation and impacts on human well-being

Conservation actions can have complex and socially-differentiated impacts on people: some people might benefit, others might find that they are negatively affected; or the project may offer long-term benefits but in the short term may make people more vulnerable. Even when project actions do not involve working directly with people the project may still have outcomes and impacts that affect those living and working nearby.

Where unintended outcomes/impacts occur they are often felt most by those living closest to the project or those who rely on the area's natural resources. As such, it is often necessary to identify and, wherever possible, minimise any negative social impacts. Projects can do this by incorporating questions relating to human well-being into their evaluation. For example whether the project has affected any of the following:

- **Material well-being** - the material circumstances of a person's life (such as housing, income, livelihood, health and the environment).
- **Relational well-being** - how people engage with others to meet their needs (for example through community networks and social institutions).
- **Subjective well-being** - how people feel, and their satisfaction with different aspects of their life.

More information and methods for evaluating well-being can be found in the Livelihoods & Governance module.

For more detailed information on evaluating well-being impacts of conservation projects you should refer to the following publication: <http://pubs.iied.org/14667IIED/>.

### Learning as a project outcome/impact

Unintended outcomes and impacts are particularly valuable for capturing lessons and applying these to inform future conservation work. In addition to evaluating the project's conservation outcomes, this learning should be seen as a project outcome in itself.

### Perceptions of unintended outcomes/impacts

Whilst everyone likes to tell donors about their successes, in reality many donors are more interested in seeing the realities of projects, and are keen to see how project leaders learn from unintended outcomes. Even if these results are not shared externally they are invaluable for learning and for adapting a project so that it will have a greater chance of success in the future. [See Step 4. What should be done next?](#) for more information on how best to use and apply the results of your evaluation.

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Woodhouse, E et al. (2016) Evaluating the impacts of conservation interventions on human wellbeing. Guidance for practitioners. IIED, London

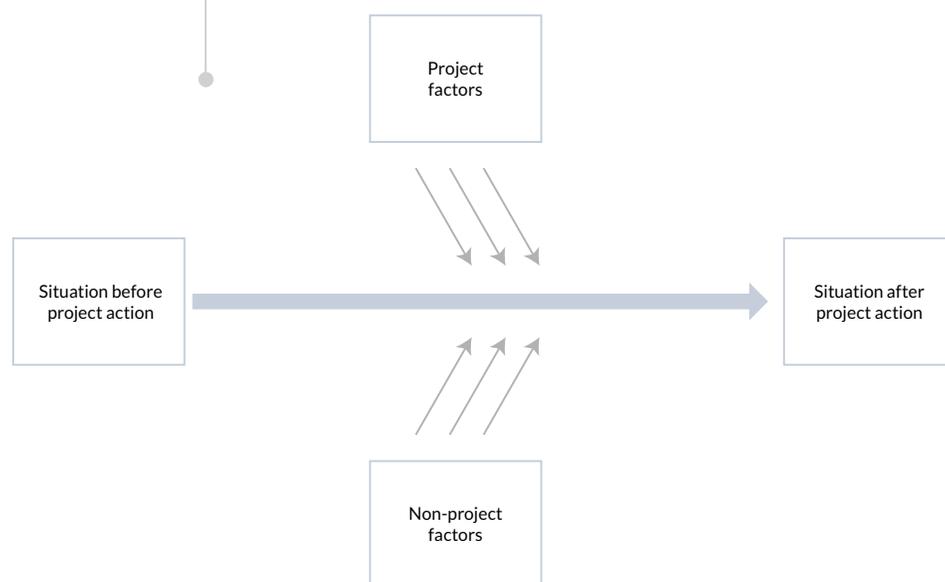


## WAS THE CHANGE RECORDED CAUSED BY THE PROJECT?

### Was the change recorded caused by the project?

As well as identifying outcomes & impacts that have occurred, it is usually the aim of evaluation to investigate whether these changes resulted from the actions of the project, rather than from other external factors. Evaluation often therefore requires not only measuring changes that happened during the project, but also identifying which changes were due to the project and which were not. This process is called **attribution**.

**FIGURE 5: ATTRIBUTION IN A PROJECT ACTION  
(ADAPTED FROM CATLEY ET AL., 2014).**



Many evaluations only measure conditions before and after the project: while this might be acceptable for some outcomes/impacts, it will not distinguish changes that were caused by other external factors. Thankfully, there are several options available to small/medium-sized projects to help in attributing change to the actions of the project itself, and to control for external factors – see the section on [designing your evaluation](#) for more information.

### EXAMPLE

Example: A project attempted to reduce poaching by undertaking patrols to remove snares. By the end of the project the team recorded that there had been a reduction in the frequency of snares in the area being patrolled. However the team quickly realised that there were a number of other factors that could potentially explain the reduction in numbers of snares, for example the reduction could have been caused by the patrols or alternatively the reduction could have been caused by falling food prices and a consequent reduction of demand for bushmeat; or it could be a combination of the two.

The team then collected additional data that allowed them to compare the number of snares from neighbouring areas with similar characteristics to the project site that were not subject to the patrols. This gave the team a better understanding of whether the observed reduction in snares could be attributed to the project.

Catley, A., Burns, J., Abebe, D., Suji, O. (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf)

## BE REALISTIC AND FOCUS ON INTERPRETING, RATHER THAN JUST PRESENTING RESULTS

### Be realistic and focus on interpreting, rather than just presenting results

Evaluation requires you to make judgements based on the available information. While ideally you would have all relevant information available to you, in the real world the amount of information available may only provide a partial explanation of the project's results.

There can be a temptation to be overly scientific and to focus on presenting quantitative results (e.g. in the form of numbers or graphs). However, the most useful evaluations are typically those that carefully consider the information available, and then use this information to develop an interpretation which explains the project's results.

For example the fact that long term impacts are not measurable within the project's timeframe means that you will often need to use information collected on outcomes to explain the likelihood of future impacts. Equally you may find it impossible to isolate and collect data on all the different factors, risks and assumptions which may influence the project's outcomes and impacts, so you may often need to rely on qualitative evidence (e.g. interviews), both from participants and from your own observations and understanding of the situation, to explain and contextualise the project's results.

A good evaluation therefore usually requires two kinds of thinking. It requires the ability to think like a scientist when designing the evaluation and collecting data, and then to think more like a detective or an investigative journalist to interpret results and make judgements based on the information available.

PRISM's step by step process is designed to help you design and carry out your evaluation in this way. [See Section 2: Step by step guide for evaluating project outcomes and impacts](#) for more information.



Photo credit: Tsubasa Iwabuchi



## TIPS FOR EFFECTIVE EVALUATION IN SMALL/MEDIUM- SIZED PROJECTS

<b>Start early</b>	The earlier you start to think about how you will measure project outcomes & impacts, the easier it is. Starting late in a project is still possible, but often makes it harder to demonstrate change and to link outcomes and impacts to project actions.
<b>Be clear about why you want to evaluate</b>	There are many potential ways that the results of an evaluation could be used. For example you might want to demonstrate results externally, use results to learn internally or a combination of both. Investing time to clarify who the evaluation's key stakeholders are, and how the results of the evaluation will be used, will help you determine the most appropriate evaluation questions, which in turn will influence the methods and your plans for applying and communicating the results.
<b>Don't try to measure everything</b>	Measuring one useful element of a project effectively is better than measuring several things poorly. For smaller projects the key to effective evaluation is to focus on the outcomes & impacts of the project where the most useful results will be generated with measures that are feasible to implement.
<b>Ensure the project has a clear design</b>	Having a project design which clearly outlines how your actions will bring about change (going from actions to outcomes and impacts) will provide a framework you can use to guide the evaluation, and will make interpretation of results much simpler.
<b>Don't just view evaluation as a reporting requirement</b>	If fulfilling reporting requirements is the primary purpose when evaluating it is unlikely to generate enough motivation within the team to carry it out effectively. Perhaps most importantly evaluation allows you to test and improve what you are doing; for example by informing future decisions, both within the project and beyond. Sharing evaluation results helps to promote transparency, adaptive management and to create an evidence base for conservation learning.
<b>Remember that negative outcomes/impacts are as important as positive ones</b>	Evaluation is often driven by a desire to show that that a project was successful or worthwhile. However, understanding and sharing what didn't work is sometimes more important, and can help others to avoid unfruitful efforts. Don't be scared to report these things to donors; most donors will welcome this, especially if you can demonstrate that you learned something from the experience.



**prism**

## SECTION 2

# STEP BY STEP GUIDE FOR EVALUATING PROJECT OUTCOMES AND IMPACTS

## CONTENTS

### SECTION 2

#### Section 2 Step by step guide for evaluating project outcomes and impacts

[How to use this toolkit to evaluate your project's outcomes and impacts](#)

##### STEP 1



##### What do you need to know?

[What is the project trying to achieve?](#)

[Why do you want to evaluate?](#)

[What questions do you need to answer?](#)

##### STEP 2



##### What data do you need to collect?

[How will you know which outcomes/impacts can be attributed to the project?](#)

[How will you collect evaluation data?](#)

##### STEP 3



##### What can you learn from the results?

[How will you analyse your data?](#)

[What do the results show?](#)

##### STEP 4



##### What should be done next?

[How will you use the evaluation results?](#)

## HOW TO USE THIS TOOLKIT TO EVALUATE YOUR PROJECT'S OUTCOMES AND IMPACTS

### How to use this toolkit to evaluate your project's outcomes and impacts

For any project, evaluating outcomes & impacts involves finding a balance between focusing on the outcomes/impacts of the project where evaluation will be most useful, and designing an evaluation that is feasible to implement. So like a glass prism is designed to separate white light so that you can see the different colours of the spectrum, the PRISM toolkit is designed to help conservationists to separate out the different elements of a project, focus on the key outcomes/impacts to evaluate and then use methods appropriate for smaller projects to design and carry out an effective evaluation (see Figure 6).

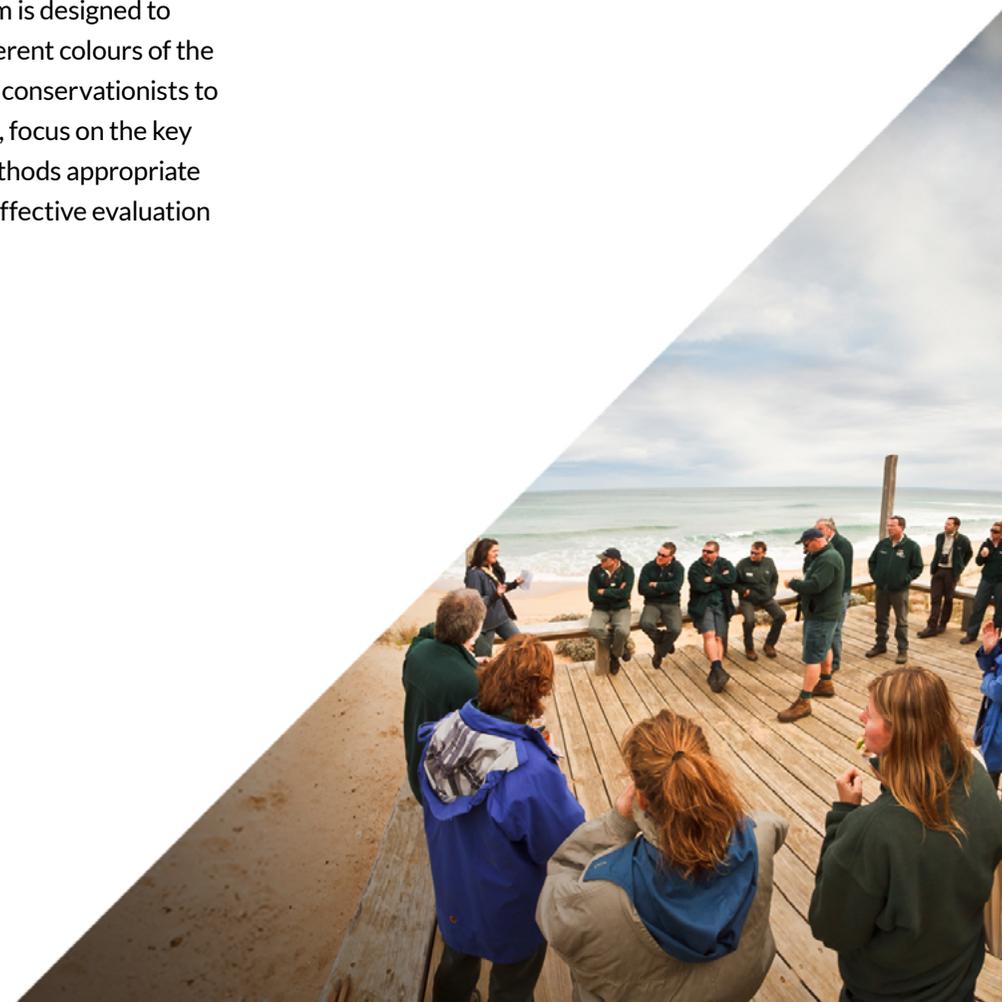
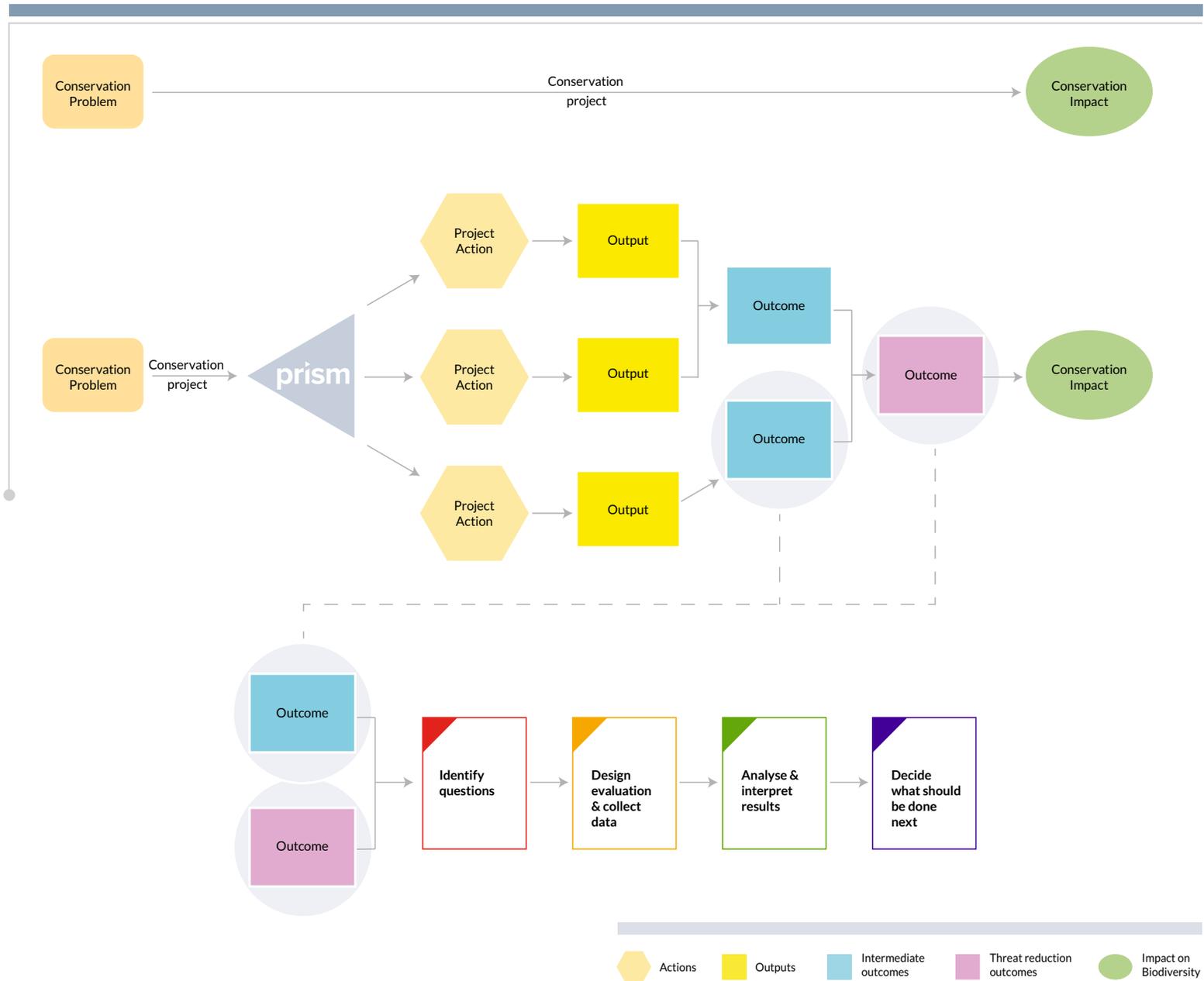


Photo credit: Glenn Ehmke



# HOW TO USE THIS TOOLKIT TO EVALUATE YOUR PROJECT'S OUTCOMES AND IMPACTS

FIGURE 6



In this toolkit, the process of designing and implementing an evaluation is broken down into four main steps. This section of the toolkit has been colour-coded according to the steps outlined below:

## HOW TO USE THIS TOOLKIT TO EVALUATE YOUR PROJECT'S OUTCOMES AND IMPACTS

**STEP 1**  
WHAT DO YOU  
NEED TO KNOW?

Identify which of the project's outcomes/ impacts to focus on, and the evaluation questions that you will try to answer.

**STEP 2**  
WHAT DATA  
DO YOU NEED  
TO COLLECT?

Design the evaluation and select appropriate data collection methods that will allow you to answer your evaluation questions.

**STEP 3**  
WHAT CAN  
YOU LEARN FROM  
THE RESULTS?

Analyse and visualise data then examine the data to find out what can be learnt from the results, and what the results mean in relation to the overall goal of the project.

**STEP 4**  
WHAT SHOULD  
BE DONE NEXT?

Apply results to improve practice and share results with the wider conservation community.



## HOW TO USE THIS TOOLKIT TO EVALUATE YOUR PROJECT'S OUTCOMES AND IMPACTS

**STEP 1**  
**WHAT DO YOU NEED TO KNOW?**

QUESTIONS ADDRESSED

**What is the project trying to achieve?**

**Why do you want to evaluate?**

**What questions to you need to answer?**

- What questions could be considered in the evaluation?
- Which questions should I focus on?
- Are there any unintended outcomes/impacts I need to consider?

**STEP 2**  
**WHAT DATA DO YOU NEED TO COLLECT?**

QUESTIONS ADDRESSED

**How will you know which outcomes/impacts can be attributed to the project?**

- What is evaluation design?
- Which evaluation design should I use?
- Am I measuring attribution or contribution?

**How will you collect evaluation data?**

- What kind of data is needed?
- Can any existing data be used?
- Do I need to control for bias?
- Are the methods ethically sound?
- What sampling strategy should I use?
- What data collection methods should I use?

**STEP 3**  
**WHAT CAN YOU LEARN FROM THE RESULTS?**

QUESTIONS ADDRESSED

**How will you analyse your data?**

- How should I enter, organise and clean data?
- What is the unit of analysis?
- What data analysis methods should I use?
- How should I compare data collected using different methods?
- How should I present evaluation data?

**What do the results show?**

- How should I interpret evaluation results?

**STEP 4**  
**WHAT SHOULD BE DONE NEXT?**

QUESTIONS ADDRESSED

**How will you use the evaluation results?**

- Developing recommendations
- Can results be used to improve the project?
- How will results be communicated to external audiences?
- Can results be shared with the wider conservation community?



## STEP 1

### WHAT DO YOU NEED TO KNOW?

#### Step 1 What do you need to know?

There are many different things that could be looked at in an evaluation and it's likely that you will not be able to measure all of them. Therefore, before collecting any data it is usually necessary to focus the evaluation to ensure that the effort and resources used will deliver the most useful results. This involves looking carefully at your project's outcomes and impacts and trying to find the right balance between trying to gain answers that are as **useful as possible** while still being **feasible to measure**.

This section will help you to outline the project's outcomes and impacts then to use this outline to identify and prioritise which outcomes/impacts you want to measure, and to come up with a set of questions that you will try to answer during the evaluation.

#### STEP 1

##### QUESTIONS ADDRESSED IN THIS SECTION:

- What is the project trying to achieve?
- Why do you want to evaluate?
- What questions do you need to answer?
  - What questions could be considered in the evaluation?
  - Which questions should I focus on?
  - Are there any unintended outcomes/impacts I need to consider?



## WHAT IS THE PROJECT TRYING TO ACHIEVE?

### STEP 1

#### What is the project trying to achieve?

Before you begin to develop your questions you first need to make sure that the project's design allows you to evaluate the outcomes and impacts.

This involves checking your project's design by examining the links between each stage of the project from actions and outputs through to outcomes and impacts. The project design should show a clear and logical path demonstrating how the project's actions could be expected to lead to the project's desired impacts. The logic underpinning the project's design should be based on a clear understanding of the conservation issue(s) being addressed and any relevant assumptions that have been made. This should allow you to answer yes to the following questions:

**Does the project have a clear intended impact?** – e.g. improvement in status of a particular species, change in stakeholder behaviour relating to a conservation target.

**Is it clear how the project's action(s) will bring about these impacts, i.e. if we do X is it reasonable to expect that Y will happen?** – e.g. if we train park rangers, is it likely that this will lead to a decrease in poaching?

**Have you considered what other factors could potentially affect the project's results?** – e.g. if we train park rangers, are there any additional factors that could affect the target species populations at the project site?

Projects often find it useful to have a visual depiction outlining the project's design and rationale. This outline then enables you to focus on the key outcomes/impacts to address in the evaluation. There are several different approaches you can use for this: Theory of Change, results chains, logic models and logical frameworks (logframes) all serve this purpose and are widely used in conservation projects.

As a rough guide:

Approach	Description
Results chain/logic model	Flow diagram showing how the project's actions are expected to lead to subsequent outputs, outcomes & impacts
Theory of Change	Similar to a results chain but also outlines risks and assumptions which are relevant to the achievement of the project's outcomes & impacts
Logical framework	Shows information similar to that in a Theory of Change but presented in a table, rather than a flow diagram



**STEP 1****WHAT IS THE  
PROJECT TRYING  
TO ACHIEVE?**

Although PRISM refers primarily to **Theory of Change** we would encourage you not to spend too much time worrying about the difference between these different approaches. The aim of all of the above is to map out the project's design and to provide a framework showing how your project will bring about change, and this is then used to design and plan the evaluation.

If the links between any stages of the project are unclear, then the project's design may need to be re-visited and adjusted accordingly. If the project has already finished, then these design factors should be recorded as something which may affect the evaluation results.

See the Open Standards: <http://cmp-openstandards.org/> for more information on developing and improving project design.

Refer to the factsheet [Completing a Theory of Change](#) for information on how to construct a simple Theory of Change.

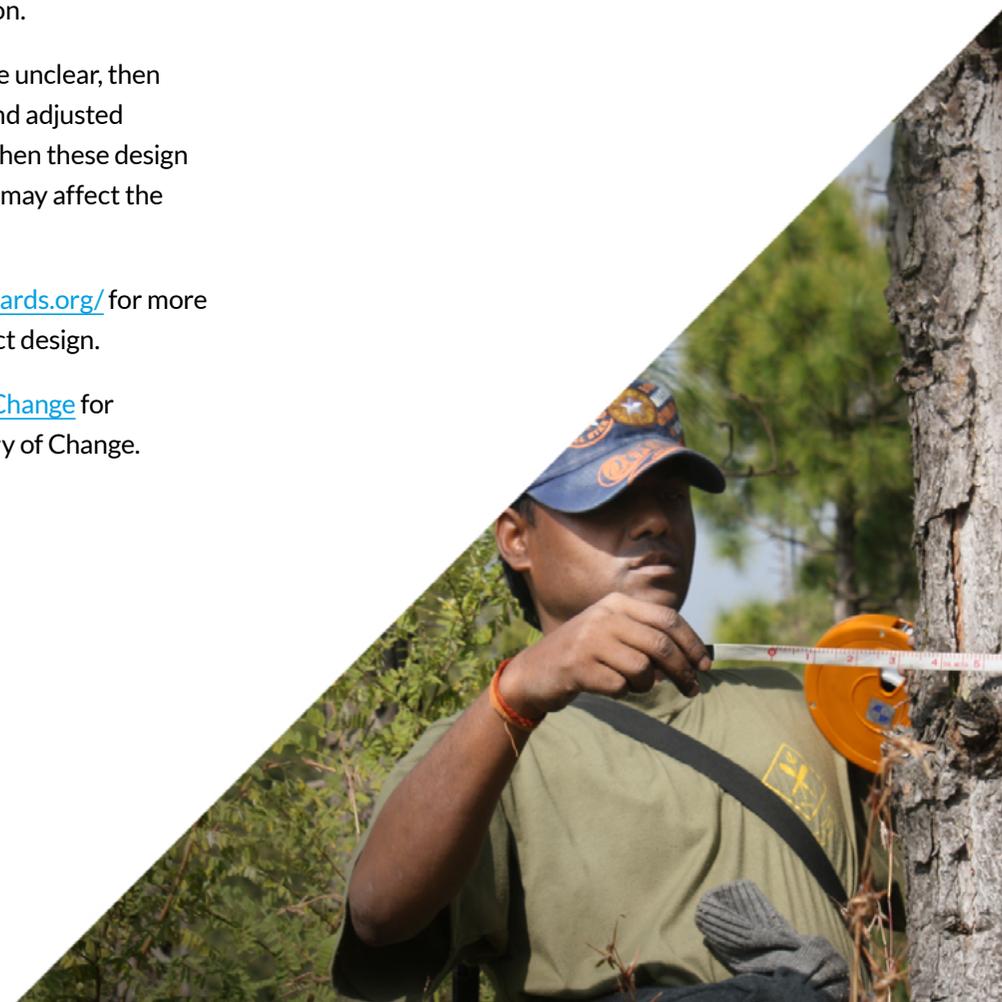
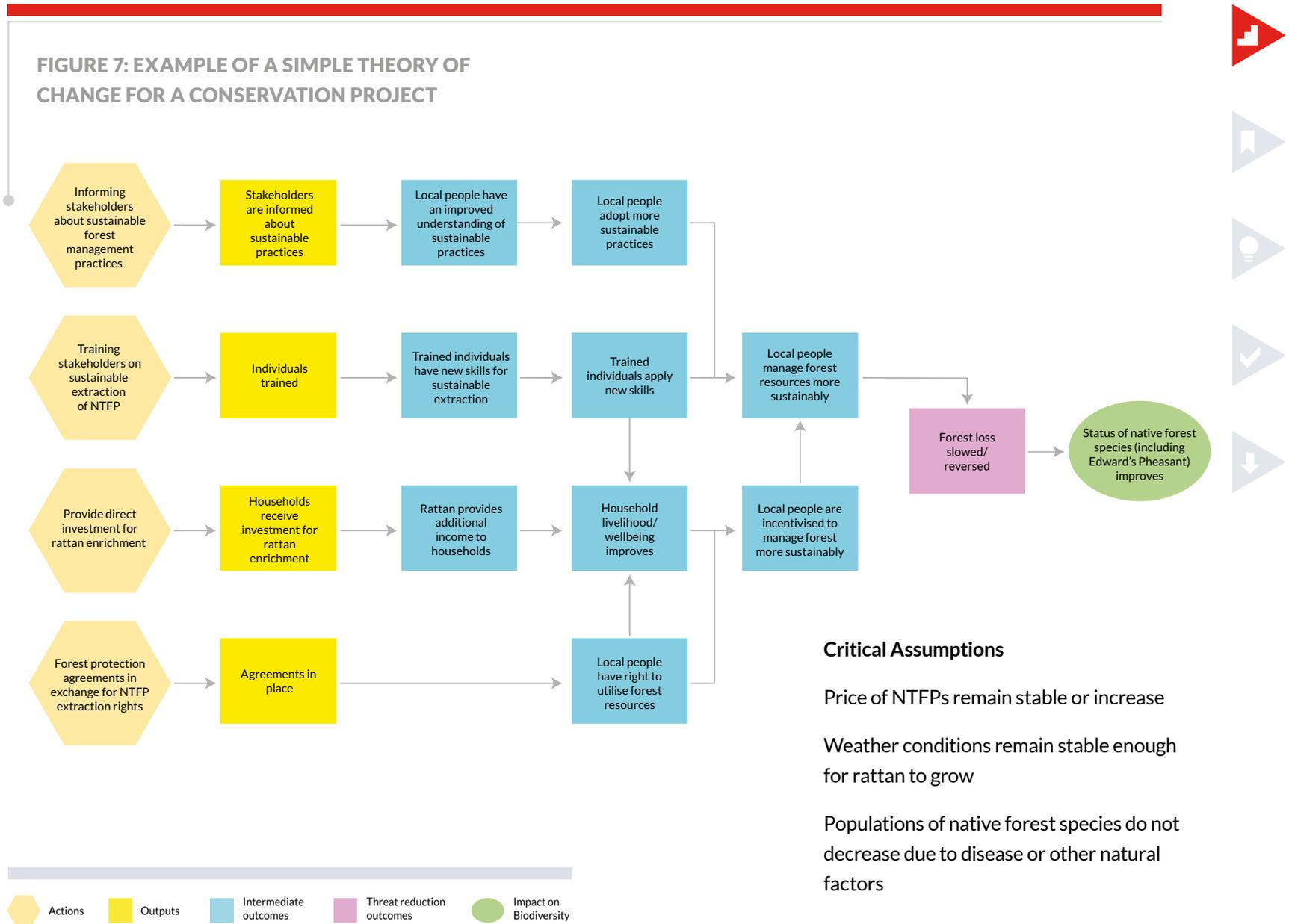


Photo credit: David Thomas



**STEP 1**  
EXAMPLE OF A SIMPLE THEORY OF CHANGE FOR A CONSERVATION PROJECT

FIGURE 7: EXAMPLE OF A SIMPLE THEORY OF CHANGE FOR A CONSERVATION PROJECT



**STEP 1****WHY DO YOU  
WANT TO  
EVALUATE?****Why do you want to evaluate?**

Once you have reviewed the project's design you should set out why you want to evaluate in the first place. The best way to do this is to briefly spend some time to identify how evaluation results will be used, and by whom.

Note that there will typically be a large number of stakeholders who could **potentially** benefit from the results of the evaluation. However for the purposes of deciding what to evaluate, it is best to stick to the stakeholders who **need** to know the results of the evaluation. Typically this includes:

- The project team and/or the implementing organisation
- The project donor(s)
- Other key stakeholders whose involvement is crucial to the success of the project (e.g. key decision makers being targeted by the project, community members involved in the project).

Note that this is not meant to be an exercise for identifying all the potential ways in which the results of an evaluation could be used, but is instead meant to help to focus on the key outcomes and impacts to address in the evaluation.

See the factsheet [Identifying why you want to evaluate](#) for advice on how to do this.

**EXAMPLES OF EVALUATION USES AND USERS INCLUDE:**

STAKEHOLDER GROUP	WHAT DO THEY NEED TO KNOW?	HOW WILL THEY USE THE INFORMATION?
<b>Project team</b>	Was the action successful?  Why/how was the action successful?	Modifying the project  Demonstrating results to donors
<b>Donors</b>	Did the project deliver as expected?  What lessons were learnt?	External communications  Guiding future investment and programme design
<b>Key decision makers (e.g. Local authorities, Politicians, Law enforcement, Private sector)</b>	What was the impact on local people?	Informing management/policy decisions
<b>Wider conservation community</b>	What lessons were learnt?	Distributing results  Using results to inform conservation practice

**STEP 1****WHAT QUESTIONS  
DO YOU NEED TO  
ANSWER?****What questions do you need to answer?**

Once you have considered the project's design and the evaluation audience, the next task is to use this information to identify and prioritise which outcomes/impacts you want to focus on, and come up with a set of guiding questions that you will try to answer during the evaluation.

The process of identifying appropriate questions determines what data need to be collected. Answering these questions then guides the interpretation of the evaluation results and the process of deciding what to do next. A good set of evaluation questions will therefore greatly enhance your chances of producing useful results. Equally, evaluation questions that are poorly thought out risk wasting valuable time and/or producing unreliable results.

**What questions could be considered in the evaluation?**

Start by asking yourself "what do I need to know in relation to the project?".

The table on the following page lists some of the different kinds of questions that could be asked during an evaluation, along with some specific examples.

A good way to approach this process is to look at your project's outcomes & impacts (as outlined in your Theory of Change or equivalent) and, in a small group, brainstorm potential evaluation questions that could be addressed. At this stage it is recommended that you keep the questions quite broad - later you will be able to break them down into sub-questions to use as you are collecting data.

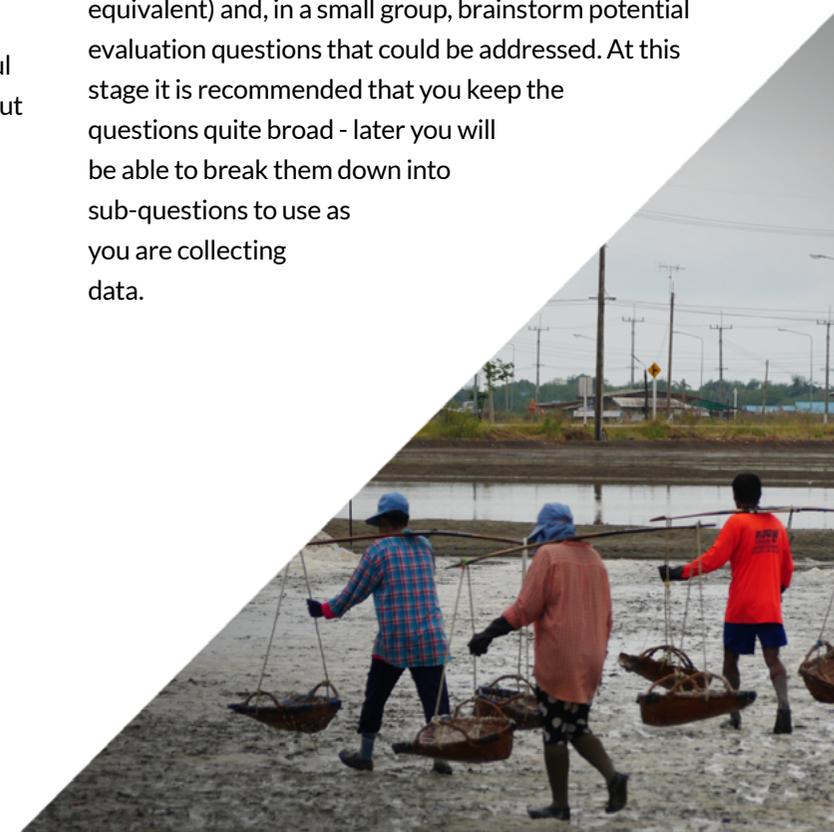


Photo credit: Iain Dickson



## STEP 1

TYPES OF  
QUESTIONS

TYPE OF QUESTION	DESCRIPTION	EXAMPLES
<b>Process questions *</b>	Is the project delivering as expected?	<ul style="list-style-type: none"> <li>Is the project proceeding as expected?</li> <li>Does the project need to change anything to ensure successful delivery?</li> </ul>
<b>Descriptive questions</b>	What change(s) have occurred since the project began?	<ul style="list-style-type: none"> <li>Has the number of migrant shorebirds using the target site increased since the project began?</li> <li>Have household incomes increased since the start of the project?</li> </ul>
<b>Causal questions</b>	To what extent are any change(s) due to the project?	<ul style="list-style-type: none"> <li>Did the project improve the habitat quality for shorebirds at the project site?</li> <li>Did the project improve the income of participating households?</li> <li>What other factors may have influenced the results?</li> </ul>
<b>Synthesis questions</b>	What do any changes mean in relation to the overall aim of the project?	<ul style="list-style-type: none"> <li>What do the project's results mean for regional populations of shorebirds?</li> <li>What difference has the project made to the lives of participants?</li> </ul>
<b>Learning questions</b>	What can we learn from the results?	<ul style="list-style-type: none"> <li>Did the method(s) used by the project work as planned? If not, why not?</li> <li>Were there any unintended impacts? If so, what were they?</li> <li>Did the project have any negative outcomes? If so, how could these be avoided in future?</li> </ul>
<b>Action questions</b>	What should be done next?	<ul style="list-style-type: none"> <li>Should the project continue? Should it be scaled up?</li> <li>Should the project's approach be used in other areas?</li> <li>Which project results could be shared with other conservationists and/or other relevant stakeholders?</li> </ul>

\* Note that process questions are not sufficient to evaluate outcomes/impacts, but they are useful for tracking project progress, making changes to on-going actions and reporting to donors



**STEP 1****WHICH  
QUESTIONS  
SHOULD I FOCUS  
ON?****Which questions should I focus on?**

Although the ideal scenario might be to try to answer questions relating to all your project's outcomes and impacts this is rarely possible in practice. For example some outcomes/impacts may not be measurable with the time and resources available, while others may be less important to the success of the overall project. Instead it is usually far more valuable to focus on obtaining **reliable** answers to a **smaller** number of questions (aim for no more than five).

Choosing which questions to answer in your evaluation will depend largely on the following:

- **Which questions will provide the most useful information?**
- **Are the questions feasible to answer?**

**Which questions will provide the most useful information?**

Looking at the project's outcomes/impacts, ask the following:

**Which outcomes/impacts are most important to the success of the project?** - Consider the project's design, your understanding of the underlying conservation issue and the needs of your evaluation audience. Try to identify and focus on the outcomes and impacts that are particularly important to the success of the project and the questions you need to know in relation to these.

**EXAMPLE**

**Example:** A project aimed to increase the population of a threatened species of orchid threatened by overharvesting for the domestic flower trade. To achieve this the project carried out surveys to map the remaining populations of orchids, workshops with wild flower collectors on sustainable harvesting techniques and awareness raising presentations in local schools.

**Intended outcomes:** Increased awareness of orchids among local schoolchildren, improved knowledge of the location of remaining populations of orchids and reduced harvesting of orchids by local people

**Evaluation questions:** The team decided that the evaluation questions that would provide the most useful information were those relating to whether the project had been successful in reducing the harvesting rate of wild orchids by local people, as these would show whether the project had addressed the main threat affecting the conservation target.



## STEP 1

HOW WELL  
KNOWN IS THE  
ACTION BEING  
EVALUATED?

**How well known is the action being evaluated?** - One of the main reasons to evaluate is that it enables the sharing of experience and evidence across the conservation sector. Equally, when prioritising your evaluation questions you should research whether the project's approach has been applied elsewhere and in similar contexts.

If the action that you are measuring has been thoroughly tested and its outcomes and impacts are well known, then an evaluation may be of limited use. For example if the action has been regularly applied and tested in similar contexts, or the project is scaling up actions that have previously been trialled at the target site, in these cases you may be better off measuring a different action or simply measuring project delivery, and thereby saving resources.

Conversely an evaluation may be particularly useful in the following situations:

- Innovative (untested) schemes
- Pilot actions that are due to be scaled up
- Actions for which there is a lack of solid evidence of impact in the given context
- Generalisable actions that an organisation is planning to adopt widely.

There are several places where you can find information on different conservation approaches that have been tested and the results of which have been shared. CMP's Miradi-CAML database: <http://cmp-openstandards.org/tools/caml/> and [Conservation Evidence: http://www.conservationevidence.com/](http://www.conservationevidence.com/) are two particularly useful resources.

**Are the questions feasible to answer?**

Once you have identified and developed questions for the outcomes and/or impacts where an evaluation would be most useful, the next step is to check whether these questions are feasible to measure. Feasibility should be measured against the following three criteria:

**Available time** - Many long-term outcomes (such as changes in biodiversity status) can take a long time for results to show. You need to ensure that the outcome(s) you are evaluating will be measurable with the time available.

**Available data** - Are the necessary data already available? If not then you need to be able to collect these data over the course of the project.

**Available resources** - Ensure that your plans are realistic in light of the time, skills and resources available.

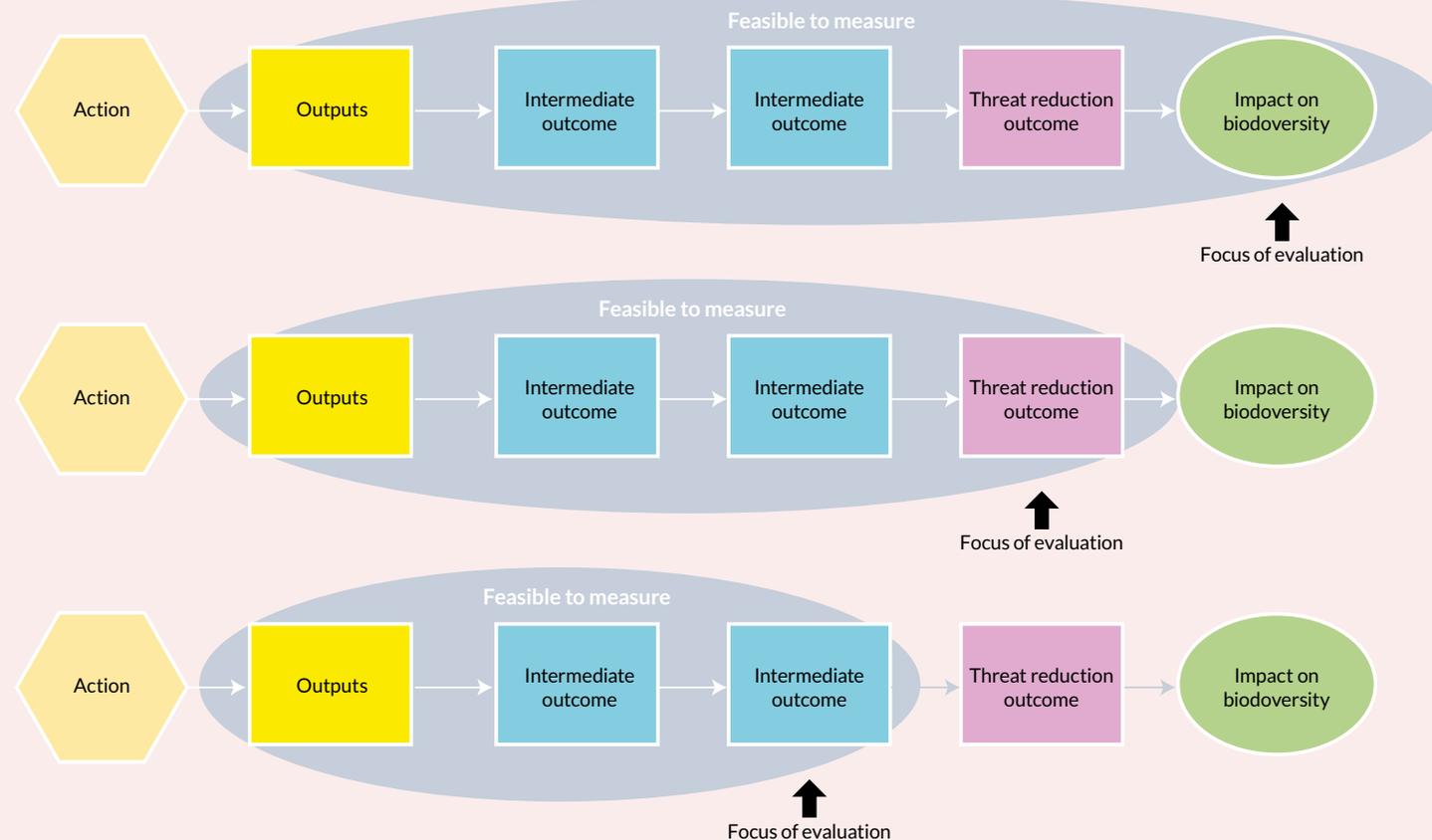
Refer to the factsheet [Evaluation feasibility checklist](#) for a set of criteria that you can use to judge whether a particular evaluation question will be feasible to evaluate.



**STEP 1****TIP FOR  
PRIORITISING  
QUESTIONS**

**Tip for prioritising questions** - The ultimate aim of most conservation projects is to have an impact on the status of a particular species or habitat. So when prioritising evaluation questions, one way to approach this is to begin with your project's impacts, develop appropriate questions and then apply the criteria above to see whether the questions are feasible to measure.

If evaluation of conservation impact is not feasible then move back down the chain to look at threat reduction outcomes (e.g. reduced consumption of a hunted species following an education programme, reduction in invasive species population), and if this is not possible move the focus to intermediate outcomes. Then when interpreting and applying the results these should be explained in the context of how changes relating to these outcomes can be expected to lead to subsequent outcomes & impacts.



## PRIORITISATION MATRIX

### STEP 1

#### Prioritisation matrix

A very useful exercise that can help to prioritise evaluation questions is to complete a prioritisation matrix. This helps you to review the usefulness and feasibility of each of the project's outcomes & impacts and to prioritise evaluation questions based on the criteria outlined in this section. See below for a completed example. Refer to the factsheet [Completing a prioritisation matrix](#) for more information.



## Prioritisation matrix

**STEP 1**

**PRIORITISATION  
MATRIX**

OUTCOME/ IMPACT	EVALUATION QUESTION(S)	WHICH STAKEHOLDERS CARE ABOUT THIS?	IMPORTANCE TO USERS	IMPORTANCE TO PROJECT SUCCESS	HOW WELL KNOWN IS THE ACTION BEING EVALUATED?	EASE OF DATA COLLECTION	CAN THIS BE ANSWERED GIVEN YOUR TIME & RESOURCES	PRIORITY
Status of native forest species improves	To what extent have populations of native forest species changed since the project began and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Low	No	Eliminate – Not possible to measure within project timeline
Forest loss slowed/reversed	Has there been a change in the rate of forest loss since the project began and if so can this change be expected to persist	Participating households Local authorities; Project team Project funder	Med	High	Low	Low	No	Eliminate – Not possible to measure within project timeline
Local people manage forest resources more sustainably	Has there been a change in the way local people manage forest resources and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Med	Yes	High - Crucial to project success and measurable with available time / resources
Local people are incentivised to manage forest more sustainably	Have the project's actions given local people more of an incentive to manage forest resources sustainably and if so can this be expected to persist?	Participating households; Local authorities	Med	High	Low	Med	Yes	High - Crucial to project success and measurable with available time / resources
Local people have right to utilise forest resources	Have agreements provided local people with the right to utilise forest resources?	Participating households Local authorities	High	High	Med	High	Yes	High - Crucial to project success and measurable with available time / resources
Household livelihood/wellbeing improves	Have household livelihoods and/or wellbeing status improved as a result of the project's actions	Participating households Local community Project Funder	High	High	Med	Low	Partially	High - Crucial to project success and measurable with available time / resources
Rattan provides additional income to households	Has the rattan planted with support from the project provided (or will provide) households with additional income?	Participating households Local community	Med	High	Med	Med	Partially	Med – Rattan yet to be harvested which means income can only be estimated.
Trained individuals apply new skills	Are trained individuals applying any of the skills learnt?	Project team Participating households	Med	Med	Med	Med	Yes	Low – Not as important as other questions



**STEP 1****IDENTIFYING  
SUB-QUESTIONS &  
INDICATORS****Identifying sub-questions & indicators**

Once you have your list of priority evaluation questions it will often be necessary to break each of these down into a number of sub-questions that will suggest what data need to be collected (see below for an example). Then for each sub-question you will need to identify indicators that will allow you to know whether you have answered each question.

An indicator is a *variable that provides a reliable means of measuring a particular outcome or impact.*

Indicators should be simple and specific, and can be numerical (quantitative) or non-numerical (qualitative). The table below outlines potential indicators for the high priority questions listed in the matrix above. See the summary tables in the module chapters for further examples of potential indicators as well as guidance on how to identify appropriate indicators for each module.

OUTCOME	EVALUATION QUESTION	SUB-QUESTIONS	INDICATORS
<b>Local people manage forest resources more sustainably</b>	Has the project changed the way local people manage forest resources?	Do local people now monitor areas covered by agreements?	Number of monitoring patrols carried out by households
		Do local people report infractions to the forest protection department?	Number of infractions reported
		Are local households converting less of the forest for pasture than before the project?	50% reduction in annual area of land converted to pasture compared to before the project
		Do the forest protection department feel that the forest is being managed more sustainably than before?	Key informant interviews report that forest protection department staff feel that more sustainable management is taking place



## STEP 1

### IDENTIFYING SUB-QUESTIONS & INDICATORS

It is important not just to choose questions & indicators that are the easiest to use, for example because the data already exist or other people have used them in the past. Instead, always think back to why you are doing the evaluation in the first place, and consider whether the questions and indicators selected will give you the information that you want. In many cases, it may be better to have a more ambiguous qualitative answer than to persist with using an indicator that may be misleading, for the sake of generating a number. For example, if an action claims to improve local participation in land use governance, a common indicator is attendance at community meetings, but this does not capture whether people had a voice in the meetings or whether their contributions were taken into account in decision-making, for which more qualitative data is needed.

Note that many standardised lists of indicators exist for conservation actions, however it is almost always far more useful to develop indicators yourself based on your project's specific outcomes/ impacts and the evaluation questions you are trying to answer.

#### Indicators for project actions & outputs

It is generally good practice (and often the minimum requirement for reporting to donors) for all projects to develop indicators and to record information on their outputs and the delivery of actions. These are typically recorded in the form of quantity and quality of delivery (e.g. number of stakeholders reached, number of surveys carried out, immediate reaction to a training workshop). As PRISM is focused on evaluation of outcomes & impacts, guidance on developing indicators and collecting information on outputs and delivery of project actions is not covered in detail here. However, when designing your project it is important to consider how this information will be collected, when and by whom.



**STEP 1****ARE THERE ANY  
UNINTENDED  
OUTCOMES/  
IMPACTS I NEED  
TO CONSIDER?****Are there any unintended outcomes/impacts I need to consider?**

Capturing information on unintended outcomes & impacts is immensely valuable (see [Section 1](#)), however because there are so many ways in which a project or action could potentially bring about unintended outcomes & impacts it is often difficult to know where to start. There are two main ways you can approach this:

1. Work internally within the project team before, during and after the project to think about unintended outcomes/impacts. This can include an initial risk assessment and then having points during the implementation of the project where the team meet to discuss possible unintended outcomes/impacts and how data on these can be collected. Exploring assumptions in the project's Theory of Change can also help to identify unintended outcomes/impacts.
2. Include a participatory element in your evaluation where you ask project stakeholders what they feel the main outcomes and impacts of the project will be/are/were.

If possible you should aim to use a combination of both of these approaches. If you decide that the outcomes/impacts identified are significant enough to warrant further investigation, you can build questions into your evaluation that are designed to capture relevant information on them. In any case it is usually good practice to include questions in your evaluation that are **open-ended** in order to explore why, and how, changes have occurred and what they mean in the context of the project.



## WHAT DO YOU NEED TO KNOW? CHECKLIST

- Have you outlined your project's outcomes & impacts in a Theory of Change (or equivalent)?
- Have you identified your evaluation uses & users?
- Have you identified potential evaluation questions for the project's outcomes/impacts?
- Have you prioritised the most important questions to answer, based on usefulness & feasibility?
- Have you developed indicators that will allow you to know when you have answered each question?
- Have you considered potential unintended outcomes/impacts?

## WHAT DO YOU NEED TO KNOW? - TIPS FOR REDUCING TIME/COSTS

POTENTIAL WAY OF REDUCING COSTS	CHALLENGES	SOLUTIONS
Reduce number of evaluation questions	Evaluation may no longer meet the needs of audience	Carefully prioritise evaluation questions



**Step 2** What data do you need to collect?

This is where you design your evaluation in a way that will allow you to answer your evaluation questions and to select appropriate methods that will allow you to collect the data required.

**STEP 2****WHAT DATA DO  
YOU NEED TO  
COLLECT?**

For this step note the difference between evaluation design and data collection methods. Your data collection methods are the tools you will use to collect data (questionnaires, interviews etc.). Your evaluation design outlines how the data collection will be structured in a way that will allow you to answer your evaluation questions.

**STEP 2****QUESTIONS ADDRESSED IN THIS SECTION:**

- How will you know which outcomes/impacts can be attributed to the project?
  - o What is evaluation design?
  - o Which evaluation design should I use?
  - o Am I measuring attribution or contribution?
  
- How will you collect evaluation data?
  - o What kind of data are needed?
  - o Can any existing data be used?
  - o Do I need to control for bias?
  - o Are the methods ethically sound?
  - o What sampling strategy should I use?
  - o What data collection methods should I use?



## How will you know which outcomes/impacts can be attributed to the project?

### STEP 2

## HOW WILL YOU KNOW WHICH OUTCOMES/IMPACTS CAN BE ATTRIBUTED TO THE PROJECT?

### What is evaluation design?

In any area where a project is implemented, changes will take place over time. Some of these changes will have occurred as a result of the project, while other changes may have nothing to do with the project and would have happened regardless of whether or not the project existed. Therefore it is usually the aim of an evaluation to try to find out whether any observed changes were due to the project.

In order to find this out your data collection needs to be designed in a way that will allow you to distinguish the amount of change that can be claimed by the project, or by a particular project action, from the total change that takes place (i.e. how much of a particular outcome or impact is the direct result of the project's actions). This is known as attribution.



A good evaluation design should allow you to address the following questions:

- What difference did the action/project make?
- How did it make this difference?
- What other factors were relevant?

Evaluations that consider these questions produce stronger and more useful findings. This is because the emphasis is on finding out what difference the project has made, rather than just looking at what has happened. On the other hand a flawed evaluation design can lead to results that can be misinterpreted or can cast doubt on the validity of the results.



## STEP 2

HOW WILL YOU  
KNOW WHICH  
OUTCOMES/  
IMPACTS CAN BE  
ATTRIBUTED TO  
THE PROJECT?

## EXAMPLE OF A BAD EVALUATION DESIGN

A project measured the height of all the trees in a patch of forest, then erected a fence around all the trees and measured them again after a period of three years. The project found that most of the trees were taller at the end than they were at the start. The project concluded that the fence had made the trees taller.

In this example the main flaw in the evaluation design was that the project gave no basis for comparing the fenced trees' growth with that of non-fenced trees in other patches of forest, nor did it consider other factors that may promote tree growth.

The approach you choose for addressing attribution will depend largely on the availability of the following:

**Theory of Change** – A strong Theory of Change gives you a framework with which to test whether particular outcomes/ impacts have been achieved. Evaluations produce stronger findings if they not only test the links between actions and impacts, but also test the steps between intermediate outcomes. See [PRISM Step 1](#) for more information.

**Counterfactual** – A counterfactual is an estimate of what would have happened without the project. What a counterfactual gives you is a measure of the results that would have been observed if the project had not taken place and all other conditions had remained the same. In practice these can be real world scenarios based on a control group/control site or constructed from participants' or experts' knowledge.

**Baseline** – A starting point, or a baseline, in order to assess change over time. If the project did not establish a baseline at the outset this can sometimes be constructed retrospectively (ex-post) from secondary data (e.g. local records) or carefully designed surveys that make use of participant recall or expert opinion.

The following resource contains useful guidance on how to construct a baseline retrospectively: <http://siteresources.worldbank.org/INTPOVERTY/Resources/335642-1276521901256/premnoteME4.pdf>.



## STEP 2

WHICH  
EVALUATION  
DESIGN  
SHOULD  
I USE?**Which evaluation design should I use?**

The most rigorous option is to view the evaluation as an experiment, for example by treating some patches of an invasive plant in one manner and other patches in another, then comparing the results. However this kind of approach is often challenging for smaller projects. Small/medium-sized conservation projects must therefore often consider other options which are feasible to implement but still deliver meaningful results.

The table below outlines some lower cost approaches for attributing outcomes & impacts to project actions. Each of the following methods is outlined in more detail in the dedicated [evaluation design factsheets](#).



Photo credit: Tsubasa Iwabuchi



TABLE: POTENTIAL EVALUATION DESIGNS FOR SMALL/MEDIUM-SIZED PROJECTS.

DESIGN TYPE	DESCRIPTION	EXAMPLES	ADVANTAGES	CHALLENGES
<a href="#">Participatory Impact Assessment</a>	Asking project participants questions about what changes have occurred and then discussing the reasons for the answers given	Asking project participants to score indicators relating to forest resource use and discussing the reasons for the answers given	Relatively cheap, does not require a baseline study or control group  Usually the best way of understanding how the project has affected participants	Participants' memories can change over time
<a href="#">Interviewing Key Informants</a>	Asking certain key individuals about what they believe caused any observed change and why/how these changes happened	Asking national park staff if they feel the project improved species status within the project target area	Relatively cheap, does not require a baseline study or control group  Useful for verifying results collected from other methods	Key informants need to be familiar with the project and the outcome/ impact being evaluated
<a href="#">Theory-based designs</a>	Checking that results support the project's Theory of Change (ToC)	Checking achievement of intermediate outcomes  Contribution analysis	Utilises pre-existing Theory of Change  Often less resource intensive and not subject to many of the challenges associated with traditional matching designs (see below)	Requires a thorough understanding of the mechanisms that drive change and the species/habitats impacted (e.g. well-developed ToC)  Potential to focus only on expected impacts and ignore unintended or negative impacts
<a href="#">Matching designs</a>	Comparing the results of the action to a real world control group/control site that is not subject to the action. Control group/site selected to be as similar as possible to the group/site targeted by the project	Comparing the trends in status of species within an area that received project support with a similar area that did not receive project support	If done properly, matching designs eliminate many of the potential sources of bias that could affect the validity of an evaluation	Often higher cost & require more resources than other designs  Often more resource intensive and subject to a number challenges relating to logistics and ethics
<a href="#">Before - after designs</a>	Measuring the situation before the action and then again after the action	Comparing the knowledge/ awareness of participants before and after a training workshop	Can be useful if the outcome/impact is short term or is part of a simple causal chain	Does not provide firm proof of attribution  Can only imply (rather than prove) that change occurred due to the project

## STEP 2

### WHICH EVALUATION DESIGN SHOULD I USE?

Selecting an appropriate design involves looking at the following three factors. Remember that **every project is different**, therefore it is up to you and your team to think about these factors and to choose the evaluation design that is most appropriate for your particular project.

#### Nature of the action being evaluated

- o Complexity of the action
- o What project outcomes/impacts will be measurable?
- o Are there gaps or inconsistencies in the project's Theory of Change that would make evaluation difficult?

#### Nature of the evaluation

- o Who are the evaluation users and what do they want to know?
- o What are the key questions being evaluated?

#### Available resources and constraints

- o Existing evidence available (e.g. baseline data)
- o Resources (e.g. time, money, expertise within the team/organisation)

The PRISM module chapters each contain further guidance on which evaluation designs are suitable for particular conservation outcomes & impacts. Refer to the [evaluation design factsheets](#) for more information on each design type.

Remember that none of the designs outlined in this section is inherently better than any of the others. In choosing a design you need to think carefully about your particular situation and choose a design or a combination of designs that is appropriate for your needs.

See also the [Decision tree for selecting an evaluation design](#) for more help in selecting a design appropriate for your project.

#### DESIGN APPROACHES FOR EACH OF PRISM'S MODULES

	AWARENESS & ATTITUDES	CAPACITY BUILDING	LIVELIHOODS & GOVERNANCE	POLICY	SPECIES & HABITAT MANAGEMENT
Participatory Impact Assessment	○	○	●	○	
Interviewing Key Informants		○	○	○	●
Theory-based designs		○	○	●	
Matching Designs	●				●
Before-After Designs	●	●	○		○

Table: Design approaches for each of PRISM's modules. Solid circles = most appropriate, empty circles = sometimes appropriate, no circle = less appropriate.

## STEP 2

AM I MEASURING  
ATTRIBUTION OR  
CONTRIBUTION?**Am I measuring attribution or contribution?**

In some cases it will be possible to attribute an outcome/impact directly to the project's actions. However, in many conservation project settings, and particularly for smaller projects, achievement of outcomes & impacts will often be dependent on other actions, projects, policies or programmes. This is often referred to as contribution.

Although the two terms are presented as separate categories it is perhaps most useful to think of this as a spectrum from “effects directly and solely attributable to the project” at one extreme, to “effects achieved indirectly and/or in combination with other influences” at the other.

Many projects struggle when trying to evaluate an action that contributed towards a wider outcome/impact. However the basic questions are still the same - what difference did the action/project make? How did it make this difference, and what other factors were relevant? Although you may not be able to quantify accurately the amount of change the project was responsible for, you can still learn an enormous amount by considering these questions. All the design options listed in this section can be used to evaluate an outcomes/impacts that can be directly and solely attributed to the project as well as outcomes/impacts to which the project made an indirect or partial contribution.

**EXAMPLE - PROJECT OUTCOME THAT CAN BE DIRECTLY ATTRIBUTED TO THE PROJECT:**

The amount of firewood used by participating households reduced after the introduction of fuel-efficient stoves. Households that were not involved in the project were still using the same amount of firewood as all households in the community had done before the project. No other actions were targeting firewood use, meaning that any change(s) in this after the introduction of stoves could likely be directly attributed to the project.

**EXAMPLE - CONTRIBUTING TO A WIDER OUTCOME/IMPACT:**

A new environmental law was passed, upholding a ban on development in a national park. The project team had carried out meetings and extensive lobbying & campaigning in support of the new law. The passing of the law had also been supported by several other NGOs, community groups and businesses. This meant that it was likely that the project contributed to a portion of the overall change, rather than being solely responsible for it.



## STEP 2

HOW WILL  
YOU COLLECT  
EVALUATION  
DATA?**How will you collect evaluation data?**

When you have identified an appropriate design for your evaluation you then need to identify methods that will allow you to collect the data required to answer your evaluation questions. This section outlines several key considerations that are relevant to all data collection methods before describing how PRISM's thematic modules can be used to select methods that are relevant to specific types of conservation actions.

**What kind of data are needed?**

When selecting methods you will need to decide whether you need data that are quantitative, qualitative or both. **Quantitative data** is numerical (numbers or answers to closed questions) while **qualitative data is non-numerical** (observations, answers to open questions, written, audio, visual or video evidence). Quantitative data are more straightforward to measure using standard statistical analysis methods. However qualitative data can provide extremely useful insights and information that cannot be captured by quantitative data, for example the underlying reasons, opinions and motivations behind a change in participant behaviour. Increasingly, many evaluations collect both quantitative and qualitative data: this is called a **mixed methods approach**.

Some methods will only deliver one kind of data while others can be adapted to provide both. Where possible it is recommended to try to gather data (both quantitative and qualitative) using a range of different methods and then to “triangulate” the findings. This enables conclusions to be drawn from smaller sample sizes. See [Step 3. What can you learn from the results?](#) for more information on triangulation and how to combine and analyse data from multiple sources.



## STEP 2

HOW WILL  
YOU COLLECT  
EVALUATION  
DATA?**DIFFERENCES BETWEEN QUANTITATIVE, QUALITATIVE AND MIXED DATA  
COLLECTION (ADAPTED FROM WOODHOUSE ET AL. 2016)**

TYPE OF DATA	MOST USEFUL FOR	SPECIFIC TOOLS AND METHODS
<b>Quantitative (numeric)</b>	Measuring magnitude of changes Collecting objective, measurable data Statistical analysis Reporting to external interest groups (donors, governments)	Structured questionnaires (closed questions) – interviews or self-completed Field survey data (transects, point counts etc.) Direct measurements Some participatory methods which involve ranking and scoring
<b>Qualitative (narrative based)</b>	Contextual knowledge Processes of change Providing basis for quantitative questions Uncertain outcomes, outcomes that are difficult to measure (e.g. social relations, political change), Adaptive management and understanding mechanisms	Focus group discussions Field observation notes Key informant interviews Participant observation
<b>Mixed method (quantitative &amp; qualitative)</b>	Combining strengths of both approaches for different insights and audiences Triangulation of understandings based on information from different approaches Reporting to external interest groups (donors, governments)	Combining the collection of different data types within single methods (e.g. qualitative and quantitative questions within a household survey), or using a range of methods within the evaluation (e.g. focus groups and key informant interviews prior to a household survey). Some specific tools described in this toolkit use mixed methods e.g. PIA methods, Basic Necessities Survey

Woodhouse, E et al. (2016) Evaluating the impacts of conservation interventions on human wellbeing. Guidance for practitioners. IIED, London



## STEP 2

CAN ANY EXISTING  
DATA BE USED?**Can any existing data be used?**

Start planning your data collection by reviewing the extent to which existing data can be used. For example data from official statistics, programme monitoring data, project records (project proposal, a theory of change, minutes from relevant meetings, etc.), formal policy documents, programme implementation plans and progress reports may all be helpful. Data that can be used as a baseline to track change over time are particularly useful. While making use of existing data can save a lot of time and effort, it is essential that data are of sufficient quality to still provide useful information in relation to your evaluation questions. If data are not of sufficient quality it may compromise the validity of the evaluation results.

**Do I need to control for bias?**

Bias refers to errors during data collection or interpretation that can affect the reliability of the evaluation results. For example it may be difficult to compare reliably the results of bird surveys conducted by two observers with very different levels of ability. With most methods some level of bias is unavoidable. By identifying the sources of this it is possible to work out whether it will have a significant effect on the reliability of your conclusions and whether or not it can be minimised, reduced or measured and allowed for during analysis. If bias cannot be controlled in these ways then a different method should be used. The table<sup>3</sup> on the following page covers some (but by no means all!) potential sources of bias and strategies for addressing them.



<sup>3</sup>Cambridge handbook of ecological survey methods <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>

**TABLE: EXAMPLES OF POTENTIAL SOURCES OF BIAS AND STRATEGIES FOR MINIMISING THEM**

TARGET	POTENTIAL SOURCES OF BIAS	STRATEGIES FOR MINIMISING/REDUCING BIAS
<b>Species &amp; habitats</b>	<p>Some species/habitats may be easier to survey than others</p> <p>Observers have differing levels of expertise</p> <p>Variation in observer effort</p> <p>Local conditions may affect data collection (e.g. weather)</p>	<p>Record as much detail as possible and use the same methods, approach, analysis etc. across years, surveys &amp; sites</p> <p>Agree &amp; record definitions (e.g. sample size, type population unit) beforehand</p> <p>Calibrate observers against each other before &amp; during data collection</p>
<b>Stakeholders</b>	<p>Stakeholders with a particular viewpoint (e.g. favourable/ unfavourable to the project) are more likely to be involved in the evaluation</p> <p>Some stakeholders may be easier to reach than others</p> <p>Loaded or leading questions make certain responses more likely</p> <p>Observers/facilitators have differing levels of experience</p> <p>Some groups may be less likely to respond (e.g. based on age, gender, social status, etc.)</p> <p>Participants' memories can change over time</p> <p>Participants may be unwilling to share certain pieces of information</p>	<p>Identify potential sources of bias and develop a sampling strategy that works to minimise these (see section on developing an appropriate sampling strategy)</p> <p>Use the same observers/facilitators if possible, or calibrate observers against each other beforehand</p> <p>Test the survey methods beforehand with a sample of the target audience</p> <p>Use a timeline with participants to help them recall earlier conditions</p>

**STEP 2****DO I NEED TO  
CONTROL FOR  
BIAS?**

## STEP 2

ARE THE  
METHODS  
ETHICALLY  
SOUND?**Are the methods ethically sound?**

Before implementing any data collection method it is important that you go through an ethical review procedure to ensure that you have thought about potential issues of this kind that the chosen methods may raise in relation to the species, habitat or stakeholder group being targeted. Failing to consider ethics can have severe consequences for the validity of evaluation results and runs the risk of having a negative effect on the project target, while also potentially posing serious reputation risks for the organisation(s) responsible for the project.

Refer to the factsheet: [Developing ethical protocols for an evaluation](#) for more information.

**Gender**

Many conservation actions will have outcomes and impacts that affect male and female stakeholders differently. Building gender into your evaluation can therefore provide extremely useful information and insights that would not be captured otherwise. Refer to the factsheet: [Developing gender protocols for an evaluation](#) for more information.



### What sampling strategy should I use?

Adapted from Mwebaze, T (2014) - "How To": Choose Sampling Techniques for Evaluations: <https://ecduganda.files.wordpress.com/2014/08/how-to-choose-sampling-techniques-for-evaluations.pdf>

## STEP 2

## WHAT SAMPLING STRATEGY SHOULD I USE?

Sampling is the process of selecting units (e.g. people, sites, species) from a population of interest, studying these in greater detail, and then drawing conclusions about the larger population. The evaluator collects data from a subset – a sample – and uses these to make inferences about the entire story. For this to be reliable however the key thing is that the characteristics of the sample must reflect the characteristics of the population targeted by the action.

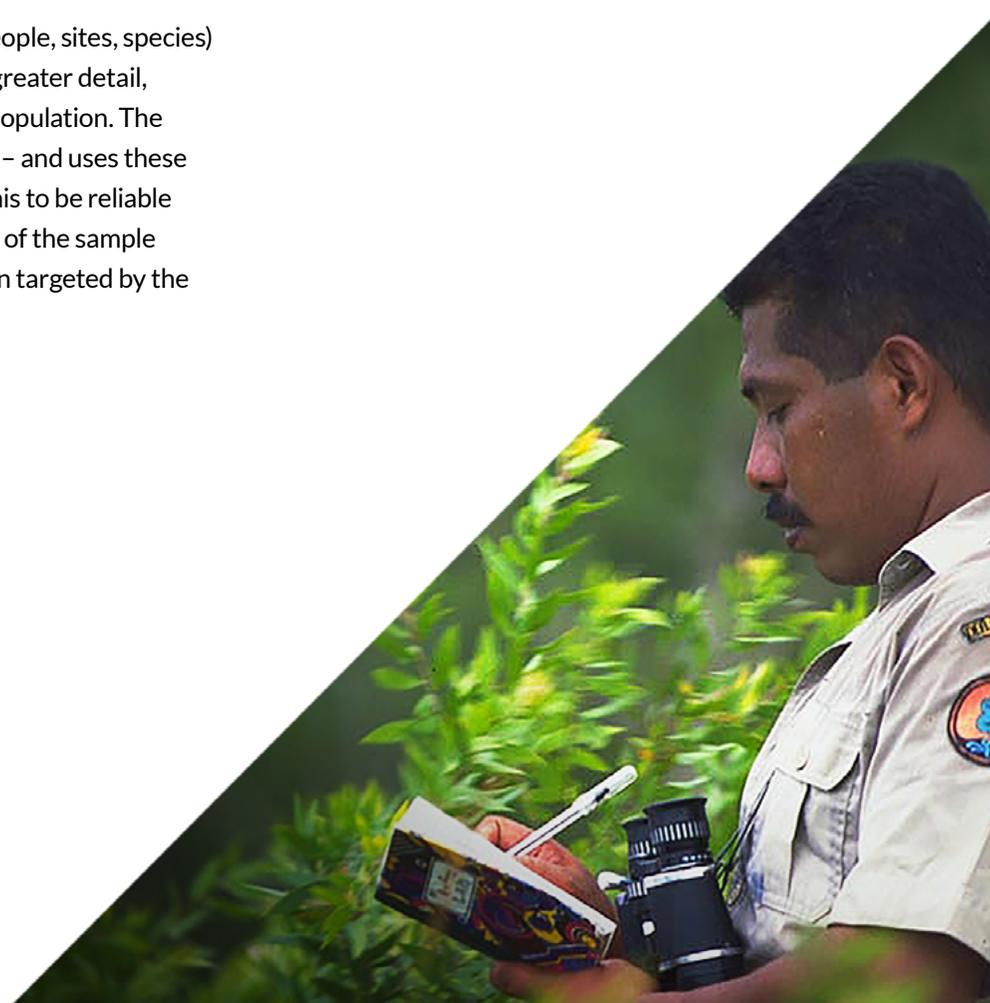


Photo credit: M. K. Poulsen



**TABLE: SAMPLING STRATEGIES FOR EVALUATION**

SAMPLING METHOD	DESCRIPTION	BEST WHEN
<b>Simple random sampling</b>	All units in the population have an equal opportunity of being selected, using a method that selects units completely at random.	The whole population is available.
<b>Stratified sampling (random within target groups)</b>	Divide the population into meaningful homogenous or similar groups based on a given characteristic (e.g. age, gender, race, socioeconomic status), and then select a random sample from within each group.	There are specific sub-groups to investigate (e.g. demographic groupings/ target sites).
<b>Systematic sampling (every nth person)</b>	Samples are drawn by starting at a randomly selected element in the sampling frame and then taking every nth element. This is easier to perform and hence is less subject to researcher errors than simple random sampling.	A stream of subjects is available (e.g. people in the street).
<b>Cluster sampling</b>	The sample is selected in stages, first selecting groups of elements, or clusters (e.g. city blocks, census tracts, schools), and then selecting individual elements from within each cluster (e.g. randomly or by systematic sampling).	Population groups are separated and access to all of them is difficult, e.g. in remote communities.
<b>Quota sampling</b>	The population is divided into groups according to important population characteristics. Then people familiar with the population choose individuals they believe can adequately represent that population's characteristics (e.g. their viewpoints).	Time is limited, a sampling frame is not available and detailed accuracy is not important.
<b>Purposive sampling</b>	Sampling with a purpose in mind. Usually one or more specific target groups would be pre-defined. Purposive sampling can be very useful for situations where you need to reach a targeted sample quickly and where proportionality in sampling is not the primary concern.	You are studying particular groups.
<b>Snowball sampling (asking for recommendations)</b>	A type of purposive sampling where existing participants recruit further subjects from among their acquaintances. A few potential respondents are contacted and asked whether they know of anyone else with the same required characteristics for the evaluation.	You are targeting subjects with something in common (e.g. hunters in a community).

**STEP 2****WHAT SAMPLING STRATEGY SHOULD I USE?**

## WHAT DATA COLLECTION METHODS SHOULD I USE?

### STEP 2

#### What data collection methods should I use?

This section provides details on how to select appropriate data collection methods from PRISM's thematic modules.

With most outcomes/impacts there will be range of different methods that could potentially be used to collect data. The PRISM module chapters are designed to guide you towards methods that are appropriate and feasible for the outcome/impact you are trying to measure.

Start by taking each of the outcomes/impacts you identified in steps 1 & 2 and see which of PRISM's modules they relate to (see table on following page). You can use the framework and summary information within each module to guide you towards methods for measuring change in relation to the outcome/impact of interest.

The first four modules focus on project stakeholders and specifically on different dimensions of **behaviour change** by stakeholders.

The fifth module, **Species & Habitat Management**, relates to actions that are directly focused on restoring and/or reducing threats to species and habitat(s), while also covering how to evaluate the impact of conservation research and how to measure changes in species & habitat status.

Projects looking at ecosystem services should refer to the factsheet: [Evaluating ecosystem services](#).

These modules have been selected because they cover a range of outcomes and impacts that are commonly aimed for by small/medium-sized conservation projects. Please remember that,

while the module chapters are designed to cover a wide range of outcomes and impacts, they do not cover all the possible outcomes and impacts that a small/medium-sized project may have. If the particular outcome or impact you are trying to measure does not feature in the module chapters it is still worth looking through the methods, as many of them can be adapted to suit particular scenarios and contexts.

Conservation actions will typically have multiple outcomes and impacts, some of which may relate to different modules. For example, training park rangers to conduct patrols may have outcomes that relate to capacity development, attitudes & awareness and/or species & habitat management. When selecting methods it is important to focus on the primary outcomes and impacts that any action is expected to achieve, and to look for methods for each of them in the relevant module chapter.



## STEP 2

### WHAT DATA COLLECTION METHODS SHOULD I USE?

**TABLE: THEMATIC MODULES SHOWING OUTCOMES AND IMPACTS COVERED**

POSSIBLE MODULE	DESCRIPTION	SPECIFIC TOOLS AND METHODS
<p><a href="#">Attitudes and awareness</a></p> 	Measuring changes in levels of stakeholder awareness and attitudes and whether these lead to changes in behaviour that benefit conservation.	<ul style="list-style-type: none"> <li>• Messages received by target audience</li> <li>• Audience has desired attitude</li> <li>• Audience has desired awareness/ knowledge</li> <li>• Audience adopts desired behaviour</li> </ul>
<p><a href="#">Capacity development</a></p> 	Measuring changes in the ability of people, organisations or society to perform better, solve problems or manage their affairs successfully.	<ul style="list-style-type: none"> <li>• Individuals have improved skills</li> <li>• Individuals have greater confidence</li> <li>• Individuals apply new skills</li> <li>• Organisational performance improves</li> <li>• Networks and alliances have been formed/strengthened</li> <li>• Conservation actions are implemented more effectively</li> </ul>
<p><a href="#">Livelihoods and governance</a></p> 	Measuring changes in relation to people's livelihoods, well-being status and the governance arrangements that affect the lives of project stakeholders.	<ul style="list-style-type: none"> <li>• Uptake of new or improved practices/ livelihoods activities</li> <li>• Progress towards secure tenure or resource rights for communities</li> <li>• Community institutions have increased capacity</li> <li>• Governance arrangements give increased recognition/ respect</li> <li>• Well-being goals met</li> <li>• Damaging occupation/ livelihood abandoned or reduced</li> </ul>
<p><a href="#">Policy</a></p> 	Measuring changes to rules, regulations and agreements that govern conservation targets.	<ul style="list-style-type: none"> <li>• Improved policy influence in government or multilateral institutions</li> <li>• Improved policy influence in private sector</li> <li>• Environmental movement strengthened</li> <li>• New/improved policy and/or associated practice implemented.</li> </ul>
<p><a href="#">Species and habitat management</a></p> 	Measuring changes in relation to the direct management of species or habitats.	<ul style="list-style-type: none"> <li>• Knowledge improved</li> <li>• Action plan(s) developed &amp; disseminated</li> <li>• Threats reduced</li> <li>• Recovery of species/habitats promoted</li> <li>• Species status improved</li> <li>• Habitat status improved</li> </ul>



## MODULE CHAPTER STRUCTURE

### STEP 2

#### Module chapter structure

Each module chapter contains an **introduction**, a diagrammatic **outcome/impact framework**, a **table of indicators & methods** and **written summaries** for each stage in the framework.

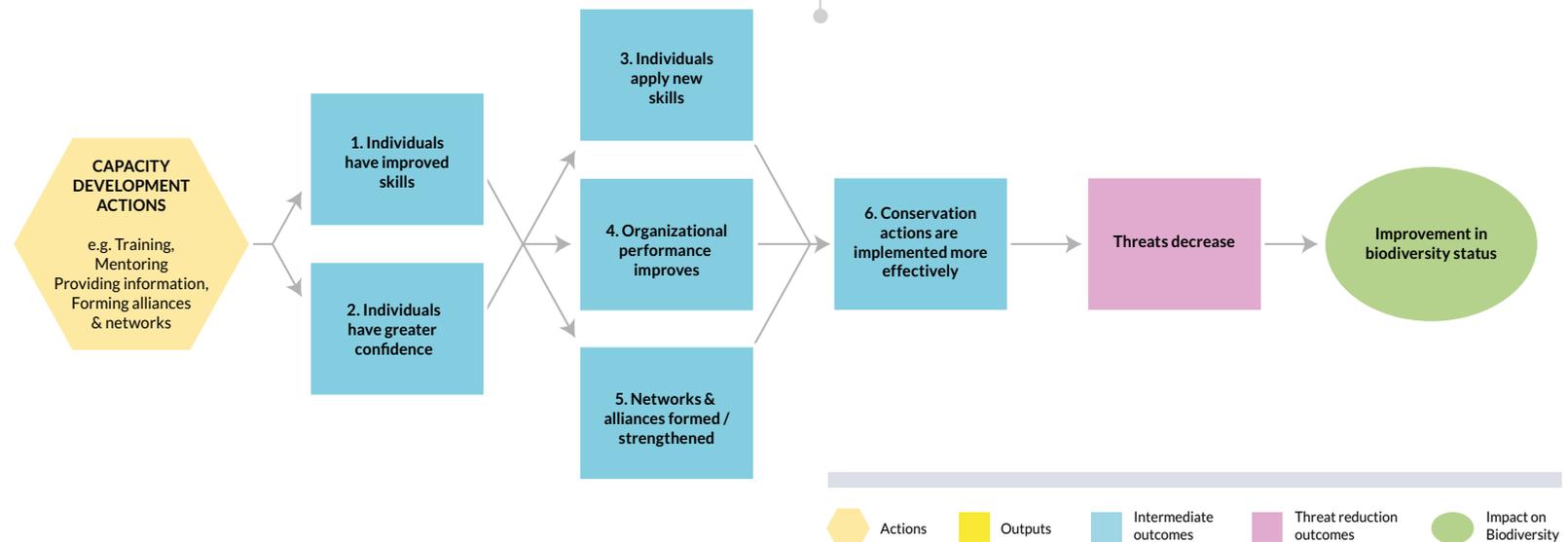
Each outcome/impact framework diagram illustrates how actions lead to particular outcomes and impacts within each module (see Figure 8). These frameworks are designed to:

1. demonstrate how your project's actions and outcomes might relate to overall conservation impact;
2. identify which stage of outcome or impact you want to measure;
3. help to identify methods that are appropriate for your particular actions.

Most projects will not measure change across all possible outcomes and impacts in these frameworks; once you have identified the stage in the framework that is most relevant to the outcome/impact you are trying to evaluate, you can use the information in the table and written summaries to select appropriate methods. The frameworks help to explain how the outcome/impact being measured relates to expected overall, long-term conservation impact.

Methods are laid out in a factsheet format. Factsheets are located in the appendices and via hyperlinks within the interactive toolkit.

FIGURE 8: EXAMPLE FRAMEWORK (TAKEN FROM PRISM CAPACITY DEVELOPMENT MODULE)



### Completing your evaluation plan

Once you have identified your evaluation questions and methods it is important to plan and map out how data will be collected, specifically when it will be collected, who will collect it and an estimate of how much it will cost.

See Factsheet: [Completing an evaluation plan](#) for a simple template that you can use, modify or adapt to your particular project to map out and plan your evaluation data collection.

## STEP 2

# COMPLETING YOUR EVALUATION PLAN



### WHAT DO YOU NEED TO KNOW? CHECKLIST

- Have you reviewed potential evaluation designs?
- Have you selected an appropriate design for your project?
- Have you decided what kind of data you will need (quantitative, qualitative or both)?
- Have you considered potential sources of bias and how these can be minimised, reduced or controlled for?
- Have you developed a sampling strategy?
- Have you developed ethical and gender protocols?
- Have you selected appropriate methods from PRISM's modules?

### WHAT DATA DO YOU NEED TO COLLECT? – TIPS FOR REDUCING TIME/COSTS

POTENTIAL WAY OF REDUCING COSTS	CHALLENGES	SOLUTIONS
<b>Use smaller sample sizes</b>	- May result in reduced accuracy	- Check at regular intervals to ensure sufficient data are being collected
<b>Make more use of existing data</b>	- Existing data may be insufficient to answer evaluation questions	- Only use if quality, relevance and accessibility of data are sufficient
<b>Reconstruct baseline data (e.g. by using participant recall)</b>	- People's memories can change over time	- Use a systematic approach for collecting data e.g. PIA, interviewing key informants, focus groups
<b>Simplify evaluation design (e.g. one that does not require a baseline/counterfactual)</b>	- Often a trade-off between design simplicity and quality/validity of results	- Review design options and ensure that the chosen option will still produce useful results
<b>Use less resource intensive data collection methods (e.g. focus groups/direct observation instead of questionnaires)</b>	- Often a trade-off between low-intensity methods and quality/validity of results	- Once methods have been chosen, return to the evaluation questions and ask again: will the chosen methods collect the data needed to answer these?

### Step 3 What can you learn from the results?

This is the stage of the evaluation where you analyse and interpret your data and then interpret the data to find out what you can learn from the results, and what the results mean in relation to the overall aim of the project.

## STEP 3

## WHAT CAN YOU LEARN FROM THE RESULTS?

### STEP 3

#### QUESTIONS ADDRESSED IN THIS SECTION:

- How will you analyse your data?
  - o How should I enter, organise and clean data?
  - o What is the unit of analysis?
  - o What data analysis methods should I use?
  - o How should I compare data collected using different methods?
  - o How should I present evaluation data?
- What do the results show?
  - o How should I interpret evaluation results?



## STEP 3

WHAT CAN YOU  
LEARN FROM THE  
RESULTS?

## How will you analyse your data?

## How should I enter, organise and clean data?

Adapted from [Evaluation toolkit – Pell Institute: http://toolkit.pellinstitute.org/evaluation-guide/analyze/enter-organize-clean-data/](http://toolkit.pellinstitute.org/evaluation-guide/analyze/enter-organize-clean-data/).

Once you have collected your data it will typically be in “raw” form, for example:

- completed hardcopy questionnaires;
- field survey data;
- recordings of interviews or focus groups;
- video recordings of observations.

Typically, raw data are not very illuminating in this form. So before you begin analysis, you will need to enter, organise and clean your data.

Refer to the factsheet [Entering, organising and cleaning data](#) for more information on how to do this.

## What is the unit of analysis?

The first thing that will determine how you analyse your data will be your unit of analysis. A unit of analysis is the who, or what, that is being analysed. For conservation projects the unit of analysis could be sites, habitats, communities or individuals. Note that this is different from your unit of data collection, for example you might collect data from individuals, but for analysis these individuals are grouped according to specific criteria (e.g. gender, age, job).

**Examples:** **Action:** Restore mangrove habitat at three coastal sites.

**Evaluation question:** Has the project successfully restored habitat at the target sites?

**Unit of analysis:** Site.

**Action:** Develop capacity of park staff to conduct anti-poaching patrols.

**Evaluation question:** Has the project raised the capacity of park staff to carry out more effective patrols?

**Unit of analysis:** Individual park staff.



## STEP 3

### WHAT DATA ANALYSIS METHODS SHOULD I USE?

#### What data analysis methods should I use?

##### Options for analysing quantitative data

Analysing quantitative data involves examining numeric data (data collected in the form of numbers) to look for patterns and trends that can help you to answer your evaluation questions. Refer to the Factsheet: [Analysing quantitative data](#) for more information and examples.



## WHAT DATA ANALYSIS METHODS SHOULD I USE?

### STEP 3

#### Options for analysing qualitative data

Analysing qualitative data involves turning written or other kinds of narrative data (such as interviews and field observation notes) into results.

Refer to the factsheet [Analysing qualitative data](#) for guidance on how to code and analyse qualitative data.

Qualitative evaluation data such as notes from focus group discussions are often quite detailed and variable in structure. Qualitative data analysis does not happen in a linear way; it is often not a quick process but it can produce instructive and useful results. The process of analysis involves critically reading and interpreting your data, perhaps through a series of iterations, to reach a shared understanding.

#### Mixed methods analyses - combining and comparing quantitative & qualitative data

Adapted from Introduction to mixed method evaluations (Bamberger 2012): [https://www.interaction.org/sites/default/files/Mixed%20Methods%20in%20Impact%20Evaluation%20\(English\).pdf](https://www.interaction.org/sites/default/files/Mixed%20Methods%20in%20Impact%20Evaluation%20(English).pdf)

Often in an evaluation you will want to use a mixture of data from both quantitative and qualitative sources. Using such a combination of data types can improve an evaluation by ensuring that the limitations of one type are balanced by the strengths of another. For example it is common to use quantitative data to test whether a change has occurred, then to use qualitative data to try to explain how the change happened. This will improve

understanding by integrating different ways of knowing. Most evaluations will collect both quantitative data (numbers) and qualitative data (text, images), however it is important to plan in advance how these will be combined.

#### FIVE MAIN REASONS FOR COMBINING DATA SOURCES:

<b>Enriching</b>	Using qualitative data sources to identify issues or obtain information about variables that cannot be obtained by quantitative approaches
<b>Exploring</b>	Generating hypotheses from qualitative data to be tested through the quantitative data
<b>Explaining</b>	Where one set of options sheds light on unexpected findings derived from another set of options
<b>Exemplifying</b>	Providing a case study to illustrate by example what is happening
<b>Triangulating</b>	Confirming or rejecting results from one data source using results from another



## HOW SHOULD I COMPARE DATA COLLECTED USING DIFFERENT METHODS?

### STEP 3

**How should I compare data collected using different methods?**  
Adapted from Equal Access Participatory Monitoring & Evaluation toolkit: [http://betterevaluation.org/toolkits/equal\\_access\\_participatory\\_monitoring](http://betterevaluation.org/toolkits/equal_access_participatory_monitoring)

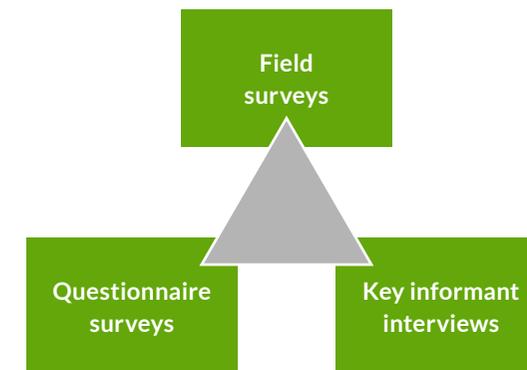
In many evaluations data will be collected from a range of different sources. Triangulation is the process that involves combining multiple methods and perspectives with various types of data sources in order to cross-check the results of your research. This forms a crucial step in the evaluation process as it helps to reduce the risk of bias associated with using a single data source.

Triangulation could involve any of the following:

- Drawing on qualitative data to cross-check the findings from your analysis of quantitative data and to indicate how widespread certain impacts and outcomes are.
- Using different participatory techniques to measure the same indicator and then comparing the results. If the results are similar they are more likely to be accurate.
- Comparing the themes in your field observations with the themes in interviews and noting any changes over time. Ask participants to explain these changes.
- Checking the consistency of what people say about the same topic over time.

- Comparing the perspectives of people who have different points of view (for example community members, staff of local government agencies, and conservation professionals familiar with the species/site).
- Checking interview data against programme documentation and other written evidence that can verify what participants reported.

**FIGURE 10: TRIANGULATION USING MULTIPLE DATA SOURCES**



## STEP 3

### HOW SHOULD I PRESENT EVALUATION DATA?

#### How should I present evaluation data?

In order for data to be understood it needs to be displayed in a way that allows you to identify trends and patterns within the data.

The way you visualise your data will depend on the kind of data you have and what you are trying to show. See the Table right for some options. A key point to make is that you will not need to visualise all of your project's results.

Refer to [www.betterevaluation.org/plan/describe/visualise\\_data](http://www.betterevaluation.org/plan/describe/visualise_data) and <http://labs.juiceanalytics.com/chartchooser/index.html> for more information on each of the options listed in table.

**TABLE: OPTIONS FOR VISUALISING DATA**

WHAT ARE YOU TRYING TO SHOW?	USE THIS TOOLKIT TO
Relationship among data points	Scatterplot Matrix chart Network diagram
Compare sets of values	Bar chart Block histogram Bubble chart Dot plot
Changes over time	Line graph Stacked graph
See parts of a whole	Pie chart Icon array Treemap
Analyse a text	Word cloud Phrase net Word tree
See the world	Species/habitat maps Geotagging GIS mapping



## STEP 3

WHAT DO THE  
RESULTS SHOW?**What do the results show?****How should I interpret evaluation results?**

This involves looking at the results to determine what lessons can be learnt and what the results mean in relation to the overall success of the project.

Interpreting your results is part science, part art. It requires the ability to think critically to make judgements in relation to your evaluation questions, based on the information you have gathered, your understanding of the risks, assumptions and external factors that may influence the project's outcomes and impacts and any potential sources of bias (see the [controlling bias](#) section of Step 2)

There is a temptation to be overly scientific and to focus too much on quantitative results (e.g. numbers or graphs). However, the most useful interpretations are typically those that carefully consider the information available, and then use this information to provide an interpretation of what happened to explain the project's results.

For example, the fact that long term impacts are not measurable within the project's timeframe means that you will often need to use information collected on intermediate outcomes to explain the likelihood of future impacts. Equally you may find it impossible to isolate and collect data on all the different factors, risks and assumptions that may influence the project's outcomes and impacts, so you may often need to examine qualitative evidence (interpretations) both from participants and from your own observations and understanding of the situation, to explain and contextualise the project's results.



Photo credit: Jeremy Madeiros



## STEP 3

WHAT DO THE  
RESULTS SHOW?

## EXAMPLE

**Project:** A team in the Quang Tri province of Vietnam aimed to protect and restore forest in the buffer zone of Dakrong Nature Reserve. The project encouraged households to sign 10 year forest protection agreements that, in exchange for preserving the forest, provided households with the right to extract rattan and other non-timber forest products, and provided additional funding to enrich a one hectare patch with rattan seedlings for future harvesting.

**Evaluation questions:**

- How much income is expected by rattan cultivation?
- Has the project had an impact on stakeholder livelihoods/wellbeing?
- Has the project given local people more of an incentive to manage forest resources more sustainably?
- To what extent has the project brought about a change in the way local people manage forest resources?

**Evaluation methodology:** The team used a mixed methods approach, combining an economic evaluation (to estimate future income from rattan), Participatory Impact Assessment (to evaluate householders' perceptions of the project's impact) and Key Informant Interviews with key community members and employees of the local forest protection department.

**Results:** The economic evaluation suggested that, once ready for harvesting, rattan has the potential to provide participating

households with a valuable secondary source of income by providing, at current market rates, the equivalent of 10 days' paid work per year. Despite this, participatory evaluation showed that many households regarded the economic benefits of rattan as relatively limited, with the main limiting factors being the long time it takes rattan to grow large enough to harvest (5-10 years) and the availability of local rattan markets.

Combining rattan enrichment with forest protection contracts proved popular among participating households, with results suggesting that this approach helps to give participating households an increased feeling of ownership over the land covered by the agreements and an increased incentive to manage the forest in a sustainable way. Furthermore the contracts led to a change in behaviour where participating households now actively monitor the areas under contract. Contracts were found to be very popular with interviewed forest protection department staff, who see them as having made their work a lot easier by compelling households to monitor the areas under contract.

**Interpretation:** The team interpreted the results as suggesting that pairing rattan enrichment with long-term forest protection contracts can help to deliver positive results where contracts provide an immediate benefit to households by giving them an incentive to conserve the land under contract and to adopt new behaviours that prevent further degradation. This evaluation suggests that this approach may offer significant advantages over a project that only provides support for rattan enrichment where benefits to households will not be felt until rattan has grown large enough to harvest.



## STEP 3

WHAT DO THE  
RESULTS SHOW?**Capturing learning**

As well as the project's results it is also important to capture learning, by documenting it properly. During the project, everyone may think that their learning is well understood, successfully shared and built into adaptive responses, and there may be little incentive for them to be conscientious about recording it, as long as simply "getting on with the project" is the priority. But such a record will be an important part of the legacy of the project, and some discipline about this should be encouraged.

Ideally evaluations should be a **two-way process**, providing an extremely useful opportunity for information exchange on the context, situation or community the project is working in.

**WHAT CAN YOU LEARN FROM THE RESULTS?  
CHECKLIST**

- Have you analysed your data?
- Have you interpreted your results to answer your evaluation questions?



**STEP 4****WHAT SHOULD BE  
DONE NEXT?****Step 4** What should be done next?

This is where you use the judgements you have made while interpreting your results to make decisions about what should be done next. If the project is on-going then you will usually want to use the results to make improvements to the project. Results and recommendations could also be shared with relevant stakeholders to inform their decision making. Finally, you should also consider whether the evaluation results could be shared more widely to inform the work of other conservationists.

**STEP 4****QUESTIONS ADDRESSED IN THIS SECTION:**

- How will you use the evaluation results?
  - o Developing recommendations
  - o Can results be used to improve the project?
  - o How will results be communicated to external audiences?
  - o Can results be shared with the wider conservation community?



**STEP 4****HOW WILL  
YOU USE THE  
EVALUATION  
RESULTS?****How will you use the evaluation results?**

Once interpreted, the results will then need to be written up so that they can be communicated and, ultimately, applied. How you do this will depend on which of the following you are trying to do: 1) use results to learn internally within the project; 2) communicate results to external audiences, or 3) share results to inform the wider conservation community. When beginning the process of applying your results, a good place to start is by reminding yourself who the evaluation stakeholders are and how the results will be useful to them (see [Step 1](#)).

**Developing recommendations**

Evaluations often make recommendations about how a project or project action can be improved, how the risk of project failure can be reduced and whether a project should continue.

When developing recommendations, it is good practise to try and involve stakeholders in developing and/or reviewing them as this will help contribute to the use of the evaluation findings. If possible, aim to follow up recommendations with evaluation users, e.g. through annual reviews.



## CAN RESULTS BE USED TO IMPROVE THE PROJECT?

### STEP 4

#### Can results be used to improve the project?

Adapted from – [CDC Brief 7: Applying policy evaluation results](http://www.cdc.gov/injury/pdfs/policy/Brief%207-a.pdf)  
-<http://www.cdc.gov/injury/pdfs/policy/Brief%207-a.pdf>

One of the most significant benefits of an evaluation is that it enables you to adapt and improve the action or project being evaluated. This should be seen within the context of the project cycle (see [Section 1: when to use this toolkit](#)) where your evaluation results enable you to complete the cycle by informing decision making. If possible, you should aim to re-visit the project's Theory of Change (or equivalent) and use your evaluation results to make changes that take into account the lessons learnt from the evaluation.

Unlike communicating evaluation results for external audiences (which is usually done towards the end of the project), internal learning from results can occur at any stage of the project cycle.

#### Evaluation results can be used for internal learning in the following ways (among others):

- providing continuous feedback on project implementation;
- identifying gaps in project implementation;
- eliminating or modifying project actions that are not producing the desired results;
- adding further actions;
- identifying training and technical assistance needs;
- providing support for long-term planning;
- building support for future project actions;
- building support for acquiring resources;
- increasing communication between project stakeholders.

#### Methods for applying your results internally can include:

- reflection meetings;
- developing an improvement action plan;
- annual reviews.



## STEP 4

### HOW WILL RESULTS BE COMMUNICATED TO EXTERNAL AUDIENCES?

#### How will results be communicated to external audiences?

Much of the guidance in this section has been informed by the Better Evaluation page: report and support use: <http://betterevaluation.org/plan/reportandsupportuse>

#### Identify requirements

When planning how you will communicate your results it is useful to re-visit the [section in step 1](#) where you identified the main uses and users of the evaluation results. You can then design reporting to address each use and each user.

**Communicating with donors** – A report presented to a funder/donor will often be one of the main (and in some cases the only) communication outputs of a project. Reporting should not be seen as a box-ticking exercise to fulfil funding requirements. It should instead be seen as an opportunity to communicate your findings to show both what has been achieved **and** what has been learnt. Many projects are reluctant to report results of actions that produce unintended/negative results. The overwhelming majority of funders however understand that conservation project actions can be subject to a number of external influences, and they are happy for projects to report unintended negative results, provided that learning can be demonstrated. To get the most out of the reporting process you should aim to maintain communication with your donors, make use of any reporting guidelines/templates, and develop reporting media that will be useful both to you and to the donor.

**Reporting timescales** - A common challenge is that reporting timeframes often require teams to report before the project's long-term outcomes and impacts become measurable. In this situation it will be necessary to report on relevant intermediate outcomes and include in your report an explanation of how these act as predictors of outcomes and impacts further down the project's Theory of Change.

#### Design reporting media

Options for reporting media include:

**Written materials (e.g. reports, news bulletins, website communications)** - The most important information should come first, to allow readers to access easily the things they are most interested in. This will often be the findings and recommendations, which should thus appear early in the report. Less crucial details, such as the evaluation background and methodology, belong in an appendix or can even be posted elsewhere (e.g. online) for reference.

See the factsheet [Evaluation report template](#) for a template that can be used for an evaluation report.

**Presentations (e.g. posters, Powerpoint, video)** – Presentation audiences are likely to be most interested in only a portion of the full evaluation report, such as the key findings or a lesson learnt about evaluation methods. Thus, it is wise to focus the presentation on that portion, while making the full report available to anyone interested.



## STEP 4

### HOW WILL RESULTS BE COMMUNICATED TO EXTERNAL AUDIENCES?

#### **Creative (e.g. infographics, cartoons, photographic reporting)**

- Presenting your report in a creative manner may be the most effective means to get your information across if the context allows for it. You may consider working with an artist or a graphic recorder to produce creative displays.

**Ensure that results are simply presented and are accessible to a wide range of different users**

#### **Techniques for increasing accessibility:**

- Use plain language
- Remove visual elements that don't contribute to the main message
- Use visual techniques to draw attention to certain bits of information
- Use descriptive chart titles to highlight key pieces of information
- Use the one – three – twenty five principle where the report takes the following format: a 1 page outline, a 3 page executive summary and 25 pages to present the findings and methodology.



## STEP 4

DEVELOP A  
NARRATIVE**Develop a narrative**

However you synthesise your results your evaluation will have a much wider reach if you are able to build a narrative that can be easily understood by readers who may not be familiar with the project. Remember that a good narrative does not just present results, but uses these results to tell a story.

A simple narrative can be built using your evaluation questions:

**EXAMPLE 1**

**What change(s) occurred?** - Over the course of the project, the number of poaching snares found per patrol went from an average of 3 to 0.5

**To what extent were any change(s) due to the project?** - An evaluation design, which measured the difference between patrols at the project site and a similar area not targeted by the project suggested that the majority of the observed change in the number of snares being found was due to the project's training and outreach work

**What do these results mean in relation to the project's overall aim?** - These results are likely to have positive implications for the project's goal of increasing hunted species populations by reducing poaching

**What should be done next?** - In light of these results we recommend that the project's actions be scaled up to incorporate similar, neighbouring areas

**EXAMPLE 2**

**What change(s) occurred?** - Over the course of the project, the perceived impact of Rattan on local livelihoods did not change significantly

**To what extent were any change(s) due to the project?** - A Participatory Impact Assessment found that local people felt that Rattan was growing too slowly to deliver a regular improvement to livelihoods

**What do these results mean in relation to the project's overall aim?** - These results mean that using Rattan as a sole incentive is unlikely to deliver the project's overall aim of preventing further deforestation

**What should be done next?** - In light of these results we recommend that projects that intend to use Rattan as an incentive for forest protection should either find a way to make Rattan grow faster, e.g. through training on cultivation techniques) or provide additional incentives that delivers a greater perceived benefit to stakeholders



## STEP 4

CAN RESULTS BE  
SHARED WITH  
THE WIDER  
CONSERVATION  
COMMUNITY?

## Can results be shared with the wider conservation community?

## Why is it important to share results?

In addition to your main evaluation users, you should give thought to whether your evaluation results can be shared in support of evidence-based conservation more generally. This is particularly relevant for projects that are carrying out:

- innovative/novel actions;
- actions that have not been applied in a similar setting before;
- evaluation results which produced particularly interesting/unexpected findings;

Sharing results and recommendations outside your organisation allows the conservation community to learn from your successes and failures, improving how well conservation works overall and enables your project to extend its impact far beyond its particular location or context.

It is particularly important to share the results of projects that did not work as intended, to prevent others from wasting resources on actions that are unlikely to be successful. Sharing 'negative' results is increasingly common: in the Conservation Evidence journal, 31% of the interventions whose success could be judged did not deliver the hoped-for result.

As the success of conservation interventions may often be context-specific, having more publicly available studies of a given conservation action puts planners of future projects in a better

position to assess the likelihood of that action working for their own project. It also enables actions to be compared, to assess which of them are likely to work best in a given context.

## EXAMPLE

Sharing results publicly can have wide-ranging and unexpected benefits for other conservationists. In early 2007, the Conservation Evidence journal published a paper on Critically Endangered Echo parakeets in Mauritius. Chicks in nest holes were dying after being covered in slime from giant African land snails, so conservationists put copper bands around nest trees, which appeared to reduce chick deaths as the snails were reluctant to cross the copper. Conservationists in the UK read this paper and decided to apply it to a different problem – the herbivory of the Critically Endangered red helleborine in the UK. In May and June 2007 they tested the use of cages with copper bands around the plants, and the plants with copper bands were not damaged by slugs and snails. These findings were published in the Conservation Evidence journal in late 2007.

Williams, D.R., Child, M.F., Dicks, L.V., Ockendon, N., Pople, R.G., Showler, D.A., Walsh, J.C., zu Ermgassen, E.K.H.J. & Sutherland, W.J. (2017) Bird Conservation. Pages 95-244 in: W.J. Sutherland, L.V. Dicks, N. Ockendon & R.K. Smith (eds) What Works in Conservation 2017. Open Book Publishers, Cambridge, UK

## STEP 4

HOW CAN I SHARE  
MY RESULTS?**How can I share my results?**

There are several ways in which you can share the results of your work with the wider conservation community. One route is to publish in traditional academic journals. However, this process is often time consuming and expensive, and results may be rejected for lack of scientific interest or lack of novelty.

A more straightforward option is to publish in the dedicated practitioner journal run by the Conservation Evidence project <http://www.conservationevidence.com/collection/view>, which aims to share globally the experience of those in the front line of conservation practice on the effectiveness of particular conservation actions. The journal is free to publish in, and is also open-access, so is free for other practitioners to read. To publish in Conservation Evidence you must have:

- directly and quantitatively tested a conservation action;
- measured the results appropriately;
- made some kind of comparison, such as with the earlier situation or with a control site. There is no need for the study to be scientifically novel.

Studies are welcome in the journal on all aspects of conservation action and do not need to be scientifically novel. Examining the consequences of small interventions, such as changing the wording on a sign or comparing different techniques for eradicating an invasive species, is of particular interest. Broad programmes, such as a large scale projects with multiple interventions, will usually be of less interest, as they are harder to interpret. Conservation Evidence does not include studies solely on monitoring methods, species ecology or threats to biodiversity.

Full details, author guidelines and a template article can be found at <http://www.conservationevidence.com/collection/view>.

A further such resources is the CMP Conservations Actions & Measures Library (CAML), an open-source library of results chains for the most common conservation actions: <http://cmp-openstandards.org/tools/caml/>

### WHAT SHOULD BE DONE NEXT? CHECKLIST

- Have you developed recommendations?
- Have you developed a plan for applying results internally?
- Do you know how you will communicate results to external audiences
- Have you considered whether your recommendations and results should be shared with the wider conservation community?



**prism**

# SECTION 3

## THEMATIC MODULES



**MODULE 1**  
AWARENESS &  
ATTITUDES



**MODULE 2**  
CAPACITY  
DEVELOPMENT



**MODULE 3**  
LIVELIHOODS &  
GOVERNANCE



**MODULE 4**  
POLICY



**MODULE 5**  
SPECIES & HABITAT  
MANAGEMENT

## CONTENTS SECTION 3

### Section 3 Thematic Modules



[Attitudes & Awareness](#)



[Capacity Development](#)



[Livelihoods & Governance](#)



[Policy](#)



[Species & Habitat Management](#)

This section provides detailed guidance and methods to measure outcomes and impacts relating to each of PRISM's five thematic modules, each of which covers a different category of conservation action.

Use the framework and summary information within each module to guide you towards specific methods for measuring change in relation to the outcome/impact you are trying to evaluate.

## Attitudes & Awareness

### Summary

In this chapter we provide guidance on how to evaluate the impact of project actions that aim to affect **attitudes** and **awareness** of stakeholders.



## ATTITUDES & AWARENESS

### SPECIFICALLY THIS MODULE COVERS:

#### What do we mean by attitudes and awareness?

#### What to consider when evaluating attitudes & awareness outcomes/impacts.

#### Understanding how your project actions aim to change attitudes and awareness.

#### Methods for evaluating attitudes & awareness outcomes/impacts:

1. Messages disseminated to/received by target audience(s).
2. Audience has desired attitude.
3. Audience has desired awareness/knowledge.
4. Audience adopts desired behaviour.

### FACTSHEETS & ANNEXES

- [Sample questions and scales for evaluating attitudes and awareness actions](#)
- [Planning a successful attitudes/awareness action](#)





## ATTITUDES & AWARENESS

### WHAT DO WE MEAN BY ATTITUDES AND AWARENESS?

#### What do we mean by attitudes and awareness?

Actions aimed at influencing attitudes and awareness, and which ultimately lead to behaviour change, are important in many conservation projects. When planning the evaluation, during the design of the action, it is crucial to consider the ethical requirement for these actions (see factsheet [Developing ethical protocols for an evaluation](#)). Attitudes and awareness actions may be essential for achieving the biodiversity target, for example, previous research may have identified negative attitudes or low awareness as integral to a threat: actions in this area can be a way of engaging with the community and can be a source of unexpected information. However, projects that target attitudes & awareness without identifying a specific need, risk wasting time, being unethical and not providing useful data.

Refer to the factsheet [Planning a successful attitudes/awareness action](#) for more information.

#### EXAMPLE

A person may have a negative attitude towards bats because of: bats carrying diseases in their country (knowledge), Halloween or vampire stories heard as a child (emotion) and/or, the person having regularly been required to sweep up bat droppings at their home or church (behaviour). A negative

#### Attitudes

The concept of attitude has had many definitions but is generally accepted to be the **evaluative judgement** that a person makes about a particular object or situation, with a key aspect being the evaluation.

Attitudes are made up of three main parts:

- **Knowledge** (cognitive)
- **Emotion** (affective)
- **Behaviour**

Hence an attitude represents a summary of what a person knows about something, how they feel about it and how they act. Attitudes can be positive or negative and can vary in strength (how resistant the attitude is to change, how strongly it influences the way the individual thinks about other information, and how important it is in guiding the individual's behaviour). Research suggests that stronger attitudes are primarily driven by the emotional (affective) component.

attitude may make it difficult to persuade them that bats are worth conserving. However, the negative attitude may also not be a conservation concern - someone may think negatively about going inside a cave because bats may be present, but they may never do any harm to bats.





## ATTITUDES & AWARENESS

### WHAT DO WE MEAN BY ATTITUDES AND AWARENESS?

**Attitudes can be explicit or implicit.** Explicit attitudes operate on a conscious level with the holder being aware of their attitude and adjusting their manner accordingly, while implicit attitudes act at a subconscious level without the person being aware of the reason for the attitude they hold. Dual attitudes may also be held, where people hold an old implicit attitude that co-exists with a new explicit attitude (or vice-versa).

#### Linking attitudes and behaviours

The link between attitudes and behaviours is potentially contentious. It is generally accepted that attitudes can influence behaviour, but when evaluating an attitude-behaviour link it is essential to determine the correct target attitude to measure (it is not always obvious) and acknowledge that there may also be many other influential factors involved, for example perceived barriers to action, habits, identity and social norms (see box on “Challenges when measuring attitudes” below).

The factors influencing behaviour may differ between situations and it is necessary to consider the numerous factors affecting behaviour. Several behavioural theory models have been developed to try to explain how attitudes link to behaviour, but there is no single model that fully explains the attitude-behaviour relationship.

#### CHALLENGES WHEN MEASURING ATTITUDES

Although someone may be explicitly concerned about climate change, they may drive a short distance to work if it is raining rather than get out an umbrella or get their shoes wet; they may take a short flight to see friends or family rather than drive; or they may use a lot of energy for heating their home. In these scenarios the individual's attitude to climate change has been surpassed by their attitude towards getting wet on the way to work, or spending time with friends/family rather than using slower forms of transport, or the cost and trouble of installing home insulation.

Although it seems logical to promote positive environmental behaviours by linking a person's attitude towards climate change with behaviours such as car sharing, public transport or home insulation, these scenarios show how difficult it can be to determine the specific attitudes that are influencing a given behaviour. Therefore it can be difficult to identify which attitude a project action should address and what needs to be measured to evaluate the action.





## ATTITUDES & AWARENESS

### AWARENESS

#### Awareness

**Awareness** raising actions within a conservation project may be carried out for a variety of reasons. For example, awareness raising initiatives may be used to:

- provide information and raise awareness within a project team about the social context the project is working within;
- integrate the project and staff within the local community;
- initiate/support a desired behaviour change to reach a particular project outcome;
- inform the community about general, local or global conservation priorities not specific to the project but potentially gaining support for future conservation action.

A note of caution arises from the “**knowledge deficit model**”. This is the idea that a negative behaviour is performed because the individual is unaware of its negative consequences, and that if this “knowledge deficit” is corrected, the behaviour will change. However, increasing awareness or knowledge of an issue does not necessarily lead to a change in attitudes or behaviours, since there are normally many variables affecting whether a particular behaviour occurs or not.

#### Social marketing

Conservation projects are increasingly using social marketing approaches to influence behaviours in order to achieve conservation goals. Emerging as a discipline in the 1970s, social marketing is most widely used in the health sector, where it influences behaviours such as smoking and alcohol use. Social marketing applies the ideas and methods used in marketing to “sell” attitudes, values and behaviours that benefit society at the individual, local, national or broader scale, specifically aiming to change behaviours, not just the attitudes or awareness about an issue. The timeframe of intervention and behavioural effect would limit the possibilities for use of social marketing within most small/medium-sized conservation projects. An intervention aimed only at changing attitudes or raising awareness would not be considered as a social marketing intervention.

Social marketing in conservation may be used to promote positive conservation behaviours where none existed before, or to reduce the occurrence of negative behaviours. In social marketing there is a strong emphasis on evaluation and particularly on the use of quantitative data.



## What to consider when evaluating attitudes & awareness outcomes/impacts



### ATTITUDES & AWARENESS

### WHAT TO CONSIDER WHEN EVALUATING ATTITUDES & AWARENESS OUTCOMES/ IMPACTS

#### Check project design

**Evaluating the effects** of interventions designed to influence attitudes and awareness is a critical part of a project and should be planned at the design stage. The effects of these interventions may be seen both within the project or among the audience, and may occur over a variety of timescales.

It is important to identify the **appropriate audience** for the message, which may be the individuals whose behaviour could influence the success of the conservation goal, an influential peer group around these people, or influential groups in the wider community.

If possible you should aim to develop a robust [Theory of Change](#) to associate the intervention with the target outcome. Although it may not be possible to evaluate the effect of the intervention on the desired biodiversity outcome, intermediate outcomes can be evaluated, provided there is a clear link to the eventual conservation target.

**Timing** of events is also important. For example, it is necessary to consider the timing of the evaluation in relation to other community activities, avoiding clashes with other activities or work e.g. so that events maximise attendances, and to consider timing of the message in relation to the target behaviour.



Photo credit: Iain Dickson

### Attributing outcomes & impacts to actions targeting attitudes and awareness



## ATTITUDES & AWARENESS

## ATTRIBUTING OUTCOMES & IMPACTS TO ACTIONS TARGETING ATTITUDES AND AWARENESS

The most appropriate evaluation designs for attitudes and awareness are given below:

- 1) [Matching designs](#) - Identifying two or more groups of people, one of which is subject to the project's actions while the other/s is/are not, then recording any changes. Evaluating the effect of an intervention is achieved through assessing attitudes or levels of awareness in each situation both prior to the intervention and post intervention. A single comparison of groups post intervention may also show some differences between the groups, but this is less robust as there is no information on an attitudes/awareness baseline for the groups or on how similar the groups were to start with. Data to demonstrate similarities in target audiences for the different populations need to be collected in the pre-test. A time series design can also be employed to assess persistence of the attitudes or awareness within the target population.

#### Issues:

- *It is normally impossible to find two groups with exactly matching characteristics outside of a rigorous scientific experiment. However, similar groups may be found by looking at broad characteristics such as type of employment, ethnicity, age or gender. If it is impossible to find similar groups of people, it may be better to match people within each group and evaluate their similarities/differences rather than assessing the whole group. If there is the potential for*

*mixing of the people e.g. students who sit in two different classes but who meet during playtimes, attitudes and/or awareness can spread between the treatment population and the control population, reducing the differences seen between the two groups at the post intervention assessment.*

- *Pre-testing can sensitise people to the attitudes/awareness you are interested in and can affect the results they give in subsequent surveys, e.g. if they know you are interested in a particular species because of some questions in the first survey, they may answer more positively about this species in the second survey.*
- *Depending on the intervention, withholding activities from one population while undertaking them with another may be perceived to be unethical. This might be solved by undertaking the activity with the control population at a later date, after testing is complete.*





## ATTITUDES & AWARENESS

### ATTRIBUTING OUTCOMES & IMPACTS TO ACTIONS TARGETING ATTITUDES AND AWARENESS

#### 2) [Before-after designs](#)

**Time series design.** Assessments of the attitudes/awareness of the target audience are carried out prior to the intervention, shortly after the intervention and several weeks after the intervention. This series of assessments records any change in attitudes/awareness and the persistence of that change. People are likely to respond well immediately post intervention, but the response may erode over time as they revert to their usual social life and habits. This kind of assessment is best performed using a comparison with a “no-intervention” control group.

**Single case before-after.** If long-term follow up is not possible, recording baseline information about people’s attitudes/awareness before an intervention and repeating a similar assessment after the intervention can give some measure of whether the information has been understood by the audience, and whether it has influenced attitudes and awareness in the short-term.

#### Issues:

- *Pre-testing can sensitise people to the attitudes/awareness you are interested in and can affect the results they give in subsequent surveys.*
- *Events apart from the intervention may affect people's attitudes/awareness in relation to a topic, for example if the national news media pick up a story about an issue similar to the one being addressed by the local project, this, rather than the project intervention, may be the cause of an influence on people's attitudes/awareness.*

- *With the single case before-after design, there is no information about whether the attitude/awareness persists in the longer term, so it is difficult to link it to any permanent effect.*

#### 3) [Participatory Impact Assessment](#) - Asking people whether they perceive that a change in their attitudes and awareness has occurred between the time before and the time after the intervention. The assessment can be made post-intervention and can provide an indication of change.

#### Issues:

- *PIA relies on people accurately and honestly recalling their attitudes and awareness before the intervention. The intervention may not have addressed an attitude they had ever thought about, so there may be bias associated with their perception of your desired results. Their recall also may be influenced by input from a peer group.*





## ATTITUDES & AWARENESS

### IDENTIFYING QUESTIONS AND INDICATORS FOR EVALUATING ATTITUDES AND AWARENESS OUTCOMES/ IMPACTS

#### Identifying questions and indicators for evaluating attitudes and awareness outcomes/impacts

The type of questions asked and the manner in which they are asked depends on the target attitude. It is important to make sure that the indicator actually measures what you need to monitor and is not just an indicator used in other projects in slightly similar circumstances. Learning from other projects is valuable but the information you collect needs to be specific to your project. Many indicators may be unique to your situation, and choosing these is justified if well-planned.

Considerations for selecting indicators for attitudes include:

- Sensitive data.** Asking people to declare their feelings, thoughts and opinions on a topic can be difficult, particularly if the topic concerns sensitive or illegal behaviour. Cultural differences between interviewer and respondent may mean that there are unknown sensitivities about a topic, there may be social pressures to present a particular opinion to outsiders and/or there may be consequences for the respondent outside the scope of the project. It is crucial to seek guidance on the topic, establish whether any sensitivities exist and adapt the intervention accordingly. Special techniques exist for assessing sensitive questions where the respondents' information is anonymous, for example the Randomized Response Technique. These techniques require audience buy-in and trust in the interviewer to ensure that the respondent does not feel they are being tricked.
- Retrieval.** People store memories in different ways. Differences exist between short-term and long-term memory, with long-term memories being episodic (about life events), semantic (facts about the world) or procedural (how to do actions, e.g. ride a bicycle). Memories are subject to decay, where they are increasingly likely to be forgotten as time passes, and interference, where the more frequently something happens, the more difficult it is to distinguish the memory of an individual event. For example, if you were to ask what someone had for dinner two weeks ago they may have trouble remembering specifically, due to decay and because they had eaten several meals since, so potentially confusing the information.
- Ability to judge and estimate.** People compensate for imprecise or incomplete memories by estimating. A concept called the 'availability heuristic' has shown that the more memories a person has on a subject, the more common they think it is. The reverse is also true, where people think something is rare if they cannot remember many events. This translates into problems for trying to remember or assess attitudes relating to events. For example, if you ask someone to name six times they did something, such as ways they save energy, they may find it easy and therefore have a positive attitude about themselves and their ability to save energy. However if you asked them to recall 12 times they did it, they would find it harder and therefore have a more negative attitude towards their energy saving abilities. These attitudes may affect their answers to subsequent questions. People also have a tendency to estimate rather than remembering





## ATTITUDES & AWARENESS

### IDENTIFYING QUESTIONS AND INDICATORS FOR EVALUATING ATTITUDES AND AWARENESS OUTCOMES/ IMPACTS

accurately, so when asking someone for example how often they collect wood in the forest, the person may think of it as a daily task, forgetting all the days when they have not done it.

- **Attitude construction.** Historically there was an idea that attitudes were pre-existing, stable, predictable and resistant to persuasion. However a more modern outlook suggests they are not stable, can frequently change and, importantly, may be constructed on the spot. People may form an opinion on a topic as a result of being asked about it. This constitutes an attitude, but it may not be a strongly held one or one that is influential on the desired behaviour, so an assessment has to be made of whether this is relevant data for the intervention.

**Identifying indicators for awareness** is less difficult than for attitudes, but still holds several challenges. Again, the type of questions asked and the manner in which they are asked depends on the target answer. Considerations for selecting indicators for awareness include:

- **The type of awareness required.** The awareness someone has about a topic can be locally focused or more general. For example, does the intervention intend to improve knowledge about the lion population in the local area or about lions in general?
- **External context.** Consider whether another organisation or event informs the target audience about the topic outside the scope of the intervention but within the timescale of assessment. This is particularly important with time-series designs where measurements a few weeks or months after the intervention may be affected by events external to the project. For example a coincidental television or radio programme focusing on the same topic as the conservation project may influence awareness in a way that the project actions haven't been able to do.





## ATTITUDES & AWARENESS

### IDENTIFYING QUESTIONS AND INDICATORS FOR EVALUATING ATTITUDES AND AWARENESS OUTCOMES/ IMPACTS

**Identifying indicators for behaviour change** also presents challenges. As discussed earlier, the link between attitudes/ awareness and behaviour change is typically indirect and non-linear, affected by other factors such as social norms, perceived barriers and actual barriers, which all influence whether a person undertakes a desired action – their intention to undertake it is only one factor, and the intention may be overridden by these other factors. Behavioural change following an attitude or awareness intervention may, therefore, be difficult to observe without other interventions to deal with the other factors. However on occasions behaviour change can occur directly and in a short time frame, for example, a strong marketing exercise promoting the plight of a species may cause a measurable response in the form of increased donations or increased volunteer activity to support the conservation of the species.

Considerations for selecting indicators for behaviour change include:

- **The behaviour required.** The desired behaviour can be the stopping of a negative behaviour (for example reducing the exploitation of a species), or the pursuit of a positive behaviour (for example growing more appropriate plants for wildlife). Monitoring and evaluating whether a behaviour has stopped often requires different methods from those required for evaluating whether a behaviour has started. For example, people may be reluctant to admit they were doing something that negatively affected biodiversity as they may think this makes them look bad, while people may be very willing to say they are doing something positive to help biodiversity as they may think this will make them look good.
- **The scope and scale of the behaviour.** A behaviour may be locally specific to the biodiversity target or more broadly related to conservation. For example very specific indicators may be identified if the aim was to get a beach clean (e.g. do people assist in events to remove rubbish, are bins used, is there less rubbish over a particular period). However, if people are being encouraged to take up a more general behaviour, for example supporting conservation organisations, they may become active members of a range of organisations in different areas and support them in different ways (e.g. financially, politically or practically through volunteering), so it is difficult in these circumstances to identify how many people have changed their behaviour.
- **External context.** As with the other indicators, if another organisation or event informs the target audience about the topic of interest outside the scope of the intervention but within the timescale of assessment, this can affect the ability to attribute change. This is particularly important with time-series designs where the third measurement a few weeks or months after the intervention may be affected by events between intervention and assessment.



Understanding how your project actions aim to change attitudes and awareness

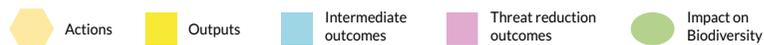
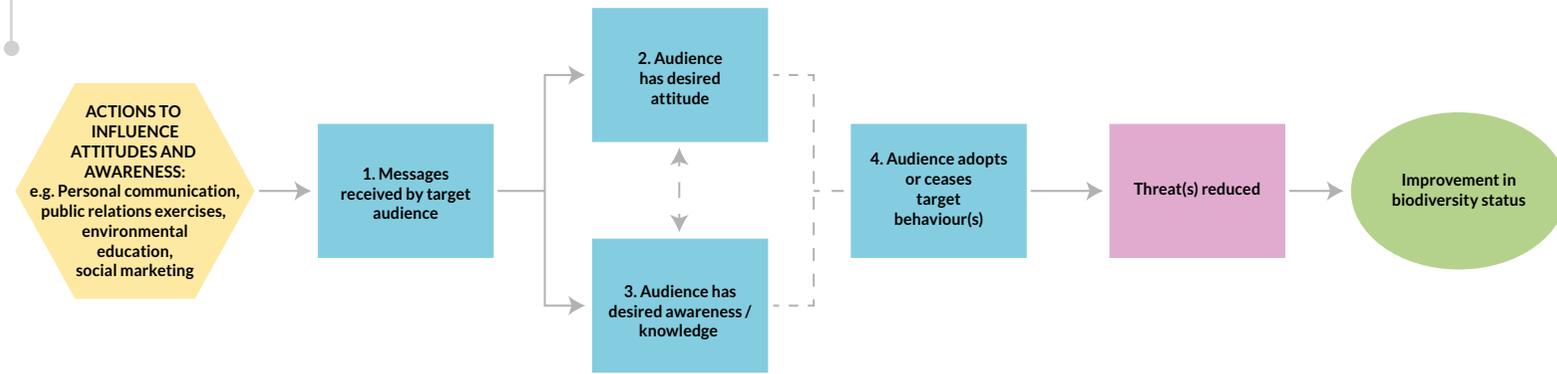
The Attitudes and Awareness Framework illustrates the route for how interventions focused on attitudes and awareness may lead to a positive change in the conservation target for a project.



ATTITUDES & AWARENESS

UNDERSTANDING HOW YOUR PROJECT ACTIONS AIM TO CHANGE ATTITUDES AND AWARENESS

FIGURE 1: ATTITUDES AND AWARENESS OUTCOME AND IMPACT FRAMEWORK





## ATTITUDES & AWARENESS

### FRAMEWORK NOTES

#### Framework notes

This framework is a simple Theory of Change that may work over different timescales. Within the project's lifetime, a social marketing exercise to reduce a damaging behaviour caused by attitudes that are not strongly held could bring about a change in behaviour and subsequent improvement in the biodiversity target quite rapidly. Over a longer timescale, changing something like farming or hunting practices could take many years of effort before an improvement in the target species population or habitat is seen, so the complete Theory of Change may not be observed within the lifetime of the project.

Where a rapid effect of an intervention on attitudes can be observed, a project may detect a measureable improvement in biodiversity status as an indicator of intervention impact. However, it is much more likely that the project will be focused on one small section of the framework presented.

For attitude and awareness actions, the observation of behavioural change is usually the most desirable measure of impact, particularly as people's self-reported attitudes may differ from their actions. However, given short timescales, observing behavioural change may not be achievable within the lifetime of a small to medium-sized project. Furthermore, attitude and awareness actions are commonly part of a complex programme of activities that include policy, capacity, livelihoods and governance actions. For example, laws may be put in place to stop a negative behaviour, but if there is insufficient capacity or willingness to enforce the laws, influencing people's attitudes and awareness about the behaviour would be necessary.

Although it may be difficult to be sure that the attitudes or awareness being targeted by the intervention are crucial for affecting the behaviour, well-executed preliminary investigations, detailed project planning, and piloting the evaluation methods should greatly increase the effectiveness of the evaluation.





## ATTITUDES & AWARENESS

### METHODS FOR EVALUATING ATTITUDES & AWARENESS OUTCOMES/ IMPACTS

**TABLE 1: EXAMPLES OF INDICATORS AND SUGGESTED METHODS**

OUTCOMES/ IMPACT	EXAMPLE INDICATORS	METHODS
1. Messages received by target audience	<p>Project changes in response to audience feedback</p> <p>Increased awareness of project by audience</p> <p>Increased awareness of project by audience peers</p>	<p><a href="#">Questionnaire</a></p> <p><a href="#">Key informant interview</a></p> <p><a href="#">Direct observation survey</a></p> <p><a href="#">Documentary evidence</a></p> <p><a href="#">Participatory photo evaluation</a></p>
2. Audience has desired attitude	<p>Change in target attitude by audience</p> <p>Change in associated, but not target, behaviour by audience</p> <p>Change in target attitude by audience peers</p>	<p><a href="#">Questionnaire</a></p> <p><a href="#">Key informant interview</a></p> <p><a href="#">Direct observation survey</a></p>
3. Audience has desired awareness/knowledge	<p>Change in target awareness by audience</p> <p>Change in target awareness by audience peers</p>	<p><a href="#">Questionnaire</a></p> <p><a href="#">Key informant interview</a></p>
4. Audience adopts desired behaviour	<p>Change in occurrence of target behaviour</p>	<p><a href="#">Questionnaire</a></p> <p><a href="#">Direct observation survey</a></p> <p><a href="#">Indirect evidence</a></p>





## ATTITUDES & AWARENESS

### INFORMATION RELEVANT TO ALL STAGES IN THE ATTITUDES & AWARENESS FRAMEWORK

#### Information relevant to all stages in the attitudes & awareness framework

There are several methods for evaluating attitudes & awareness outcomes. These vary in robustness, cost, effort and timescale.

Most evaluations relating to attitudes & awareness currently use [questionnaires](#) but applied in different ways. Questions in questionnaires can either be open, allowing the respondent scope for providing free text answers, or closed, where the respondent is asked to select from prescribed answers, or a mix of closed and open options.

**Piloting** of any method is essential to assess its validity. Piloting is a small-scale test of what will happen in the full evaluation. Piloting assesses whether the approach for the evaluation is realistic and is going to achieve the desired goal of accurately measuring attitudes and awareness. A good pilot test will reveal problems that can be addressed before the main evaluation takes place (e.g. do people get bored and give up because the questionnaire is too long? Are some questions unnecessary? Is the selected interview approach a good method?). The pilot can also be used for specific feedback on the evaluation process, to assess whether a range of responses is being given, whether people are replying with the required information and whether the evaluation can be shortened. Importantly, the pilot can also help to reveal whether the questionnaire is “internally valid”. An internally valid questionnaire is one where the questions are understood by the respondent, the questions gather the data required by the project, and there are no alternative explanations for the results observed. For example, asking someone what they feel about the statement “I like wildlife” is open to many interpretations of the words “like”

and “wildlife”. A better way of approaching this would be to ask questions that specify the object in question, for example (feeling) “I think ladybirds are lovely to look at” combined with (behaviour) “I have let a ladybird walk on my hand”.

**Novel evaluation methods.** Traditional methods may not be appropriate in situations where literacy is low. There are also more engaging ways to interact with an audience that can be more fun. Examples of these include inviting people to draw pictures representing scenes and examining prominence of specific objects, or photo/video evaluation techniques where people are provided with a camera and asked to photograph/film things representing a proposed topic. Comparisons can be made in the subjects of the drawings or photos before and after the intervention, or between groups involved in the intervention and groups who are not.



The numbers below relate to the boxes in Table 1 and Figure 1. Refer to the [Species & Habitat Management Module](#) for methods for evaluating changes in biodiversity status.



## ATTITUDES & AWARENESS

### OUTCOME 1. MESSAGES DISSEMINATED TO/RECEIVED BY TARGET AUDIENCE(S)

#### Outcome 1. Messages disseminated to/received by target audience(s)

Potential data collection methods at this level include [Documentary evidence](#), [key informant interviews](#) & [questionnaires](#). Potential measures of impact include:

- qualitative records of information gained;
- project progress records highlighting changes in project action.

Social media activity can provide data on spread of information, while the distribution and occurrence of information materials can give some indication of the spread of information throughout a community. This information can be captured in the form of an activity log or activity tracking sheet(s).

#### Potential measures include:

- location of leaflets/materials distributed;
- number of Facebook “likes”;
- number of hits on a website;
- sign-up rates to a campaign or organisation.

#### Main issues:

- With regard to audience attitudes and awareness, any evaluation at this stage provides a very short-term measure with no indication of the persistence of the intervention effect. This means it is difficult to be certain that the intervention will have an effect on behaviour.
- Social media “likes” or website hits give some indication of interest in the general population, but they are very simple measures that may not engender any particular change in behaviour within the population. Signing up to organisations, events or campaigns demonstrates interest in the topic, although this doesn’t necessarily always mean it is positive.
- The social media measures are likely to be biased to the younger portion of the population and therefore may not necessarily indicate that the message is reaching the target audience (unless those young people are the target!).





## ATTITUDES & AWARENESS

### OUTCOME 2. AUDIENCE HAS DESIRED ATTITUDE

#### Outcome 2. Audience has desired attitude

Evaluation at this level looks at the uptake of the message by the target audience. This should be assessed in the medium to long term to validate persistence of the attitude.

##### Potential measures include:

- [questionnaires](#) on attitude held by audience;
- [Participatory photo evaluation](#) to determine how people perceive the subject of interest, for example if asked to take photos that represent the protected area, do the photos hold positive or negative content;
- in the medium or long-term, [questionnaires](#) or [key informant interviews](#) to assess the attitude held by peers (family, friends, neighbours, colleagues) due to dissemination of the message by members of the audience.

Refer to the factsheet [Sample questions and scales for evaluating attitudes and awareness actions](#) for some specific examples of the type of questions that can be used to evaluate changes in attitudes.

##### Main issues:

- If no baseline information has been recorded (i.e. when surveys are only carried out after the action), it will be difficult (but not impossible) to assess any change in attitude attributable to the intervention.
- People may express an attitude they do not actively hold, either to meet perceived social expectations or

because their explicit attitude opposes the implicit attitude that may actually affect their actions. For example, if general attitudes are being assessed at a meeting, people who think in opposition to the prevailing attitude may not be willing to speak up or agree with the main group attitude, in order to appear to be in agreement with their friends, colleagues or elders.

- A change in attitude does not necessarily determine a change in behaviour.
- The context within which the information about the attitude is gathered may affect the results of the assessment. For example if carrying out a survey in the local Wildlife Office, people may be more attuned to presenting wildlife-friendly and positive management attitudes than if in their own home; and filling out a questionnaire may elicit different results from those obtained by an interview. In a before & after comparison, timing in relation to the seasons may affect attitudes about plants or animals that are only seasonally present in the area.
- With assessment of peers it may be difficult to separate the attitude previously held from that gained from the target audience member.





## ATTITUDES & AWARENESS

### OUTCOME 3. AUDIENCE HAS DESIRED AWARENESS/ KNOWLEDGE

#### Outcome 3. Audience has desired awareness/knowledge

Evaluation at this level looks at the uptake of the message by the target audience, and should be assessed in the medium to long term to validate persistence of the awareness.

##### Potential measures include:

- quizzes, [questionnaires](#) or non-literary assessments of awareness held by the audience, for example asking people to draw a woodland scene before and after an event, then comparing the details included in the pictures;
- in the medium or long term, [key informant interview](#) assessments of the awareness of peers (family, friends, neighbours, colleagues) about the message resulting from dissemination by the members of the audience.

Refer to the factsheet [Sample questions and scales for evaluating attitudes and awareness actions](#) for some specific examples of the type of questions that can be used to evaluate changes in awareness/knowledge.

##### Main issues:

- An absence of baseline information will make it difficult to assess any change in awareness attributable to the intervention.
- A change in awareness does not necessarily determine a change in behaviour.

- Other awareness-raising activities, for example television or radio shows, may affect results if there is a gap between intervention and assessment, making it difficult to attribute all knowledge, except the specific situation awareness, to the intervention.
- With assessment of peers it may be difficult to separate the awareness previously held from that gained from the target audience member.
- The potential for negative side effects, for example informing people about the uses of various species, may mean the species gets exploited even more. For example if the project is trying to stop people harvesting a particular plant and selling it at market, raising awareness may cause more people to go out to find and harvest the plant.





## ATTITUDES & AWARENESS

### OUTCOME 4. AUDIENCE ADOPTS DESIRED BEHAVIOUR

#### Outcome 4. Audience adopts desired behaviour

Changing attitudes and/or awareness is one of the most commonly used strategies for changing behaviour. It is important to remember that changes to attitudes do not necessarily lead to changes in behaviour, so if you are using this as your main unit of measurement for assessing impact, you must be clear about what evidence or theory you are relying on to suggest that changing attitudes will lead to behaviour change and the desired conservation effect. What makes this challenging to evaluate is that, while a change in knowledge/attitudes/values can happen relatively quickly (sometimes immediately) after an intervention, changes in behaviour take longer to become apparent.

Indicators of behaviour change may also be evaluated through questionnaires that assess people's reports of their own or others' behaviour, or through direct observation of the behaviour and indirect information from other sources. Measuring behaviour change is generally a much stronger predictor of conservation success than changes in attitudes/awareness, so if at all possible, efforts should be made to evaluate changes in behaviour.

#### Potential measures include:

- changes in attitudes and awareness will most commonly be evaluated through questionnaires and interviews;
- objective observation of behaviour through [observation surveys](#) (direct) or related signs (indirect). For example it is possible to see whether people change their use of cars by doing traffic surveys, or whether there is a rise in volunteer work for local charities by interviewing charity staff;

- [Key informant interviews](#) or [focus groups](#) to discuss the occurrence of the target behaviour.

Refer to the factsheet [Sample questions and scales for evaluating attitudes and awareness actions](#) for some specific examples of the type of questions that can be used to evaluate changes in behaviour.

#### Main issues:

- People misreporting the occurrence of the behaviour.
- The potential for a negative behaviour side effect of the intervention, for example people swapping one resource use behaviour (collecting wood from the forest) for another behaviour (burning toxic rubbish indoors).





## ATTITUDES & AWARENESS

### EXAMPLES

#### EXAMPLE OF AN INDIRECT INDICATOR

An intervention focused on increasing recycling behaviour by raising awareness and changing attitudes. In order to evaluate this intervention it would be possible to ask people how much or what they were recycling. However the evaluation could be strengthened by also counting the number of bins being put out for recycling before and after the intervention, and possibly by examining records of recycling volumes calculated by the organisation involved in collection. These would give an indication of whether the change in attitudes/awareness resulted in a change in behaviour.

#### EXAMPLE OF NEGATIVE BEHAVIOUR CHANGE

A project carried out an awareness raising campaign within the range of a threatened species of beetle. One of the campaign interventions explained how rare the beetle was, and that it was under threat mostly from being harvested to be sold to collectors, who would pay a lot of money for a specimen. Very unfortunately the campaign had the negative impact of increasing the harvesting rates, by informing people how they could profit from harvesting.

#### EXAMPLE OF EVALUATION DESIGN

It can be difficult to establish the attitudes that influence a particular behaviour, and the other factors that may be involved in stopping someone with the desired attitude performing the targeted behaviour. For example, the required action may be to stop people visiting a forest where they are impacting a local species or a valuable habitat. Interviews and surveys may reveal that the reason people are visiting the forest is to collect wood. Finding an alternative wood source may be one proposed solution. If the alternative wood source is provided and people are willing to use it, they may nevertheless still visit the forest to exercise their dogs. The dog walking hadn't been the explicit primary aim of visits to the wood, but it may come to be so, since the dogs still need walking and the owners' attitude to their pets' health overrides their attitude towards the wildlife or habitat. Despite the project's success in finding the new wood source, it now has a different problem to deal with and must start again. Projects in complex situations like these can be improved with good planning and design, but also proper evaluation can demonstrate what has worked and the value of information gained, in this case why the wood collection was considered the primary forest use, how that challenge was met and the additional lessons that were learned.



## Capacity Development

### Summary

This chapter contains methods for evaluating the outcomes and impacts of capacity development actions being implemented by small/medium-sized conservation projects. Areas covered:



## CAPACITY DEVELOPMENT

### SPECIFICALLY THIS MODULE COVERS:

#### What do we mean by capacity development?

#### What to consider when evaluating capacity development actions

#### Understanding how capacity development actions benefit conservation targets

#### Methods for evaluating capacity development outcomes & impacts:

1. Improved skills/ knowledge
2. Improved empowerment/ confidence
3. Individuals apply new skills
4. Organisational performance improves
5. Networks and alliances have been formed/ strengthened
6. Conservation actions are implemented more effectively

### FACTSHEETS & ANNEXES

- [Example questions and scales for training evaluation](#)
- [Organisational capacity assessment tool](#)
- [Network health scorecard](#)



**What do we mean by capacity development?**

There are many definitions of capacity development or capacity building, all of which are very broad. Here we define capacity development as:



*Processes that improve the ability of people, organisations, or society to perform better, solve problems or manage their affairs successfully.*

## CAPACITY DEVELOPMENT

### WHAT DO WE MEAN BY CAPACITY DEVELOPMENT?

Most projects tend to focus on just one level of capacity development – usually the individual or organisation level.

Projects that develop individual capacity may still be contributing to organisational capacity, since organisations need individuals with the capacity to achieve their aims. Typical aims of individual capacity development include increased skills and knowledge, while typical aims of organisational capacity development include improved governance, fundraising or strategic planning. It is useful to understand how the different levels of capacity development are interconnected, as shown in Figure 1.

**FIGURE 1: CATEGORIES OF CAPACITY DEVELOPMENT ADAPTED FROM UNESCO IHE.**

Capacity development covers a variety of actions, including:

- training – to build skills and knowledge;
- building confidence;
- gaining practical experience or placements;
- mentoring and coaching;
- building networks and partnerships or alliances;
- providing resources such as funding, tools, or equipment.



## What to consider when evaluating capacity development actions



## CAPACITY DEVELOPMENT

## WHAT TO CONSIDER WHEN EVALUATING CAPACITY DEVELOPMENT ACTIONS

### Check project design

Before carrying out capacity development actions it is important to understand and assess what capacity needs exist among the individuals or groups you will be working with. This may require an initial data-gathering phase. The results will inform your Theory of Change, and ideally these groups should be involved in designing your Theory of Change.

You also need to understand how ready any organisation (or individual) is to adopt the new knowledge or skills into their practice. You may need to incorporate some preparatory work into your action plan to understand this and to modify the plan accordingly.

An evaluation programme should be designed as part of your overall project planning in the beginning rather than at the end. You can use the Theory of Change process to choose measures – or indicators – that will assess the change – or outcome – that each or your project steps aims to bring about. Questions to ask are:

1. What is the conservation goal that you wish to achieve through capacity development?
2. How will your activities lead to this goal – and how will you measure the changes you are bringing about – what indicators will you use?
3. Do you need a baseline (using the indicators in 2 above)?

4. How will you be sure that the changes you are measuring are the result of your actions rather than other factors?
5. What resources and length of time do you need to do this?

Practitioners often ask for tools to measure their capacity development outcomes & impacts, whereas the most important first step is to ask what you are trying to achieve, and therefore which indicators are best suited to measure the change you are aiming to bring about. This module includes examples of indicators and methods that you can adapt for your own purposes, and we suggest that you involve your team in this process. Indicators developed by projects and organisations are likely to be more relevant and useful to their own practices. Moreover, research has shown that organisations are more likely to change how they do things based on the results of their own evaluations.





## CAPACITY DEVELOPMENT

### ATTRIBUTING OUTCOMES AND IMPACTS TO CAPACITY DEVELOPMENT ACTIONS

#### Attributing outcomes and impacts to capacity development actions

You need to be able to show that the changes you are measuring are a result of your capacity development activities as opposed to other factors. Indeed, you need to consider whether your capacity development actions brought about any change at all! In principle you could use a [matching design](#), comparing the capacities of individuals or groups targeted by the project with those who were not. However, in practice it is rarely possible to find a control group that allows you to make a meaningful comparison, and so other methods are a better use of time and resources.

For most evaluations of capacity development actions, data collection will be carried out in the form of a [before and after design](#). This shows differences that your capacity action has made, by measurements taken before you begin and then again at the end. For example using pre- and post-course questionnaires to test for an increase in knowledge or level of confidence resulting from a training course.

The fact that most capacity development actions target specific skills and capabilities means that they are more suited to before & after designs than the other modules included in this toolkit, particularly when carried out shortly after the action itself has been carried out. These measurements can also be carried out at a later date to track longer term outcomes & impacts, however in this case it is essential to consider that other factors will come into play with time. See the factsheet on [before-after designs](#) for more information.

#### Key issues to consider when evaluating capacity development actions

- Decide on the timeframe over which you will measure your impact. The interval between capacity development actions and end results in conservation can be very long, and you need to select the timeframe appropriate to your project.
- Results may be influenced by several different organisations or projects, and will evolve over time. Your project will need to understand this wider context and then measure and report on the outcomes that are a result of your capacity development activities within the context of these other influences.
- You should aim to ensure that there is good ownership of the process among the groups or individuals you are working with – ideally they should be involved both in the design of the capacity development activities and in the evaluation process.

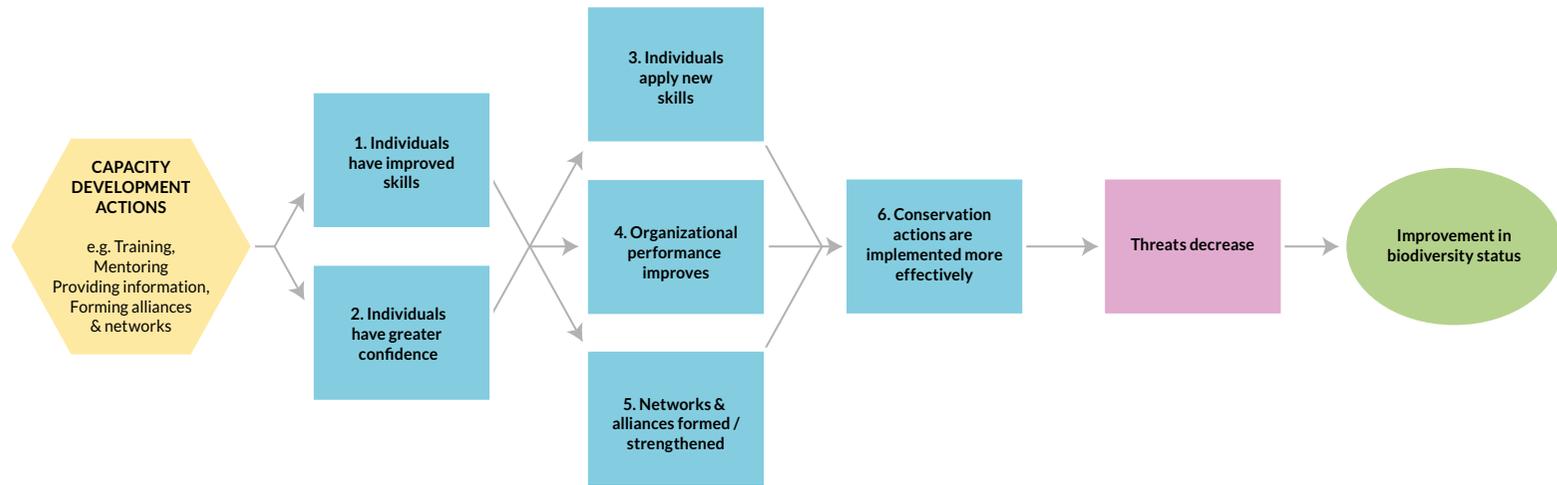


FIGURE 2: CAPACITY DEVELOPMENT OUTCOME/ IMPACT FRAMEWORK



### CAPACITY DEVELOPMENT

UNDERSTANDING HOW CAPACITY DEVELOPMENT ACTIONS BENEFIT CONSERVATION TARGETS





## CAPACITY DEVELOPMENT

### FRAMEWORK NOTES

#### Framework notes

- **How will your capacity development lead to conservation outcomes?** The Theory of Change (or equivalent) approach that we propose for projects implementing PRISM (see factsheet [Completing a Theory of Change](#)) asks you to be clear about the link between your actions and the conservation impacts you expect to happen as a result. By doing so, you explain what assumptions you are making that lead you to expect that your actions will bring about that desired result. For example, if you are developing skills and confidence among natural resource managers, your Theory of Change (or equivalent) will show just how and why you expect this to lead to improvements in biodiversity status.
- Outcomes 1, 2, and 3 all relate to dimensions of individual capacity development (as does stage 5 in some cases). Stages 4 and 5 relate to dimensions of organisational capacity development, while outcome 6 relates to the effect these changes in capacity have on the delivery of conservation actions.
- Outcomes 1 and 2 can be evaluated immediately after the capacity development action – for example by using before-and-after questionnaires. Outcomes 3, 4, 5 and 6 are more complex to evaluate and can only be evaluated some time after the capacity development action has taken place.



Photo credit: Jenny Merriman





## CAPACITY DEVELOPMENT

## METHODS FOR EVALUATING CAPACITY DEVELOPMENT OUTCOMES & IMPACTS

**TABLE 1: EXAMPLES OF INDICATORS AND SUGGESTED METHODS AT EACH STAGE (NUMBERS CORRESPOND TO OUTCOMES AND IMPACTS LISTED IN THE FRAMEWORK ABOVE (FIGURE 1)).**

OUTCOMES/ IMPACT	EXAMPLE INDICATORS	METHODS
1. <b>Individuals have improved skills</b>	<ul style="list-style-type: none"> <li>Number &amp; percentage of individuals that demonstrate an increase in desired knowledge and/or skills</li> </ul>	<a href="#">Before &amp; after questionnaire feedback form</a>
2. <b>Individuals have greater confidence</b>	<ul style="list-style-type: none"> <li>Number &amp; percentage of individuals that demonstrate an increase in confidence to apply their knowledge or to solve a particular problem</li> </ul>	<a href="#">Before &amp; after questionnaire</a> <a href="#">Training evaluation form</a>
3. <b>Individuals apply new skills</b>	<ul style="list-style-type: none"> <li>Number &amp; percentage of individuals that demonstrate that they are applying their acquired skills or knowledge</li> <li>Number &amp; percentage of individuals that can describe changes they have made to their practice as a result of the support received</li> <li>Number and description of cases where individuals have applied new skills</li> </ul>	<a href="#">Before &amp; after questionnaire</a>
4. <b>Organisational performance improves</b>	<ul style="list-style-type: none"> <li>Organisation demonstrating enhanced capacity in governance, leadership, etc.</li> <li>Organisation has improved strategic planning</li> <li>Organisation demonstrates improved fundraising capability</li> </ul>	<a href="#">Organisational capacity self-assessment tool</a>
5. <b>Networks and alliances have been formed/strengthened</b>	<ul style="list-style-type: none"> <li>Organisation demonstrates enhanced capacity in building and maintaining relationships with stakeholders</li> <li>Number of organisations/alliances collaborating</li> <li>Number and percentage of supported CSOs demonstrating improved support for citizens communities to take collective action</li> </ul>	<a href="#">Organisational capacity self-assessment tool</a>  <a href="#">Network Health Scorecard</a>
6. <b>Conservation actions are implemented more effectively</b>	<ul style="list-style-type: none"> <li>Evidence of threat reduced or habitat managed as intended</li> </ul>	<a href="#">Threat reduction scoring</a>





## CAPACITY DEVELOPMENT

### OUTCOME 1. INDIVIDUALS DEMONSTRATE THAT THEY HAVE ACQUIRED THE DESIRED KNOWLEDGE AND/ OR SKILLS

#### Outcome 1. Individuals demonstrate that they have acquired the desired knowledge and/or skills

Your Theory of Change and discussions on project aims will already have revealed what kind of knowledge and skills your project aims to develop. Therefore, the methods and indicators you use will be based on measuring changes in these specific areas. For example, you may wish to increase skills in a particular survey technique or enhance knowledge of anti-poaching laws and regulations.

The most common method used to evaluate changes in knowledge and skills is a [before and after questionnaire](#) or [feedback form](#). Questionnaires will ask individuals about their level of knowledge or skills before and then after the training. It is important to note that self-assessments are not objective (an individual may assess their skill levels to be much higher or lower than they actually are). A paired before and after test partially accounts for this, since it is the same individual making both evaluations. A second type of question could be a factual one – on the individuals' level of knowledge on the topic you are training in – such as knowledge of policy or of threats to a habitat. Again it is preferable for these questions to be asked before and then after the training. However, there will be situations when this is not appropriate – the individuals participating may feel threatened by being tested on their knowledge, and this may create a poor environment for the training. Note that testing for practical skill levels before and after training can be time consuming, costly and in many cases is not suitable, which is why questionnaire surveys are typically used instead.

A powerful measure is a follow-up survey at a later date to evaluate whether people are still applying the skills – i.e. to see whether any change in skill level has persisted. This is covered under outcome 3 below.

Refer to the factsheet [Example questions and scales for training evaluation](#) for some examples of the type of questions that can be used to evaluate skills and knowledge.





## CAPACITY DEVELOPMENT

### METHODS FOR EVALUATING CAPACITY DEVELOPMENT OUTCOMES & IMPACTS

#### Outcome 2. Individuals demonstrate that they have acquired the confidence and/or motivation to apply the desired knowledge and/or skills

Confidence and motivation are an integral part of capacity development. An individual may gain new skills through a training course, but they also need to have the confidence or motivation to apply these skills later. [Before and after questionnaires](#), or if this is not possible, post-training [feedback forms](#), are normally used to evaluate changes in confidence and motivation. Measuring levels of confidence through self-assessments should avoid “leading questions” but instead ask questions that elicit the respondent’s own view of their confidence. Sometimes it is good to use several methods to triangulate your results, you can check whether you are getting a consistent answer. Carrying out surveys some time after training is preferable, in order to evaluate whether any change in levels of confidence/motivation has persisted –this is covered in outcome 3 below.

Refer to the factsheet [Example questions and scales for training evaluation](#) for some examples of the type of questions that can be used to evaluate confidence and motivation.

#### Outcome 3. Individuals apply new skills or knowledge

This is a longer-term measure which is usually based on the same questions and indicators used for evaluating outcomes 1 and 2, but in this case is examining whether the change you have brought about persists into the longer term. It requires following up with individuals after the capacity development action has taken place. Indicators will tell you whether individuals are using the skills and knowledge they gained through your action. The most common method for doing this is to use a follow-up [questionnaire](#), preferably paired with the questionnaire you used for measuring immediate changes, because then you can compare the same indicators over time.

Refer to the factsheet [Example questions and scales for training evaluation](#) for some examples of the type of questions that can be used to evaluate the application of skills.

The [Most Significant Change method \(MSC\)](#) is another, more descriptive technique for exploring the ways in which new skills or knowledge are applied.

Details concerning MSC and its use can be can be downloaded here: <http://www.mande.co.uk/docs/MSCGuide.pdf>





## CAPACITY DEVELOPMENT

## METHODS FOR EVALUATING CAPACITY DEVELOPMENT OUTCOMES & IMPACTS

### Outcome 4. Organisational performance improves

Many projects focus on developing the capacity of organisations rather than developing the technical capacity of individuals. This is often the case where the main barrier to achieving conservation goals is not a lack of technical capacity among individuals but rather an organisational lack of capacity in areas such as planning, leadership or fundraising.

The way you evaluate changes in organisational capacity will depend on the scale of the organisation.

For evaluating changes in the organisational capacity of community based organisations (CBOs) refer to the factsheet: [Community-based Organisational Capacity Assessment](#) which details a simple tool for evaluating changes in the capacity of CBOs

For evaluating changes in the organisational capacity of NGOs, please refer to the factsheet: [Organisational Capacity Assessment Tool](#)

As for the other evaluations, we recommend that you carry out the assessment before and after the capacity development action. If the action is only targeting specific areas of organisational capacity (e.g. leadership, fundraising) then the assessment can be restricted just to these areas.

### Other resources

For another list of organisational capacity indicators and associated tools, look up the following resource from BOND (a UK membership body for NGOs). They group organisational capacity issues under the following headings:

- Improved internal organisation;
- Improved programme management;
- Improved external relationships.

[BOND – Assessing effectiveness in building the capacity of organisations & institutions: https://my.bond.org.uk/sites/default/files/impact-builder/CapacityDevelopment.pdf](https://my.bond.org.uk/sites/default/files/impact-builder/CapacityDevelopment.pdf)





## CAPACITY DEVELOPMENT

## METHODS FOR EVALUATING CAPACITY DEVELOPMENT OUTCOMES & IMPACTS

### Outcome 5. Networks and alliances have been formed/ strengthened

Evaluation at this stage involves looking at the networks & alliances that have been formed/strengthened as a result of the project's actions. For example, alliances may have been formed with other NGOs, government institutions or with local community groups/networks.

Before evaluating the effect the project has had on networks it is crucial that you first clarify what is the main aim of the network is. E.g. strengthening communication with local or national government, promoting/strengthening advocacy work or promoting good practise in a particular sector.

Evaluations can be made using [Questionnaire surveys](#), administered to those within the network. Other options include completing a network health scorecard (See [Network health scorecard](#)) before and after the project. The partnerships & networks section of the [Organisational Capacity Assessment tool](#), used before and after the project, can also be applied in this context.

### Outcome 6. Conservation actions are implemented more effectively

Evaluation of this stage involves looking at whether improvements in capacity then led to subsequent changes in the delivery of conservation actions. Most capacity development actions are aimed at creating the conditions for further conservation actions,

which in many cases will not form part of the project. For example a project training park rangers to carry out more effective patrols will not be involved in ensuring that the skill delivered in the training are applied in other day to day management activities of the park.

This makes evaluating these outcomes/impacts beyond the reach of most small/medium-sized projects carrying out capacity development actions. However it may sometimes be possible, particularly if the capacity development action was targeting a specific practise or behaviour linked to a conservation threat, to evaluate whether or not the capacity delivered had an effect on the delivery of actions relating to that threat. In these cases a threat reduction assessment (See factsheet [Threat reduction scoring](#)) can be used to gauge the effectiveness of the delivery of the capacity delivered. Although care will need to be taken to ensure that any change is due to the capacity delivered by the project and not due to factors not due to the project.

#### Further reading

Capacity for Conservation: <http://capacityforconservation.org/>

M&E of Capacity Building, is it really that difficult?: <https://www.intrac.org/wpcms/wp-content/uploads/2016/09/Praxis-Paper-23-Monitoring-and-Evaluating-Capacity-Building-Nigel-Simister-with-Rachel-Smith.pdf>

PILAC – Manual on Training Evaluation: [http://www.jica.go.jp/project/cambodia/0601331/pdf/english/5\\_TrainingEvaluation.pdf](http://www.jica.go.jp/project/cambodia/0601331/pdf/english/5_TrainingEvaluation.pdf)



## Livelihoods & Governance



## LIVELIHOODS & GOVERNANCE

### SPECIFICALLY THIS MODULE COVERS:

#### What do we mean by livelihoods & governance?

#### What should I consider when evaluating livelihoods & governance outcomes and impacts?

#### Understanding how your project actions aim to change livelihoods & governance issues to benefit conservation

#### Methods for evaluating livelihoods & governance outcomes/impacts:

1. Uptake of new or improved practices/ livelihoods activities
2. Progress towards secure tenure or resource rights for communities
3. Governance arrangements give increased recognition/ respect
4. Community institutions have increased capacity
5. Well-being goals met
6. Damaging occupation/ livelihood abandoned or reduced

## Summary

This chapter contains methods for evaluating the outcomes and impacts of conservation projects attempting to improve stakeholder livelihoods and/or improve governance. Areas covered:

### FACTSHEETS & ANNEXES

- [Participatory Impact Assessment \(PIA\) methods](#)
  - [PIA Method 1: Before and after scoring](#)
  - [PIA Method 2: Proportional piling](#)
  - [PIA Method 3: Tally method](#)
  - [PIA Method 4: Matrix scoring](#)
  - [PIA Method 5: Before and after impact calendars](#)
- [Community Based Organisation Capacity Assessment](#)
- [Community Mapping](#)
- [Basic Necessities Survey \(BNS\)](#)
- [Participatory Governance Assessment](#)
- [Participatory photo evaluation](#)



## LIVELIHOODS & GOVERNANCE

### WHAT DO WE MEAN BY LIVELIHOODS & GOVERNANCE?

#### What do we mean by Livelihoods & Governance?

##### Livelihoods

Livelihoods are the means by which people seek to achieve their life's goals and other conditions which contribute to well-being (see Section 1). Understanding people's livelihoods is important to knowing how to evaluate a project's impact on the relationships that people have with their environment and the choices they make.

The 'Sustainable Livelihoods Approach' (SLA)<sup>4</sup> is one framework for understanding the complexity of people's livelihoods, and the impacts that conservation and development projects can have on different people's livelihoods and well-being.

A livelihood comprises the following elements:

- **Capabilities** are what people can do or what they can be – this is often strongly influenced by their entitlements;
- **Entitlements** refer to people's human rights, which include economic, social, cultural and political rights;
- **Assets** are the resources people have access to, and include both material and social resources;
- **Activities** are everything that people do with their capabilities and assets as they strive to achieve desired outcomes.

People require a range of assets to achieve positive livelihood outcomes. Natural resources are just one set of the assets on which livelihoods depend – if they are depleted or degraded, people's livelihoods will be threatened. No single category of assets on its own is sufficient for people to survive, to live fulfilled lives, and to achieve the varied livelihood outcomes that different people seek. This is particularly true for poor people, whose access to any given category of assets tends to be very limited.

People's livelihoods are usually influenced by external factors outside their direct control, and they are dependent on wider **policies, institutions and processes**. These affect the complex social, cultural, economic and political context within which people pursue their livelihood strategies, and they may constrain or broaden people's options. A livelihood is sustainable when it can cope with and recover from **trends, stresses and shocks**; can maintain and enhance its capabilities and assets, both now and in the future; and can do so without undermining the natural resource base of present and future generations.

**Livelihood strategies** are the combination of activities that people choose to undertake (or those that are left open to them when the opportunity to pursue others is constrained) in order to achieve their livelihood goals or outcomes. Livelihood outcomes are what people achieve as a result of their livelihood strategies. Different people will be motivated by achieving different livelihood outcomes – not all of us want to achieve the same things.

<sup>4</sup>DFID (1999) Sustainable Livelihoods Guidance Sheets, No.2 – Framework. DFID. <http://www.eldis.org/vfile/upload/1/document/0901/section2.pdf>



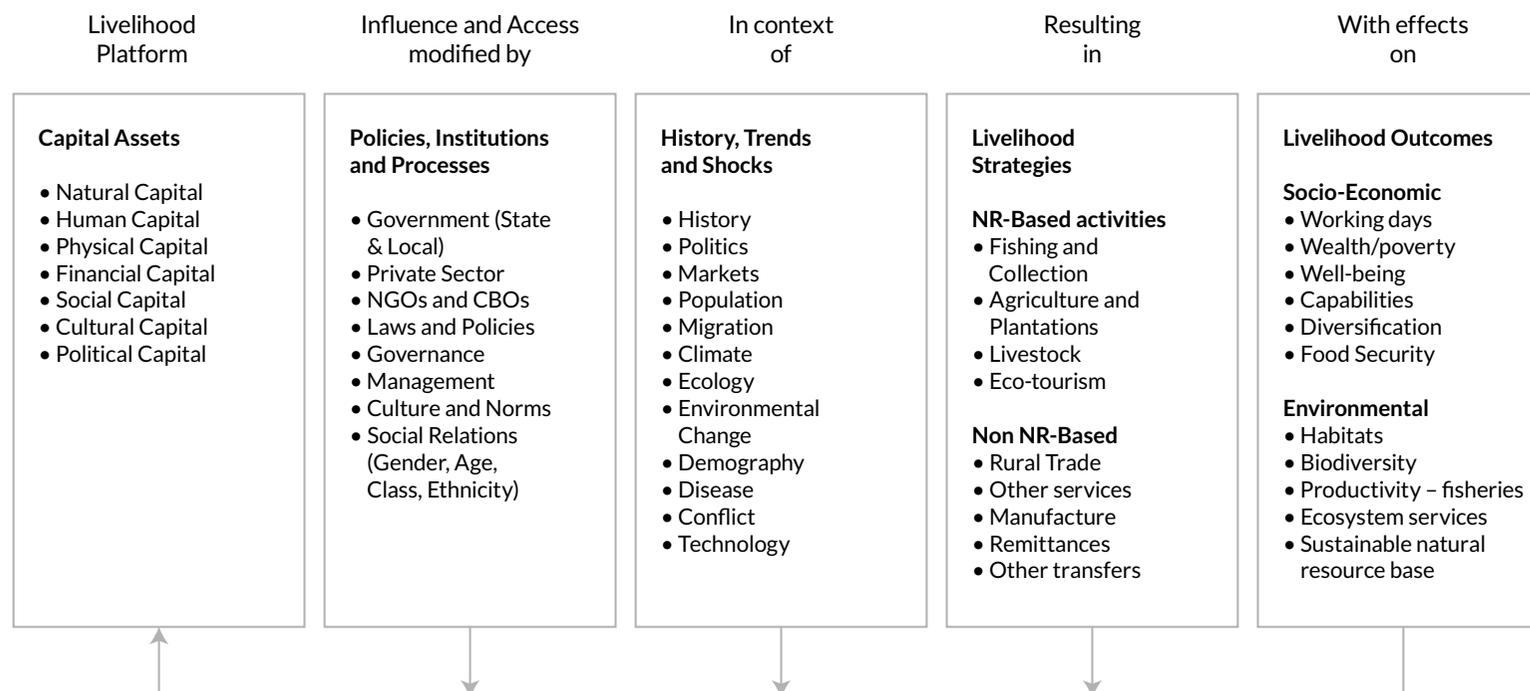
**FIGURE 1: COMPONENTS OF A LIVELIHOODS FRAMEWORK**



Figure 1: Components of a livelihoods framework. From: Bennett, N.J and Dearden, P. (2014). Why local people do not support conservation: Community perceptions of marine protected area livelihood impacts, governance and management in Thailand. [Marine Policy, Volume 44, Pages 107-116. doi:10.1016/j.marpol.2013.08.017](https://doi.org/10.1016/j.marpol.2013.08.017)

## LIVELIHOODS & GOVERNANCE

### WHAT DO WE MEAN BY LIVELIHOODS & GOVERNANCE?





## LIVELIHOODS & GOVERNANCE

### WHAT DO WE MEAN BY LIVELIHOODS & GOVERNANCE?

#### Governance

A wide range of stakeholders, with various levels of power and authority, may be involved in decisions on how land and natural resources are managed. Governance is the means by which society defines and makes decisions on goals and priorities, and the mechanisms and roles through which different stakeholders work to achieve them. It includes guiding principles, policies, laws, social norms, and the institutions, at all levels, involved in making decisions. These aren't only government or legal institutions – governance may involve informal institutional arrangements such as voluntary codes of conduct for private businesses.

Good governance has eight major characteristics (see box).

There is evidence that good governance helps to provide conditions for sustainable management of environmental resources (as well as delivering a range of other social and rights-related outcomes). For local communities, participation in decision-making can help ensure that their knowledge is acknowledged and valued, their needs are recognised, and that they have the power, rights and capacity to control and make decisions on use and access to land and resources.

#### CHARACTERISTICS OF GOOD GOVERNANCE

Good governance is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It assures that corruption is minimised, the views of minorities are taken into account, and that the voices of the most vulnerable in society are heard in decision-making.

UNESCO



Photo credit: John Bett

### What should I consider when evaluating livelihoods & governance outcomes and impacts?

#### Attributing outcomes and impacts to livelihood and governance actions



The main guidance on this is located in the section on [Choosing an evaluation design](#). The designs likely to be of most value to livelihoods & governance actions are:

- 1) [Participatory Impact Assessment](#) - This is an under-used approach in conservation, but for small projects aiming to evaluate complex interventions and likely to impact on a range of indicators (such as those involving livelihood or governance interventions), participatory designs can be effective, affordable and practical. This type of approach can be used to explore stakeholders' perspectives of the impact of the project on indicators selected by the project, or it can be used in a very open way to explore what matters locally and how the project has impacted more locally defined indicators. (see [Catley et al., 2013: http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf) for more information)
- 2) [Theory-based designs](#) - This approach depend on a very good understanding of the mechanisms which drive change in communities. It has potential limitations in that it is perhaps less likely to detect issues which project implementers are not aware of but which may be extremely important to local stakeholders.

- 3) [Before and after designs](#) - The most commonly applied design. However because of the complexity of social responses to interventions on livelihoods, and the long-term nature of projects and their impacts, there are real difficulties with using this approach to attribute change to the livelihoods & governance actions (although if conducted alongside a participatory design, these difficulties can be overcome to some extent).

## LIVELIHOODS & GOVERNANCE

### WHAT SHOULD I CONSIDER WHEN EVALUATING LIVELIHOODS & GOVERNANCE OUTCOMES AND IMPACTS?





## LIVELIHOODS & GOVERNANCE

### IDENTIFYING QUESTIONS AND INDICATORS FOR LIVELIHOODS & GOVERNANCE OUTCOMES/ IMPACTS

#### Identifying questions and indicators for livelihoods & governance outcomes/impacts

For some outcomes (e.g. uptake of new and improved resource management practices) the questions and indicators can be objective (i.e. they are based on fact, and aren't influenced by an individual's emotions, opinions, or personal feelings). For example, the simplest question would be one that focuses on measuring the number of people who have adopted a new/improved/more efficient resource management/harvesting practice. The type and scale of the project - and the interests of the users of the evaluation - will determine whether the questions and indicators need to be targeted at the community level, the household level or the individual level. In some cases it might be appropriate to disaggregate information even further and have questions and indicators that measure separately the different rates of uptake by, for example, women compared to men; richer people compared to poorer people; young people compared to elders etc. A judgement - depending on the nature of the intervention (and the types of people it targets) and the interests of the users of the evaluation - will be needed to determine exactly how to focus the more generic indicators given in Table 1.

For other outcomes (e.g. stakeholder well-being) the use of pre-defined indicators is likely to be problematic, since well-being relates to the perspective of the individual (their tastes, values, feelings, etc.) and different individuals/households will have different interpretations of what well-being means to them. In these cases it will be usually be necessary to ask project participants what changes in their lives they expect to occur (or if the project has already taken place, what changes have occurred).

This is true also of many livelihoods outcomes, as impacts of projects can be complex and indirect, and the choices people make will vary – e.g. a small-scale horticulture project may increase farm output, but increased production may be used to feed the family, sold to raise cash to pay for school fees, or stored to reduce risk in times of drought.

Well-being is conceptualised in three interacting dimensions: material/objective wellbeing; relational wellbeing; and subjective wellbeing (see [Section 1](#)); and these should form the basis of question and indicator selection. The Social Assessment for Protected Areas (SAPA)<sup>5</sup> initiative measures household well-being against the following indicators<sup>6</sup>:

- **food security (material well-being);**
- **assets, for example quality of housing, ownership of a radio or TV (material well-being);**
- **influence on decision-making at village level (relational well-being);**
- **feeling of security (subjective well-being);**
- **the question “how’s life?” (overall well-being).**

[Participatory Impact Assessment](#) methods ([PIA Methods 1-5](#)) typically include a stage during which indicators are described and refined with the participants.

<sup>5</sup>Franks, P and Small, R (2016). Social Assessment for Protected Areas (SAPA). Methodology Manual for SAPA Facilitators. IIED, London. <http://pubs.iied.org/14659IIED.html>.

<sup>6</sup>Projects use different indicators according to their objectives, expected outcomes, and the specific social context. For examples see the indicators in some of the following project documents:

- [http://awsassets.panda.org/downloads/wwf\\_livelihood\\_booklet\\_final\\_july8\\_08.pdf](http://awsassets.panda.org/downloads/wwf_livelihood_booklet_final_july8_08.pdf)
- [http://portals.wi.wur.nl/files/docs/ppme/LMP\\_Indicators.pdf](http://portals.wi.wur.nl/files/docs/ppme/LMP_Indicators.pdf)
- [http://careclimatechange.org/files/toolkit/CBA\\_Framework.pdf](http://careclimatechange.org/files/toolkit/CBA_Framework.pdf)

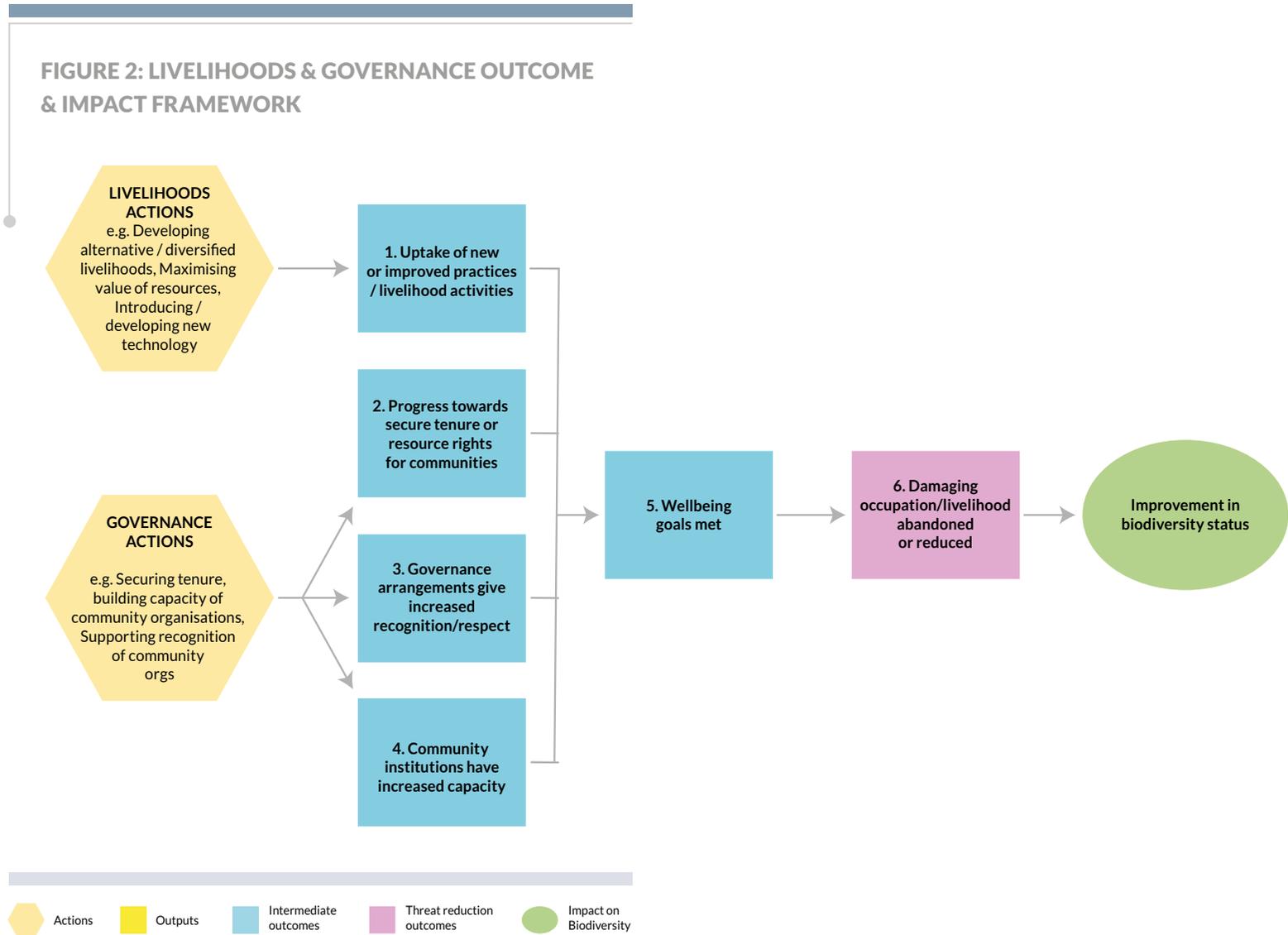
Understanding how your project actions aim to change livelihoods & governance issues to benefit conservation



LIVELIHOODS & GOVERNANCE

UNDERSTANDING HOW YOUR PROJECT ACTIONS AIM TO CHANGE LIVELIHOODS & GOVERNANCE ISSUES TO BENEFIT CONSERVATION

FIGURE 2: LIVELIHOODS & GOVERNANCE OUTCOME & IMPACT FRAMEWORK





## LIVELIHOODS & GOVERNANCE

### FRAMEWORK NOTES

#### Framework notes

Figure 2 illustrates some of the potential pathways by which actions addressing local livelihoods and governance of natural resources may help to achieve biodiversity impacts. This is a generic framework for such actions, and any individual small project is likely to address (or may need to address) only one or two of the pathways illustrated.

In all cases, the overall objective and impact that is sought is the same – to provide local people with the means to make their living and achieve their well-being objectives with less negative impact (and where possible more positive impact) on the targeted environment and its biodiversity.

You will need to think carefully about what you can assess to give an indication of the impact of your project. In the short-term it may only be possible to assess levels of uptake of new practices (outcome 1), or direct changes in tenure, institutional capacity or governance arrangements (outcomes 2, 3 and 4). You may also be able to assess the impact on people's well-being (outcome 5), since many impacts of this kind (especially those related to relational and subjective dimensions) may be achieved in the short-term. Material changes to well-being may take longer. In the longer term you should aim to assess changes in the behaviours that were causing harm to the targeted biodiversity or ecosystem (outcome 6); and ultimately to assess improvements in the conservation status of habitats or species. At whatever outcome stage in the framework you undertake your assessment, it is important to test (or be open about) the assumptions in your own Theory of Change (or equivalent) so that it is clear how (or whether) the livelihoods and well-being impacts have led, or are expected to lead, to conservation outcomes.





## LIVELIHOODS & GOVERNANCE

## METHODS FOR EVALUATING LIVELIHOODS & GOVERNANCE OUTCOMES/ IMPACTS

Table 1 summarises available methods for assessing the outcomes in the impact pathway in Figure 2, including methods for data collection.

**TABLE 1: EXAMPLES OF INDICATORS AND SUGGESTED DATA COLLECTION METHODS**

OUTCOME/IMPACT	EXAMPLE INDICATORS	METHODS
1. <b>Uptake of new or improved practices/ livelihood activities</b>	Number of groups/households/individuals carrying out new practices and/or using new technologies	<a href="#">Documentary evidence</a> <a href="#">Questionnaires</a> <a href="#">Key informant interviews</a> <a href="#">Participatory Impact Assessment (PIA)</a>
2. <b>Progress towards secure tenure or resource access rights for communities</b>	<p>Change in policy, rights or responsibilities – e.g. levels of devolution of authority and decision-making to local communities</p> <p>Formal recognition of customary tenure</p> <p>Number of groups/households/individuals with secure land title or secure resource rights</p> <p>Key (community) stakeholders engaged in processes to secure rights/tenure; a formally agreed action plan</p>	<a href="#">Participatory Impact Assessment (PIA)</a> <a href="#">Community mapping</a> <a href="#">Documentary evidence</a>
3. <b>Governance arrangements give increased recognition / respect</b>	<p>Change in selected indicators (individually or as part of a score sheet) relevant to the attributes of good governance, for example:</p> <ul style="list-style-type: none"> <li>o Number of people involved in decision making, and their level of influence</li> <li>o Accountability of representatives and effectiveness of reporting back</li> <li>o Inclusion of different members of society</li> <li>o Effective and fair enforcement of laws</li> </ul>	<a href="#">Community or focus group meetings; (supplemented by documentary evidence)</a> <a href="#">Participatory Governance Assessment</a> <a href="#">Questionnaires</a>





## LIVELIHOODS & GOVERNANCE

### METHODS FOR EVALUATING LIVELIHOODS & GOVERNANCE OUTCOMES/ IMPACTS

TABLE 1: EXAMPLES OF INDICATORS AND SUGGESTED DATA COLLECTION METHODS CONTINUED

OUTCOME/IMPACT	EXAMPLE INDICATORS	METHODS
4. Community institutions have increased capacity	Community institution has key organisational capacity requirements for sustainable NRM – this will vary according to the context (see capacity module). Capacity may be assessed against a suite of indicators (e.g. using tool for Organisational Capacity Assessment) or in relation just to the particular dimension(s) addressed by the project.	<a href="#">Community Based Organisational Capacity Assessment</a>  <a href="#">Participatory Impact Assessment (PIA)</a>
5. Well-being goals met	Well-being has material, relational and subjective dimensions. These are very context, project, and culture specific (and may also change over time). Specific indicators need to be developed with the community (see above). For example, they may include: <ul style="list-style-type: none"> <li>o Number of meals skipped by an individual in the previous week (food security)</li> <li>o Number of households with an effective strategy for coping with unexpected shock</li> <li>o Feelings of security regarding access and resources (e.g. land) in the next 10 years</li> <li>o Number of person-days of employment created</li> <li>o Net gains in income (per person/day) and number of local beneficiaries</li> </ul>	<a href="#">Participatory Impact Assessment (PIA)</a>  <a href="#">Basic Necessities Survey (BNS)</a>  <a href="#">Questionnaires</a>  <a href="#">Focus groups</a>  <a href="#">Direct observation (e.g. of housing quality)</a>  <a href="#">Documentary evidence</a>
6. Damaging occupation/ livelihood abandoned or reduced	Number of groups/households/individuals abandoning or reducing damaging practices	<a href="#">Participatory Impact Assessment (PIA)</a>  <a href="#">Questionnaires</a>  <a href="#">Direct observation</a>  <a href="#">Threat reduction scoring</a>





## LIVELIHOODS & GOVERNANCE

### OUTCOME 1. UPTAKE OF NEW OR IMPROVED PRACTICES/ LIVELIHOODS ACTIVITIES

#### Outcome 1. Uptake of new or improved practices/ livelihoods activities

Evaluation of uptake involves looking at the extent to which a particular practice or livelihood activity that has been promoted by the project has been taken up by the project's target audience.

Projects might adopt one or more of the following approaches:

- Providing an alternative resource to the one that is being exploited, for example by developing fish ponds as an alternative to lake fishing.
- Providing alternative occupations which substitute for the income obtained from unsustainable resource use.
- Adding to or enhancing the value of the resource or natural habitat to local communities, so that they are incentivised to protect it and manage it sustainably, e.g. through development of ecotourism, or providing new markets for resources so that communities benefit from their conservation – e.g. payments for ecosystem services.
- Promoting the adoption of technologies which support more efficient, less damaging use of resources. Examples include fuel-efficient stoves, technologies that reduce post-harvest losses such as drying or freezing of fish or solar-drying of forest mushrooms.

A simple method is to use [documentary evidence](#) (E.g. Project records, direct and indirect observation surveys) or [direct](#)

[observation surveys](#) to verify whether, and the extent to which, a particular practice has been taken up.

Another simple method is to use a [questionnaire survey](#) at household or individual level to assess the level of uptake. A simple 'yes/no' response to a question asking about adoption of the new activity will provide evidence of impact. If information is disaggregated according to one or more socio-economic variables (age, gender, level of education, wealth, household size, etc.) this will help you understand how the introduced activity has been adopted, and show the way to increase levels of adoption in future initiatives. Providing opportunities for qualitative responses (e.g. regarding the reasons for uptake) will provide additional information relevant to understanding why your project has or has not had the impact you expected.

See the [Basic Necessities Survey](#) (BNS factsheet for an example of a household survey template with the kind of questions you could include to assess uptake under a programme to introduce fuel-efficient stoves to improve post-harvest smoking of fish and reduce collection of fuelwood.

[Participatory Impact Assessment](#) (PIA) methods can be used very effectively to compare before/after situations, and they use the community's judgement to attribute uptake to the project. In addition to looking at whether uptake has occurred (yes/no) these can also include questions looking at why uptake has/has not happened (e.g. looking at motivation, factors limiting uptake, etc.) and whether there is an expectation of any continuation of uptake in the future.

[Key informant interviews](#) can also be used to evaluate uptake.





## LIVELIHOODS & GOVERNANCE

### OUTCOME 2. PROGRESS TOWARDS SECURE TENURE OR RESOURCE ACCESS RIGHTS FOR COMMUNITIES

#### Main issues:

- **Documentary evidence:** Try to make sure that the observations/documents are independently verifiable. Project reports and records may suffice if alternatives aren't available, but records kept by a third party are preferable.
- **Direct observation surveys:** Not all uptake will be immediately and easily visible, especially if it takes place inside the home, or within closed family compounds (e.g. uptake of fuel efficient stoves). Choose this method for changes that can be easily observed.
- **Questionnaire surveys:** If your project has targeted a specific sector of the community (e.g. hunters, women, ethnic minorities) then select your sample from the target group – you don't need to take a random sample from the entire community.
- **Key informant interviews:** Relying on key informants for a quantitative assessment of the level of uptake may be unreliable, especially for medium-sized projects or dispersed/large communities. However, key informants can provide useful insights into who (which social groups in a community) has or has not taken up the livelihood activity, what the barriers are, whether the livelihood has been adapted, etc.
- **Participatory Impact Assessment:** PIA methods can be used very effectively to compare before/after situations, and they use the community's judgement to attribute uptake to the project.

#### Outcome 2. Progress towards secure tenure or resource access rights for communities

Secure tenure and rights of access to and use of land and resources can provide people with an incentive to protect or manage these resources sustainably in the long term.

Evaluating security of tenure or resource rights generally requires a written, published record showing who (community or individuals) owns the land or has rights of access and rights to harvest or otherwise use resources. Evaluation of these outcomes generally involves the use of [documentary evidence](#).

[Participatory Impact Assessment \(PIA\)](#) (e.g. participatory mapping) can also be used to assess changes in land ownership or in rights to resources.

#### Main issues:

*Documentary evidence:* To assess project impact you will probably be looking for new documents assigning tenure or resource rights (i.e. dated after your project start date). Even where such documents exist you will need to use interviews with key informants to gather evidence that changes are attributable to the project. It may take time to secure rights to land and resources, and especially for small projects, the main impact of the project may have been simply to initiate a process. Impact can be assessed through documentary evidence of this process – creation and membership of committees, records of meetings, interim decisions, etc.



### Outcome 3. Governance arrangements give increased recognition/respect



## LIVELIHOODS & GOVERNANCE

### OUTCOME 3. GOVERNANCE ARRANGEMENTS GIVE INCREASED RECOGNITION/ RESPECT

Recognition of the legitimacy of community institutions, devolving management responsibility to them and/or involving them in management decisions at an appropriate level, helps to ensure that resources are managed sustainably and in partnership (outcome 3).

Your project may be aiming to address one or several characteristics of governance. Table 2 below describes some possible indicators and methods which could be used to assess change relating to eight commonly recognised characteristics of good governance. These may apply at landscape level (e.g. land use decisions within an administrative district), site level (e.g. decision-making in a protected area) or community level (e.g. how a community council makes decisions on resource use and access). Governance could be assessed against just one of the characteristics, or against combination of them that is relevant to the specific context.

The [Participatory Governance Assessment](#) method uses a score card to assess governance of an organisation in relation to a number of these attributes. If repeated (before and after a project) the results can be displayed graphically to show change in governance, and interviews (e.g. with a focus group) can discuss the reasons for any significant changes and identify those attributable to the project.

#### Main issues:

- Governance is a multi-dimensional concept, and perceptions of what is acceptable or good governance can be culturally very specific. For example, in some cultures patronage is normal and expected; religious beliefs or social convention may exclude the participation of women; and it may be disrespectful to challenge top-down decisions made by traditional leaders. Many of the indicators of governance also require a subjective assessment, and the assessors' own cultural background is likely to affect the way they view and report outcomes. It may be important to have the intended changes and their indicators clearly articulated at the start of the project, and to involve the community and affected stakeholders in this.





## LIVELIHOODS & GOVERNANCE

### OUTCOME 3. GOVERNANCE ARRANGEMENTS GIVE INCREASED RECOGNITION/ RESPECT

**TABLE 2: POSSIBLE INDICATORS AND METHODS FOR MEASURING GOVERNANCE OUTCOMES/IMPACTS**

ATTRIBUTE OF GOOD GOVERNANCE	POSSIBLE INDICATORS	MEASURES / SOURCES OF INFORMATION / METHODS
PARTICIPATIVE	Change in levels of participation (in decision-making processes) by, for example: <ul style="list-style-type: none"> <li>women and men;</li> <li>minorities; those who are vulnerable.</li> </ul>	<p><a href="#">Documentary evidence</a> (e.g. of meetings and participation, e.g. attendance lists; minutes – who spoke?).</p> <p><a href="#">Direct observation</a> (e.g. of participation levels at meetings - who was present? Who spoke? How was the meeting organised - seating arrangements; choice of chairperson etc.? What information was made available? What language was used? How was the meeting documented and by whom?).</p>
	The degree to which civil society participation in decision-making is effectively organised	<a href="#">Documentary evidence</a> (e.g. of consensus-building among civil-society forums).
	Change in the extent to which indigenous and local knowledge is respected and applied to management decision-making.	<a href="#">Documentary evidence</a> (e.g. of management plans; management decisions and their acknowledgement, application of local knowledge).
CONSENSUS-ORIENTED	Change in the extent to which the points of view of different stakeholders are effectively mediated.	<a href="#">Documentary evidence</a> : Likely to be subjective – e.g. based on records of meetings, decision-making processes, and the basis/justification for any decisions.
ACCOUNTABLE	Change in the extent to which institutions and representatives (government and CBOs) report back to their members and constituencies.	<p><a href="#">Documentary evidence</a></p> <p><a href="#">Questionnaires.</a></p> <p><a href="#">Focus groups.</a></p>



## LIVELIHOODS & GOVERNANCE

### OUTCOME 3. GOVERNANCE ARRANGEMENTS GIVE INCREASED RECOGNITION/ RESPECT

TABLE 2: POSSIBLE INDICATORS AND METHODS FOR MEASURING GOVERNANCE OUTCOMES/IMPACTS CONTINUED

ATTRIBUTE OF GOOD GOVERNANCE	POSSIBLE INDICATORS	MEASURES / SOURCES OF INFORMATION / METHODS
<b>TRANSPARENT</b>	Change in the availability, frequency, adequacy and accessibility (easily understandable forms and media, appropriate language) of information to those who will be affected by decisions and their enforcement, where applicable.	<p><a href="#">Documentary evidence</a>: Subjective assessment of available information on decisions and the decision-making process (language, media, accuracy).</p> <p><a href="#">Questionnaires &amp; Focus groups</a> (e.g. to assess who received information, who understood information, who felt information was adequate).</p>
<b>RESPONSIVE</b>	Change in the time taken for institutions to respond or act (e.g. on requests for information; requests for intervention).	<p><a href="#">Documentary evidence</a>.</p> <p><a href="#">Questionnaires</a>.</p>
<b>EFFECTIVE AND EFFICIENT</b>	Change in the level of resources (e.g. time, funding, materials) needed to produce desired results (resources are used sustainably; equipment is well maintained and lasts longer; materials are re-used and recycled).	<p><a href="#">Documentary evidence</a>: Where records are kept, use these (e.g. financial records, procurement records, maintenance and servicing records for equipment). Otherwise base on interviews with key informants.</p>
<b>EQUITABLE AND INCLUSIVE</b>	Change in the extent to which all members of society feel that they have a stake in the community, and feel included.	<p><a href="#">Questionnaires</a></p> <p><a href="#">Focus groups</a></p>
<b>RULE OF LAW</b>	<p>Change in the extent to which laws are enforced impartially.</p> <p>Good roles and practices in decision-making process, e.g. adoption of key principles for decision-making process.</p> <p>Change in the extent to which full human rights, particularly those of minorities, are protected.</p>	<p><a href="#">Focus groups</a>.</p> <p><a href="#">Questionnaires</a>.</p> <p><a href="#">Participatory Impact Assessment</a>.</p>





## LIVELIHOODS & GOVERNANCE

### OUTCOME 4. COMMUNITY INSTITUTIONS HAVE INCREASED CAPACITY

#### Outcome 4. Community institutions have increased capacity

Where communally-shared property or resources are concerned, the capacity of community institutions for regulating, managing and policing access is key to achieving positive outcomes and impacts.

Evaluation of the capacity of community institutions involves either the use of a capacity assessment tool or evaluation of an organisation in relation to specific dimensions of capacity that have been the focus of the project (e.g. financial management procedures or legal status). See the [factsheet: Community-based Organisational Capacity Assessment](#) for an example of a relatively simple tool that can be used to evaluate changes in the capacity of a community-based organisation.

Use of the tool could also be combined with a [Participatory Impact Assessment \(PIA\)](#), e.g. at a group meeting, to score an institution's capacity before and after the project and explore the reasons for any changes, and whether they can be attributed to the project.

#### Main issues

- Community-based Organisational Capacity Assessment largely depends on self-assessment by the organisation. However, many of the dimensions of organisational capacity can (and ideally should) be verified through [documentary evidence](#) – e.g. minutes of meetings, membership lists, bank accounts, audits, legal registrations, business plans and organisational strategies, observed equipment and office space, etc.





## LIVELIHOODS & GOVERNANCE

### OUTCOME 5. WELL-BEING GOALS MET

#### Outcome 5. Well-being goals met

The concept of livelihoods is concerned with how people make a living, including the assets that they have available (e.g. land, equipment, education, social networks and employment). Their decisions are affected by their well-being objectives – their vision of what constitutes a “good life”. For some, this may be a high income, for some it may be the safety and security of their children, and for others it may be about belonging to social and cultural networks. People’s well-being objectives will affect their decisions about how they use natural resources, and this in turn may affect the outcome of projects that are concerned with livelihoods.

The dimensions of well-being that are relevant will vary from place to place, and so the aspects that need to be assessed for a given project will depend on the context. Relevant well-being dimensions may be suggested by the project’s Theory of Change.

The main purpose of a project that addresses people’s livelihoods is to bring about changes in the well-being of individuals, households or the wider community, in such a way that they cease or reduce activities that are damaging the environment (or adopt activities that benefit the environment). Well-being has been described as having three main dimensions (see Conservation and impacts on human well-being in Section 1), and within each dimension there may be many contributing factors, often specific to a particular community or household.

The design stages of your project should have explored this with the community, in order to identify:

- whose activities are damaging the environment/

biodiversity (so that the project can be effectively targeted);

- which well-being dimensions need to be addressed (through livelihoods initiatives) to allow (or encourage) the damaging activities to be stopped.

This will help you to identify appropriate indicators, and to select suitable methods for assessing impact. More than one method may be required, depending on the specific indicator(s) chosen. Potential methods include [Participatory Impact Assessment \(PIA\)](#), [Basic Necessities Survey \(BNS\)](#), [questionnaires](#), [focus groups](#), [direct observation](#) and [documentary evidence](#) e.g. (e.g. clinic records; school attendance; stores and supplies sales).

#### Main issues:

- Focusing on certain target villages or specific livelihood groups within a community may be the most direct and obvious approach for maximising conservation value from the project (and for impact assessment); but it is also important to assess any indirect impact on the wider community. For example, if the distribution of well-being support and benefit is perceived to be inequitable, this may lead to a breakdown in community relationships, which could in-turn have an impact on governance of natural resources. Increasing the value and marketability of natural resources may lead to appropriation of benefits by a minority (“elite capture”) and marginalisation or exclusion of traditional users. Efforts should be made to assess these less tangible and more indirect impacts of livelihood and well-being projects.



## LIVELIHOODS & GOVERNANCE

### OUTCOME 6. DAMAGING OCCUPATION/ LIVELIHOOD ABANDONED OR REDUCED



#### Outcome 6. Damaging occupation/livelihood abandoned or reduced

Evaluation at this outcome stage involves assessing and comparing the levels of damaging activity before and after the project intervention. Where feasible, [direct observation surveys](#) may be the most reliable method as they overcome problems such as people's unwillingness to reveal participation in illegal activity. The module on [species & habitat management](#) describes methods for assessing levels of some of the most common damaging activities, including hunting (by snares, firearms and poisons), live trapping, agricultural encroachment, overharvesting of non-timber forest products, disturbance, pollution, and timber and fuelwood extraction.

Aside from direct observation, you can use [questionnaires](#) to assess levels of damaging or illegal use by individuals. [Participatory Impact Assessment \(PIA\)](#) methods can also be used to investigate people's livelihood strategies, and the contribution being made by the damaging activity, at community level.

#### Main issues:

- Although you may have identified a particular target group for your livelihoods intervention (e.g. households clearing forest for farmland, a sector of the community involved in hunting or trapping, etc.) your survey may need to sample from the wider community. This is to assess whether those who cease hunting are not just being replaced by “new” farmers/hunters etc. with no net impact on the damaging activity.
- Information on illegal or anti-social activities may be very sensitive, and people may not give honest answers about these issues in responses to questionnaires or in focus group discussions, even if they are interviewed in private and if questionnaires are anonymised. Where this difficulty is likely or is suspected, direct observation methods, expert opinion and people's perceptions may give more accurate results.

These methods can only be used to assess impact on damaging and/or illegal activities if you are confident that people are willing to discuss matters freely and honestly. Ideally, in order to assess whether your project has been the cause of any changed behaviour, you need to include questions about uptake of the introduced livelihood activity, changed governance and/or changes in well-being. These questions could all be included in the same questionnaire (in different sections).



## Policy

### Summary

This chapter addresses methods for evaluating the outcomes and impacts of conservation projects attempting to influence policy, in order to contribute to improvements in the conservation status of biodiversity/ecosystem/habitat targets. Areas covered include:



## POLICY

### SPECIFICALLY THIS MODULE COVERS:

#### What do we mean by policy outcomes & impacts?

#### What should I consider when evaluating policy outcomes & impacts?

#### Understanding how your project actions aim to change policy to benefit conservation targets.

#### Data collection methods for evaluating policy outcomes & impacts:

1. Improved policy influence<sup>7</sup> in government or multilateral institutions;
2. Improved policy influence in private sector;
3. Environmental movement strengthened;
4. Evaluating implementation of policy and associated practice.

#### Further reading

### FACTSHEETS & ANNEXES

- [Media tracking](#)
- [Media scorecards](#)
- [Observation checklist for documenting meetings](#)
- [Policymaker ratings](#)
- [Bellwether methodology](#)
- [Civil society tracking tool](#)

<sup>7</sup>Influence can include: developing, changing, adopting, blocking, defending or implementing policy. These objective categories build on those used in WWF (2009a): "Resources for Implementing the WWF Project and Programme Standards: Monitoring Advocacy Work", January 2009.





## POLICY

### WHAT DO WE MEAN BY POLICY OUTCOMES & IMPACTS?

#### What do we mean by policy outcomes & impacts?

The term “policy” is often used to capture a diverse range of instruments (e.g. laws, regulations, strategies, plans, programmes, budgets, declarations, procedures, multilateral environmental agreements).

When evaluating policy outcomes & impacts it is crucial first to clarify the policy/ advocacy objective(s) which will outline who exactly (i.e. individuals, groups, organisations, policy fora) the project is trying to have impact on.

In doing so, it is important to remember that policy/decision makers are not a homogenous group, and that policy/decision-making happens at multiple levels (e.g. international, regional, national and/or local). Without clarifying this beforehand, an evaluation that allows you accurately to describe progress towards the desired impact(s) will be impossible.

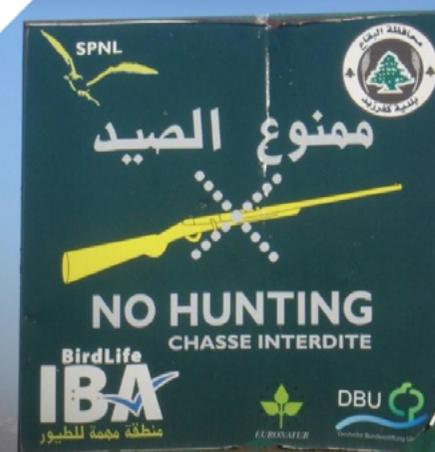


Photo credit: SPNL

## What should I consider when evaluating policy outcomes & impacts?

### Main challenges

**Attribution** - It can be very difficult to determine links between policy influencing actions, changes in policy and any subsequent changes relating to conservation targets.

- Multiple factors may have an influence on policy.
- Lack of a credible counterfactual means that traditional matching evaluation designs will seldom be applicable (although key informant interviews or wider stakeholder questionnaires/surveys can provide this in some form).
- Policymakers may be unwilling to admit that their decisions were influenced by one group.
- Policy influence is highly complex, non-linear and can be irrational - with policies shaped by a multitude of interacting forces and actors. This makes it very difficult to predict with confidence the likely consequences (and the timeframe) of a set of activities on policy development and implementation.
- Evaluation designs using control groups are usually unsuitable for policy influencing work, as it is difficult to establish a plausible counterfactual because of the specificity of policy systems (and also the difficulty to separate a 'control group' geographically from the policy impact or 'sphere of influence').

- It may also be contentious to attempt overtly to affirm attribution/influence over a particular policy process or outcome. Even the terminology itself can put advocacy/policy partners and targets off. It may be best to use alternative terms or approaches, such as "contribution assessment", "partnership" or "effectiveness".

**Timeframes can be unpredictable** - Changes in policies, laws, regulations and their enforcement can take years (and the time required for those policies themselves to have impact on the conservation targets concerned may be much longer still), but evaluation data are often required before goals are achieved. Similarly strategies and milestones may shift with the dynamic external policy context.

**Contribution is more likely than attribution** - This is partly because of the complexity of the environments that policy outcomes occur in, but also because policy influence is often most effectively achieved through alliances, coalitions and networks.

**Hidden decision-making processes may be used by bureaucracies and politicians** - This creates disincentives for sharing good practice: if one organisation/community of practice found the "magic bullet" to influence and shared it, then they would be faced with greater competition for influence.



## POLICY

# WHAT SHOULD I CONSIDER WHEN EVALUATING POLICY OUTCOMES & IMPACTS?





## POLICY

### WHAT CAN SMALL/ MEDIUM-SIZED PROJECTS DO TO EVALUATE POLICY OUTCOMES AND IMPACTS EFFECTIVELY?

#### What can small/medium-sized projects do to evaluate policy outcomes and impacts effectively?

**Use a theory-based approach** - The specific challenges associated with attribution mean that [theory-based evaluation designs](#) are often the most feasible for projects with policy components. Developing a robust [Theory of Change](#) (or equivalent) can be particularly useful, as this forms a road-map of how the policy influencing activities are envisaged to result in the desired changes in policy, which then allows you to identify the points where data need to be collected, and acts as a framework to explain how observed changes may or may not result in subsequent policy and/or conservation outcomes and impacts. These approaches can be complemented by information from [Participatory Impact Assessments](#) and/or [interviewing key informants](#).

**Focus on the process, not just the intended result** - Policy evaluation typically focuses on the journey rather than just the destination. In addition to demonstrating progress, this approach reduces the risk that the evaluation will conclude that the whole advocacy effort was a failure if advocacy goals are not achieved within the project's timeframe. It is also likely that unintended outcomes may be identified, particularly if the external policy environment has altered significantly since the start of the project. Sometimes original policy/advocacy goals may need to be reviewed in light of changing contexts, as they may no longer be considered viable or to be the most effective approach.

#### Focus more on qualitative indicators, rather than quantitative -

These may need to be “proxy” indicators (i.e. providing an indirect measure or sign of change), since results of policy actions are often less tangible than others.

It is important to consider what the project's main contribution is intended to be, and to focus assessment on that. Therefore, standard methods that identify an independent variable and a specific set of dependent variables likely to affect change are not often well suited for measurement of advocacy and policy work.

**Be flexible** - As policy work is highly complex and is influenced by multiple interacting forces/actors, policy influencing strategies need to evolve over time, and therefore data collection and interpretation needs to be flexible to adapt to this.



Understanding how your project actions aim to change policy to benefit conservation targets

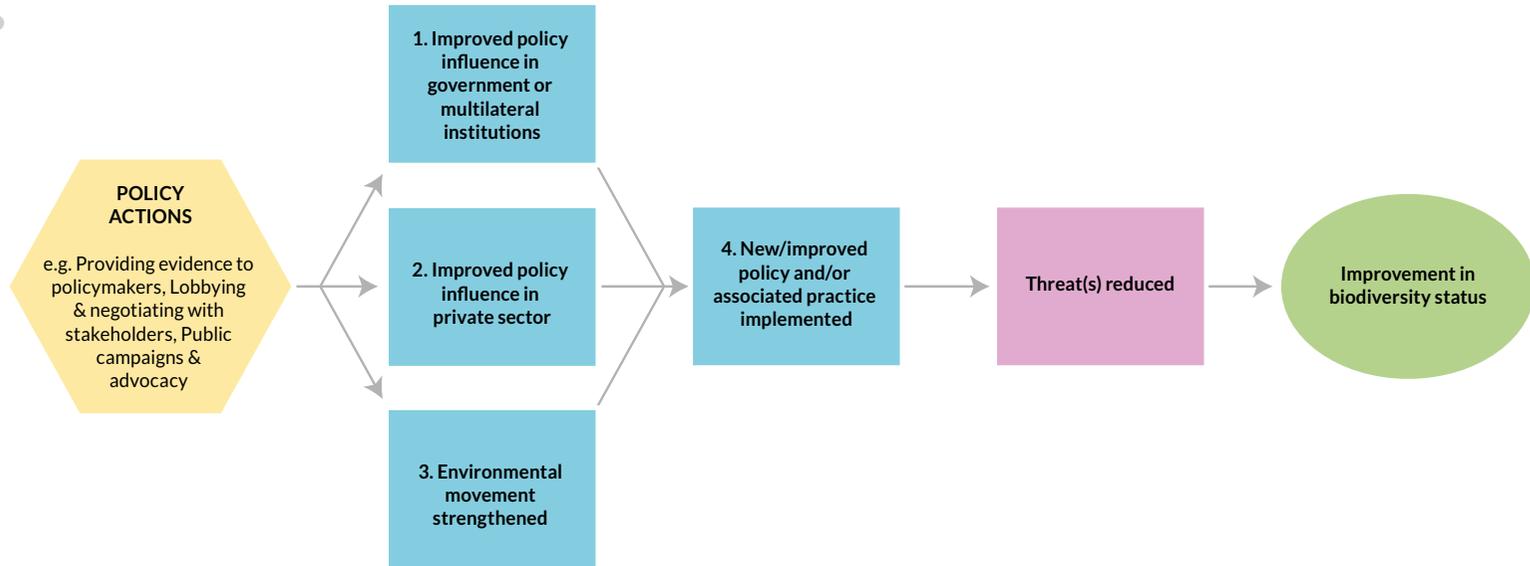
The framework below illustrates how actions focused on policy may lead to a positive change in the conservation target.



POLICY

UNDERSTANDING HOW YOUR PROJECT ACTIONS AIM TO CHANGE POLICY TO BENEFIT CONSERVATION TARGETS

FIGURE 1: POLICY OUTCOMES & IMPACTS FRAMEWORK





## POLICY

## FRAMEWORK NOTES

### Framework notes

Outcome 1 refers to actions where a group (or groups) work to influence laws, strategies, programmes or budgets at national or local government levels, and/or in intergovernmental processes that influence such national/local level policy (through declarations, statements/communiqués, decisions, resolutions, etc.).

Outcome 2 refers to actions that focus on influencing the policies and the institutional behaviour of the private sector. This may involve work to encourage environmentally friendly practices as part of sustainable development.

Specific actions for both outcomes 1 and 2 are likely to involve a combination of providing evidence and advice to key influencers, carrying out public campaigns and advocacy, and lobbying and negotiating.

Outcome 3 relates to actions to increase the capacity of the environmental movement to influence policy processes, to hold decision-makers to account, to present options to policy-makers and to keep the public informed of shortcomings. Actions include increasing capacity to work together effectively in networks/alliances/coalitions at the local, national and international levels.

Outcome 4 relates to evaluating the implementation of policy and associated practice that has been adopted/changed/blocked as a result (or partly as a result) of the project. In many cases, policies are already in place but have not yet been fully implemented and evaluated. Actions aimed at supporting the evaluation of policies or at building capacity for implementation would be included in this category.





## POLICY

METHODS FOR  
EVALUATING  
POLICY  
OUTCOMES &  
IMPACTS

Informed by: WWF (2009a): "Resources for Implementing the WWF Project and Programme Standards: Monitoring Advocacy Work", January 2009.

**TABLE 1: SUMMARY OF METHODS FOR ASSESSING THE OUTCOMES AND IMPACTS OF PROJECT ACTIVITIES RELATED TO POLICY INFLUENCE**

OUTCOMES/ IMPACT	EXAMPLE INDICATORS	METHODS
<b>1. Improved policy influence in government or multilateral institutions</b>	<ul style="list-style-type: none"> <li>Engagement of key influencers in development of action plan</li> <li>Changes in rhetoric</li> <li>Changes in wording of policies or conventions</li> <li>Ratification of conventions</li> <li>Changes in legislation (or legislation maintained, or negative changes prevented)</li> <li>Changes in budget allocations</li> <li>Monitoring procedures in place for the policy</li> </ul>	<a href="#">Media tracking</a> <a href="#">Media scorecard</a> <a href="#">Documentation of meetings</a> <a href="#">Policymaker ratings</a> <a href="#">Key informant interviews</a> <a href="#">Focus groups</a>
<b>2. Improved policy influence in private sector</b>	<ul style="list-style-type: none"> <li>Changes in particular company practices/ policies or engagement/ rhetoric on the issue</li> <li>Changes in sector-wide consensus and Codes of Practice</li> <li>Finance sector investment in the sector/company change</li> <li>Introduction of labelling or certification systems</li> <li>Environmental and social impacts of the above, e.g. market share of sustainable products and resulting impact</li> <li>Transparency and impact of change (e.g. triple bottom line introduced in company accounts, natural capital accounting, public auditing and reporting)</li> </ul>	<a href="#">Bellwether methodology</a> <a href="#">Questionnaires</a> <a href="#">Key informant interviews</a>
<b>3. Environmental movement strengthened</b>	<ul style="list-style-type: none"> <li>Increase in NGO advocacy and policy skills, capacity, knowledge and effectiveness</li> <li>Greater synergy of aims/activities in environmental networks/ movements</li> <li>Increase in collaboration, trust, unity and sustainability between movement members</li> <li>Increase in size of movement (number of organisations, size of organisations)</li> </ul>	<a href="#">Civil Society Tracking Tool</a> <a href="#">Network health scorecard</a>
<b>4. New/improved policy and/or associated practice implemented</b>	<ul style="list-style-type: none"> <li>Change in decision-makers' awareness of pros and cons of existing policies and practices</li> <li>Change in capacity of government officials to implement policies</li> <li>Extent to which policies are implemented</li> <li>Extent to which implemented policies achieve the desired effect</li> <li>Environmental and social impacts of implemented policies</li> </ul>	<a href="#">Key informant interviews</a> <a href="#">Policy tracking</a>

The numbers and corresponding notes below relate to the outcomes in Table 1 above. See the PRISM Species/Habitat Management chapter for methods for evaluating the change in the target biodiversity outcome.



## POLICY

### OUTCOME 1. IMPROVED POLICY INFLUENCE IN GOVERNMENT OR MULTILATERAL INSTITUTIONS

#### Outcome 1. Improved policy influence in government or multilateral institutions

This involves looking at the processes by which your project is working to influence public decision-making, either by targeting governments (local, regional or national) or multilateral institutions (organisations formed between several nations to work on issues that relate to all the countries involved, for example the EU, OECD or UN agencies). These processes could include laws, the creation of programmes, allocation of resources and implementation.

#### Potential data collection methods

The most basic data collection method is simply to keep a record (for example a written log, email inbox or database) where comments, anecdotes and examples of “uptake” or influence are recorded. For example the log could track: public messaging; monitoring; parliamentary committee meetings; key individuals’ participation; and tracking of key phrases/rhetoric throughout. This would be essentially a collection of largely informal and anecdotal evidence about the use of research or advice, which can provide useful ongoing monitoring and contribute to deeper analyses once a number of instances or patterns are accumulated.

[Media tracking, media scorecards](#) and [observation checklists](#) are all useful data collection methods that can be used to track change and inform the judgements you make in relation to this outcome.

Periodic [key informant interviews](#) or [focus groups](#) with relevant experts, decision-makers and other key stakeholders could also be used.

At a more advanced stage, [policymaker ratings](#) can be used to gauge political will on a particular policy issue or in relation to proposals under discussion among a defined group of policymakers (e.g. legislature, council).





## POLICY

## OUTCOME 2. IMPROVED POLICY INFLUENCE IN THE PRIVATE SECTOR

## OUTCOME 3. ENVIRONMENTAL MOVEMENT STRENGTHENED

### Outcome 2. Improved policy influence in the private sector

The focus here is on looking at the effect of the project on the policies, practices and institutional behaviour of the private sector. It may involve work to change particular bad practice, work to encourage the introduction of environmental monitoring and policies, or “rewards” or incentives for good practice such as labelling/certification schemes.

Possible data sources include: reviews of company reports/ data; tracking public rhetoric (e.g. public and company media); participation, rhetoric and commitments in partner meetings (e.g. roundtables), as well as reviewing secondary literature (e.g. company, sector or public records; consumer groups/reports, such as FSC (Forest Stewardship Council); industry association reports and on-the-ground evidence of implementation (e.g. Environmental Impact Assessments).

[Key informant interviews](#), [questionnaires](#) and [bellwether methodology](#) are all relevant methods for monitoring and reviewing/evaluating this type of outcome.

### Outcome 3. Environmental movement strengthened

Here evaluation is focused on increasing the capacity of the environmental movement: to influence the policy process; to monitor government enforcement of existing laws and policies; to keep the public and policy makers informed of shortcomings; and to demand transparency and accountability. It also includes increasing capacity to work together effectively in networks/alliances/coalitions at the local, national and international levels.

Sources of data include: records of action taken (e.g. description/ minutes of meetings or engagement in policy processes); numbers of proposals made to power holders, and numbers of approaches solicited from power holders and the media.

The [Civil Society Tracking Tool](#) and [network health scorecards](#) are relevant tools that can be used to collect data to inform evaluations.



#### Outcome 4. New/improved policy and/or associated practice implemented



### POLICY

## OUTCOME 4. NEW/IMPROVED POLICY AND/ OR ASSOCIATED PRACTICE IMPLEMENTED

The focus here is on evaluating the effect of the project's policy action(s) on the adoption, modification and subsequent implementation of targeted policies. Evaluating outcomes and impacts at this stage is a significant challenge for small/medium-sized conservation projects due to the length of time that it takes for these outcomes & impacts to become measurable.

Some countries, however, have online searchable databases that can be used to track the adoption and implementation of policies. [Key informant interviews](#) with relevant decision makers can also sometimes be used to track the process of changes in policy, although be aware that many decision makers may be unwilling to admit that a specific factor influenced a particular decision. References to evidence provided by the project or by related networks (in speeches, meetings or documents related to the policy) can provide a proxy indicator of contribution.





## POLICY

## FURTHER READING

## Further reading

This chapter has been informed by the following resources:

- ODI - Background Note - A guide to measuring policy & advocacy influence <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6453.pdf> .
- UNICEF Advocacy Toolkit - [http://www.unicef.org/evaluation/files/Advocacy\\_Toolkit.pdf](http://www.unicef.org/evaluation/files/Advocacy_Toolkit.pdf) .
- BOND - Assessing effectiveness in influencing power holders <https://my.bond.org.uk/sites/default/files/impact-builder/Advocacy.pdf> .
- Annie E Casey Foundation – A guide to measuring advocacy and policy <http://www.aecf.org/m/resourcedoc/aecf-aguidetomeasuringpolicyandadvocacy-2007.pdf> .
- WWF (2009a). “Resources for Implementing the WWF Project and Programme Standards: Monitoring Advocacy Work”, January 2009.
- WWF (2009b). “Resources for Implementing the WWF Project and Programme Standards: Monitoring Advocacy Work – Appendices”, January 2009.

## Additional resources and reading to consider:

- o <http://www.betterevaluation.org/> - good, accessible materials and webinars on designing evaluations.
- o <https://www.intrac.org/what-we-do/monitoring-evaluation-learning/> - accessible materials and resources on monitoring and evaluation. The Theory of Change materials are particularly helpful.
- o <http://www.evaluationinnovation.org/sites/default/files/Pathways%20for%20Change.pdf> - a really useful paper outlining ten models or types of Theories of Change which could apply to and be adapted for various projects/programmes. The Evaluation Innovation site <http://www.evaluationinnovation.org/> is also very useful in itself.



## Species & Habitat Management

### Summary

This chapter contains methods for evaluating the outcomes and impacts of conservation projects attempting to facilitate or implement direct management of species or habitats.



## SPECIES & HABITAT MANAGEMENT

### SPECIFICALLY THIS MODULE COVERS:

#### What should I consider when evaluating species and habitat management outcomes/impacts?

#### Understanding how project actions contribute to improving the status of a species or habitat

#### Methods for evaluating species and habitat management outcomes and impacts:

1. Knowledge improved
2. Conservation action plan developed and disseminated
3. Threats to species/habitats reduced
4. Recovery of species/habitats promoted
5. Species status improved (population size, trends, range size, extinction risk)
6. Habitat status improved (extent, condition, fragmentation)

### METHOD FACTSHEETS

- [Scorecard for evaluating changes in knowledge gaps](#)
- [Scorecard for evaluating action plan completion](#)
- [Scorecard for evaluating action plan adequacy](#)
- [Threat reduction scoring](#)
- [Scorecard for evaluating changes in species' status](#)
- [Scorecard for evaluating changes in habitat status](#)
- [Using field assessment methods for evaluating changes in species' status](#)
- [Using remote assessment methods evaluating changes in habitat status](#)
- [Using field assessment methods for evaluating changes in habitat status](#)

### ANNEXES

- [Field methods for species monitoring](#)
- [Sampling approaches for monitoring different species to assess their status](#)
- [Analytical issues when estimating abundance, distribution, survival and reproduction](#)
- [Field methods for habitat monitoring](#)
- [Sampling approaches for monitoring habitat status](#)





## SPECIES & HABITAT MANAGEMENT

### WHAT SHOULD I CONSIDER WHEN EVALUATING SPECIES AND HABITAT MANAGEMENT OUTCOMES/ IMPACTS?

#### What should I consider when evaluating species and habitat management outcomes/impacts?

**Time-lags.** It often takes time for species populations and habitats to recover once threats have been reduced and/or barriers to recovery have been removed/reduced. Small projects usually have a short duration, and direct improvements to species or habitat status may not be detectable within the timeframe of the project. In many cases, monitoring and evaluation should focus only on the outcomes that will occur during the lifetime of the project, unless post-project evaluation is possible, in which case measuring improvements to species or habitat status may be worth considering.

**Evaluation focus.** It may not be appropriate to attempt to assess the impact of a single project's actions directly on species or habitat status because of time-lags and the complexities of identifying cause and effect. Instead, consider more targeted measurement and monitoring of the outcomes and impacts of particular interventions that contribute to species or habitat outcomes, for example by filling a key knowledge gap or reducing a specific threat.

**Project scale.** The scale of the evaluation should be in line with the size of the project. Sometimes the most robust approaches are not the most appropriate ones to use, especially if you have limited resources in terms of time or people. Good evaluation design will take into account the size of the project in determining the amount of monitoring effort that is appropriate.

**Baseline data.** In many cases, baseline data may be available in the form of existing species/habitat monitoring data. Check beforehand to see what information is available. The potential for using certain methods will be affected by whether baseline data (e.g. population estimates) are available. If not, techniques that involve retrospectively assessing the project should be used.



### Attributing outcomes/impacts to species and habitat management actions



Detailed guidance on evaluation designs is provided in the section on [choosing an evaluation design](#). Here we consider the designs likely to be of greatest relevance to evaluating the outcomes and impact of project actions on species and habitat management.

## SPECIES & HABITAT MANAGEMENT

### ATTRIBUTING OUTCOMES/ IMPACTS TO SPECIES AND HABITAT MANAGEMENT ACTIONS

[Interviewing key informants](#) - Use the opinion of relevant individuals/experts to score the relevant variable (e.g. level of knowledge, magnitude of threat, category of extinction risk, etc) at the beginning of the project, at the end of the project, and in either an actual or a hypothetical situation in which the project had not taken place (a “counterfactual scenario”). The difference between the actual change measured, and the situation in the “no-project” scenario, represents the outcome or impact of the project. This may be the only feasible approach for many small and medium-sized conservation projects. Judgements should be made as objectively as possible, and notes provided to justify the scores selected. Where multiple informants provide scores, use the mean. The scorecard methods outlined in this chapter are all designed to be used in this way. Informants can also be asked to rule out alternative explanations as a way of investigating further the reasons behind any observed changes and the extent to which these can be attributed to the project.

[Matching designs](#) - Compare the outcomes (e.g. habitat condition) at the project location with those at a control location. The compared sites must have similar environmental and socio-economic conditions (e.g. habitat type, human influence, etc.) allowing for differences in outcomes/impacts to be attributed to project actions. This requires monitoring of both project and comparison locations in the same way, and will require additional time and resources. The power of this approach is improved if populations are also monitored before the start of the project. In practice, small projects will often struggle to identify control sites and to devote the necessary resources needed to monitor them, so before using a matching design to evaluate species and habitat management outcomes/impacts, you will need to ensure that you have the necessary resources to do so.

[Before-after designs](#) - Monitor the parameter of interest (e.g. population size) over time to compare its position before and after project interventions. This requires an evaluation of the situation before project actions are implemented and a further evaluation once they have been completed. As biological systems are often extremely complex and subject to many external factors, this approach should generally be limited to short-term effects where it is easy to rule out alternative explanations.

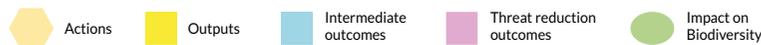
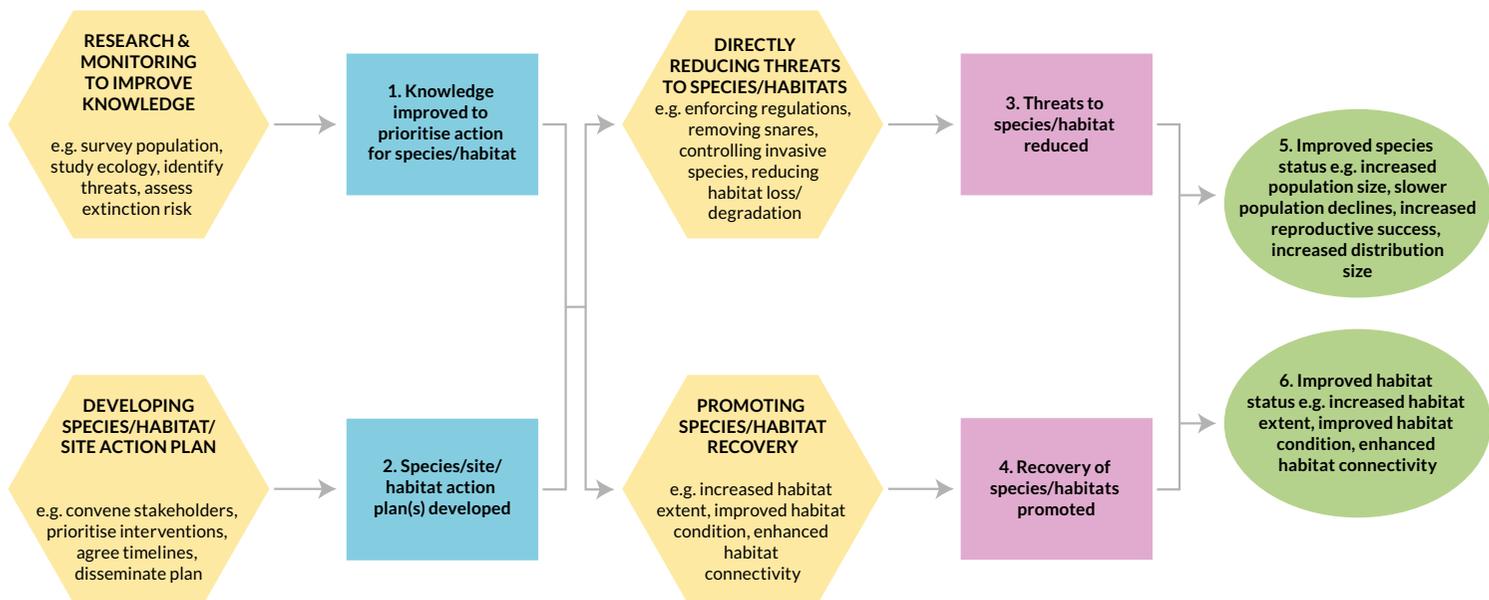




FIGURE 1: SPECIES AND HABITAT MANAGEMENT OUTCOME AND IMPACT FRAMEWORK<sup>8</sup>

**SPECIES & HABITAT MANAGEMENT**

UNDERSTANDING HOW PROJECT ACTIONS CONTRIBUTE TO IMPROVING THE STATUS OF A SPECIES OR HABITAT



<sup>8</sup>Colours, shapes and terms for the boxes match those used by the Conservation Measures Partnership and Miradi Conservation Planning software [www.miradishare.org/actions](http://www.miradishare.org/actions).

## SPECIES & HABITAT MANAGEMENT

### FRAMEWORK NOTES



#### Framework notes

The framework is designed to help you to understand how the actions implemented by a conservation project may benefit one or more species or habitats. It is useful to clarify this before considering which outcomes or impacts to measure.

Conservation projects may attempt to improve the status of species or habitats in a number of ways, either indirectly by increasing knowledge (for example of the distribution, threats, or biological requirements relating to a species), developing action plans, or directly by tackling threats or promoting the recovery of a species. Figure 1 illustrates these different types of actions and shows how they link together in a logical pathway to lead ultimately to an improvement in the status of species or habitats. Small- and medium-sized projects typically involve actions addressing just one or two of these steps. The numbers for each outcome correspond to the categories of information in Table 1 and in the summaries below. These will direct you to appropriate methods for assessing outcomes and impacts.

Outcomes 1 and 2 are focused on creating the conditions for further conservation actions to take place, while outcomes 3 and 4 relate to actions addressing the threats and barriers to species/habitat recovery. Outcome 3 results from directly addressing the scope or severity of threats (e.g. searching for and removing snares, erecting signs and fences to discourage encroachment, protecting nests from trappers, eradicating invasive species, etc.), whereas outcome 4 results from actions that reduce barriers to recovery by overcoming the ecological limitations imposed by existing threats (e.g. providing nest boxes for species that utilise tree-holes if availability of holes limits population size, planting trees to promote habitat restoration, etc.). Often projects involve a combination of these two types of action. Outcomes 5 and 6 relate to changes in the status of species and habitats. It is usually the aim of a conservation project to have an effect at this species/habitat status level.





## SPECIES & HABITAT MANAGEMENT

### UNDERSTANDING HOW PROJECT ACTIONS CONTRIBUTE TO IMPROVING THE STATUS OF A SPECIES OR HABITAT

#### EXAMPLE

**Target site:** Three projects are all working to support the conservation of a coral reef, areas of which have been severely degraded by the activities of dive operators. On the reef it takes around ten years for coral to recolonise an area that has been degraded.

**Project A** was a six-month project surveying a previously unstudied section of the reef in order to discover the extent and diversity of coral present and to make recommendations for future conservation efforts.

**Project B** was a two-year project aiming to reduce the impact of dive boats visiting a well-studied section of the reef, by promoting the implementation of a set of good-practice standards for dive operators to follow.

**Project C** was a three-month effort to carry out follow-up surveys of an area that had previously been surveyed at regular intervals over a ten-year period following the establishment of a marine reserve.

While the eventual goal of all three projects was to see an improvement in the status of the reef, there is a difference in what they can expect to measure with the time and resources available.

Project A focused on gathering and communicating the information needed to make future conservation decisions. A successful outcome required that the project's recommendations were taken up by policymakers and

subsequently put into action, something the team decided was not measurable in the six-month timeline of the project. Therefore they decided to focus evaluation on how effectively the project had addressed the identified knowledge gap, and to assess their contribution to the development of an action plan for the site (outcomes 1 & 2).

Project B was aiming to mitigate or reduce the intensity of threat. While this should lead directly to improvements in habitat status, the team decided, given the time it takes for coral to recolonise a degraded area, that such outcomes were unlikely to be measurable within the two-year timeline of the project. Therefore the team decided to focus on evaluating whether the project had been successful in reducing any of the threats (outcome 3) targeted by the good practice standards (e.g. ensuring that dive operators were tethering boats to buoys rather than directly on to the reef).

Project C also could have focused on threats (outcome 3) or recovery (outcome 4), but given that the project length covered the amount of time it takes for degraded areas of reef to show signs of recovery, the team decided to focus on measuring whether or not any recovery had taken place (outcome 6).



TABLE 1. SUMMARY OF THE METHODS COVERED IN THIS CHAPTER

OUTCOMES/ IMPACT	METHOD	EXAMPLES OF INDICATORS PRODUCED	HOW ATTRIBUTED TO PROJECT	EVALUATION DESIGN	REQUIRES BASELINE?	EFFORT
1. Knowledge improved	<a href="#">Knowledge gaps scorecard</a> Score 1-5 for level of knowledge for 6 types of knowledge	Score for knowledge of threats	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
2. Action plan(s) developed & disseminated	<a href="#">Action plan completion scorecard</a> Score 1-10 for completion	Score for action plan completion	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
	<a href="#">Action plan adequacy scorecard</a> Score 1-3 for adequacy	Score for action plan adequacy	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
3. Threats reduced	<a href="#">Threat reduction scoring</a> Score 0-3 for each of timing, scope and severity	Magnitude of threat to species or habitat	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
4. Recovery of species/ habitats promoted	Assess productivity, survival, population size, habitat restoration, etc.	Survival rate; population size; area of habitat restored	Estimate % change owing to project	Matching design or before-after design	Yes	Med-high
5. Species status improved	<a href="#">Species status scorecard</a> Scorecard for change in species abundance	Score for change in species abundance	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
	<a href="#">Field assessment methods for species</a> Assess changes in species status (population size, trends, range size, etc.)	Population size, number of locations	Estimate % change owing to project	Matching design or before-after design	Yes	Med-high
6. Habitat status improved	<a href="#">Habitat status scorecard</a> Scorecard for change in habitat quality	Score for change in habitat quality	Score at beginning, at end and for counterfactual	Interviewing key informants	No	Low
	<a href="#">Remote assessment methods</a> Assess changes in habitat status using remote sensing data	Forest cover; deforestation rate	Estimate % change owing to project	Matching design or before-after design	Yes	Med
	<a href="#">Field assessment methods for habitats</a> Assess changes in habitat status using field surveys	Mean tree diameter at breast height; population presence/ abundance	Estimate % change owing to project	Matching design or before-after design	Yes	Med-high



## SPECIES & HABITAT MANAGEMENT

### METHODS FOR EVALUATING SPECIES AND HABITAT MANAGEMENT OUTCOMES AND IMPACTS

First choose which outcome/impact in the framework (Figure 1) you judge to be most appropriate to evaluate. Then use Table 1 and the correspondingly numbered sections below to choose the most appropriate monitoring and evaluation method (considering the time and resources available, among other factors), and refer to the specific Methods factsheets and associated annexes.

For several types of species/habitat management outcomes and impacts, evaluation is challenging and requires time and resources that may exceed the capacities of many small and medium-sized conservation projects. Therefore, in addition to more robust methods, we also provide simpler, quicker “scorecard” methods. These can be applied using observed data collected during the project or as part of an [Interviewing key informants](#) evaluation design where the experience and knowledge of key individuals is used to assess the project’s outcomes and impacts. Respondents should provide explanatory notes and justifications for each score selected.



Photo credit: By Scdnr via [Wikimedia Commons](#)





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 1. KNOWLEDGE IMPROVED

#### Outcome 1. Knowledge improved

Many conservation projects involve actions that attempt to improve knowledge of the status of a species or habitat (in order, ultimately, to identify and prioritise appropriate conservation actions). Lack of knowledge may mean that project actions are ineffective or even damaging, so it may be necessary for projects to focus on (or to contain an element of) improving knowledge in order to inform subsequent conservation actions.

Types of knowledge gaps that a project might address include:

- distribution;
- population size;
- trends (e.g. in population size, distribution, habitat extent);
- threats;
- ecology;
- extinction risk;
- solutions (i.e. which responses are most appropriate/effective).

Use the factsheet [Scorecard for evaluating knowledge gaps](#) to evaluate the degree to which project actions filled knowledge gaps. This method uses a scoring system that can be conducted before and after the action and for a hypothetical scenario in which the project did not take place.

It is worth noting that projects may generate important knowledge about one or more of the aspects listed above as an unintended consequence of project actions (for example surveys to assess the population size of one species may discover additional species of conservation importance not previously known to occur in an area). This can still be reported as an outcome/impact of the project, and the level of knowledge for the aspect concerned can be scored using the method above.

It is important to appreciate that projects often present good opportunities for testing the effectiveness of particular interventions, but these opportunities are frequently missed, meaning that important information is not generated or shared with the wider conservation community. For example, a small-scale conservation project may provide nest boxes for a critically endangered bird species, but there is some uncertainty about the most appropriate height at which the nest boxes should be deployed. To test this, a project could simply place half of the boxes at 2 m height and the other half at 6 m, and then monitor the proportion of each set of boxes that is occupied by the target species (and ideally also the success rate of the nests). Reporting the results of such a test (in the peer-reviewed literature, or at <http://www.conservationevidence.com/>) would add to the body of evidence about the effectiveness of nest boxes and their utility for the particular species of concern, thus facilitating more effective conservation in future.

See the [Scorecard for evaluating knowledge gaps](#) for an example.





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 2. SPECIES/ SITE/HABITAT ACTION PLAN(S) DEVELOPED

#### Outcome 2. Species/site/habitat action plan(s) developed

This section addresses projects working towards the development of species action plans or site management plans. It presents simple methods for scoring the degree of completion of a plan (on a 1-10 scale) and the adequacy of a plan (on a 1-9 scale). The change in these scores during the course of a project is compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions.

A key outcome in conserving species and habitats is often the compilation of an Action Plan. Terms used for such plans include Species Action Plan, Species Recovery Plan, Site Management Plan, Habitat Recovery Plan, and Habitat Conservation Plan. These are essentially blueprints for conserving one or more populations, species or habitats, and the process of compiling them can be effective in bringing all stakeholders to agree and prioritise actions required<sup>9</sup>.

Small and medium-sized conservation projects may have as an objective the compilation of such an action plan (and often the implementation of at least part of it), or they may aim to contribute to the compilation of a plan which is being developed by others. Such projects can evaluate their outcomes and impacts according to the degree of completion of the action plan and/or the adequacy of the action plan. The factsheets below give guidance and examples for evaluating the impact of project actions on both of these aspects.

[Factsheet: Scorecard for degree of completion of an action plan](#)

[Factsheet: Scorecard for adequacy of an action plan](#)

<sup>9</sup>Action plans typically compile information on the status of the species or habitat (historic and current distribution, population size/abundance, habitat extent/condition), the threats that are relevant, and the conservation actions required, locations for these, the implementers involved and the timeframe for completion. For more information see:

- IUCN's Strategic Planning for Species Conservation: A Handbook: [http://cmsdata.iucn.org/downloads/scshandbook\\_2\\_12\\_08\\_compressed.pdf](http://cmsdata.iucn.org/downloads/scshandbook_2_12_08_compressed.pdf),
- BirdLife International's Species Action Plan Development Manual: [http://www.birdlife.org/sites/default/files/species\\_action\\_plan\\_manual.pdf](http://www.birdlife.org/sites/default/files/species_action_plan_manual.pdf)
- TNC's Conservation Action Planning (CAP) Handbook: [https://www.conservationgateway.org/Documents/Cap%20Handbook\\_June2007.pdf](https://www.conservationgateway.org/Documents/Cap%20Handbook_June2007.pdf).





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 3. THREATS TO SPECIES/HABITAT REDUCED



#### Outcome 3. Threats to species/habitat reduced

This section describes a simple method for assessing changes in the impacts of individual threats to one or more species or habitats brought about by project actions.

Many conservation projects attempt to reduce the threats impacting on a biodiversity target, for example by establishing or enhancing anti-poaching patrols, guarding against illegal habitat destruction, eradicating or managing invasive alien species, etc. Guidelines exist from various sources for implementing detailed monitoring of particular threats. Approaches commonly used in international conservation such as SMART or HCV<sup>10</sup> are usually too demanding on time and resources for smaller projects, instead, we recommend using an evaluation design that involves scoring of the type and magnitude of threats affecting the species or habitat. This is based on the “threats” component of BirdLife International’s Important Bird and Biodiversity Area site monitoring protocol<sup>11</sup>.

Use the factsheet [Threat reduction scoring](#) to evaluate changes in the magnitude of threats to species or habitats. The change in the level of threats during the course of a project is compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions. Justifications for scores selected should be provided, and quantitative data on threat scope, severity (intensity) and impact should be used if available.

<sup>10</sup>The [Spatial Monitoring and Reporting Tool \(SMART\)](#) is a data collection tool for protected area rangers and provides a systematic approach for documenting incidents of threats at sites: <http://www.smartconservationtools.org/>

The [HCV Threat Monitoring Protocol](#) is designed to standardise the monitoring of anthropogenic threats to High Conservation Value areas within oil palm landscapes, and contains detailed advice on how establish and run patrol teams to detect and monitor different threats.

<sup>11</sup>(BirdLife International 2008): [http://datazone.birdlife.org/userfiles/file/IBAs/MonitoringPDFs/IBA\\_Monitoring\\_Framework.pdf](http://datazone.birdlife.org/userfiles/file/IBAs/MonitoringPDFs/IBA_Monitoring_Framework.pdf).





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 4. RECOVERY OF SPECIES/HABITATS PROMOTED

#### Outcome 4. Recovery of species/habitats promoted

Conservation actions may aim to promote the recovery of species (for example by supplementary feeding or manual pollination) or habitats (for example by habitat restoration or creation), or both (for example by planting native seedlings). This section gives examples of suitable indicators for monitoring different types of project actions, but these should be tailored as appropriate for any particular project action. Guidance under outcomes 6 and 7 can be used for species and habitats respectively to identify appropriate methods for monitoring these indicators at project location(s) and at comparable location(s) in order to evaluate the outcomes and impacts of project actions.

Conservation project actions may attempt to promote the recovery of species or habitats directly in a number of ways (rather than via efforts to reduce threats, which is the subject of section 3). These can be broadly categorised into six groups (Table 2):

- Directly increasing reproductive success;
- Directly increasing survival;
- Establishing or strengthening ex-situ conservation programmes;
- Attempting reintroduction, benign introduction, or translocation;
- Increasing genetic diversity;
- Accelerating habitat recovery (e.g. through seedling planting) to create or restore habitat.

Such actions aim to remove or overcome barriers to species/habitat recovery, such as limits on breeding sites, food supplies, available habitat for species, or unsuitable conditions for habitat recovery. All may be relevant to projects aimed at the conservation of particular species, while the last may also be relevant to projects aimed at conserving particular habitats.

It is important to appreciate the distinction between removing barriers to recovery (the focus of this section) and reducing threats (section 3). In some cases, there may be long time-lags between removing or reducing a threat and the species or habitat recovering. Separate actions to promote recovery may reduce these time-lags. In other cases, it may not be feasible to remove or reduce threats sufficiently, and promoting recovery may be an effective short-term strategy.





## SPECIES & HABITAT MANAGEMENT

### POSSIBLE INDICATORS AND METHODS FOR MEASURING PROJECT ACTIONS

**TABLE 2: POSSIBLE INDICATORS AND METHODS FOR MEASURING PROJECT ACTIONS AIMED AT REMOVING OR OVERCOMING BARRIERS TO SPECIES/HABITAT RECOVERY**

BIODIVERSITY TARGET	AIM OF PROJECT ACTIONS	EXAMPLES OF PROJECT ACTIONS	EXAMPLE INDICATORS TO MONITOR	METHODS
Species	Increase reproductive success	Nest box provision, clutch manipulation, protection from predators, supplementary feeding of breeders, manual pollination	Number of occupied nest boxes, clutch/brood/litter survival, number of viable seeds, or indirect measures such as changes in population abundance	<a href="#">Field surveys for evaluating changes in species status</a>
Species	Increase survival	Supplementary feeding, disease/pathogen/parasite management (e.g. vaccination), seedling aftercare (watering, weeding)	Adult mortality, longevity (for short-lived species), survival rates or indirect measures such as changes in abundance	<a href="#">Field surveys for evaluating changes in species status</a>
Species	Establish/strengthen ex-situ conservation	Removal of individuals (including seeds) from the wild for captive breeding or artificial propagation, increasing productivity of captive breeding or artificial propagation	Number of (mature) individuals in ex-situ conservation, programmes, number of seedlings, breeding success/ productivity of captive population	Collate data from all relevant ex-situ programme institutions/ agencies/ locations
Species	Reintroduction, benign introduction, translocation	Reinforcement of wild plant & animal populations, assisted movement of individuals between locations or subpopulations	Population estimates, number of locations occupied, area of habitat occupied, number of sub-populations, extent of distribution	<a href="#">Field surveys for evaluating changes in species status</a>
Species	Increase genetic diversity within population	Sourcing genes from multiple populations, collecting pollen from multiple trees, connecting habitat fragments	Number of new breeding stock introduced	Collate data on the origin of introduced individuals/ breeding stock. See also <a href="#">Field surveys for evaluating changes in species status</a>
Species/habitats	Habitat restoration, habitat creation	Planting seedlings, removal of competitors, management of succession, water management (e.g. flooding, re-flooding)	Area of habitat restored/created, abundance of target or indicator species	<a href="#">Field surveys for evaluating changes in species status and Field assessment methods for evaluating changes in habitat status</a>





## SPECIES & HABITAT MANAGEMENT

### POSSIBLE INDICATORS AND METHODS FOR MEASURING PROJECT ACTIONS

Determining the outcome and impact of project actions aimed at removing or overcoming barriers to species/habitat recovery requires an assessment of the relevant indicators at the beginning and end of a project. For some parameters, such as numbers of individuals in ex-situ conservation programmes, or numbers of locations occupied, it may be possible to assess retrospectively their value at the beginning of the project period. For others, such as population abundance or adult survival rate, this may not be possible, and establishing a baseline at the beginning of a project is critical. Choosing which indicator to measure will depend on the species or habitat that is targeted, the size of the site, the resources available, the project duration, and the likely magnitude of change resulting from project activities relative to background variation.

#### EXAMPLE

A project aimed to promote recovery of a threatened species of cavity-nesting songbird by providing nest boxes. A total of 50 wooden nest boxes were erected at a height of 3–4 m on trees within ten test plots (five boxes per plot).

Test plots and ten similar control plots (which were not provided with nest boxes) were subsequently visited four times during the breeding season. The proportion of boxes occupied and the population density of the target species within each plot were measured.

The team found that 32% of boxes were used by the target species for nesting. A further 28% had nesting material in them, but no active nest. The breeding population densities of the target species were significantly higher in the test plots, compared to the ten control plots (4.2 songbirds/ha vs. 1.4/ha for control plots).

The team interpreted results as showing that the introduction of nest boxes had a potential positive outcome on breeding population densities.





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 5. SPECIES STATUS IMPROVED

#### Outcome 5. Species status improved

This section provides a simple scorecard approach using the informed opinion of certain individuals (key informants) to assess the impact of project actions on species status. Where project resources allow for more detailed and robust evaluation, we summarise the most relevant field methods for monitoring different groups of species, and give guidance on sampling approaches.

The ultimate aim of most conservation projects is to improve the status of one or more species or habitats. However, attempting to detect and/or quantify such impacts will not be appropriate for many small- and medium-sized projects because of time-lags, the resources required to measure such impacts directly, and the challenge of attributing changes to project actions.

A relatively low-cost measure is to use the Factsheet: [Scorecard for evaluating changes in species status](#), either based on data collected during the project or used as part of an [interviewing key informants](#) evaluation design, to estimate the impact of the project on species status.

To help inform such scores, or to evaluate changes in species status more directly, robust and repeatable field surveys are typically required. See the Factsheet: [Field surveys methods for evaluating changes in species status](#) for more information.

Deciding on an appropriate field survey method will depend on the taxonomic group being surveyed, for example surveying birds requires a very different approach compared with monitoring aquatic insects. The Annex: [Field methods for species monitoring](#)

summarises the approaches that are most commonly used for different taxonomic groups, and provides links to further sources of information<sup>12</sup>.

As well as the method by which individuals are detected and counted, it is also important to consider sampling strategies. Although it may be possible to undertake a complete survey in which all individuals in the area of interest are counted, changes in population size or range extent will typically be estimated from sample surveys in which only a proportion of the population is recorded. The Annex: [Sampling approaches for evaluating changes in species status](#) provides further details on both full and sample surveys, and lists sources of more detailed methods.

Species status may also be assessed in terms of extinction risk using the [IUCN Red List Categories and Criteria](#), which involves applying data on parameters such as population and range size and trend to a set of criteria with quantitative thresholds. As the Red List categories are relatively broad measures of extinction risk, actions implemented by small- and medium-sized conservation projects will rarely lead to a change in the status of a target species that is of sufficient magnitude to cross the thresholds for a lower Red List category, so this approach is less useful for measuring outcomes and impacts. [Population Viability Analysis](#) is an alternative and more quantitative approach, but typically requires input data that are too detailed to be feasible to mobilise in a small- to medium-sized project.

<sup>12</sup>More detailed information on the methods outlined here can be found in the Cambridge Handbook of Biodiversity Methods: <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>.





## SPECIES & HABITAT MANAGEMENT

### OUTCOME 6. HABITAT STATUS IMPROVED

#### Outcome 6. Habitat status improved

This section provides a simple scorecard approach using the informed opinion of certain individuals (key informants) to assess the impact of project actions on habitat status. Where resources allow more detailed and robust evaluation, we provide guidance on how to measure the impact of project actions on habitat status using remote sensing (e.g. for habitat extent and fragmentation) and field methods (e.g. for habitat condition via indicator species or vegetation structure).

Note that measuring changes in habitat status and attributing changes to project actions is challenging, and attempting to detect and/or quantify such impacts will not be appropriate for many small- and medium-sized projects because of time-lags, the resources required to measure such impacts directly, and the challenge of attributing changes to project actions.

A relatively low-cost measure is to use the Factsheet: [Scorecard for evaluating changes in habitat status](#), either based on data collected during the project or used as part of an [interviewing key informants](#) evaluation design to estimate the impact of the project on habitat status.

To underpin such scores, or to evaluate habitat status more directly, two approaches can be used:

The Factsheet: [Remote assessment methods for evaluating changes in habitat status](#) uses remote sensing data (images obtained through satellite imagery or aerial photography), typically in the form of maps of land cover or land use.

The Factsheet: [Field assessment methods for evaluating changes in habitat status](#) involves gathering relatively simple data from the field on stressors (e.g. roads, pollutants) or condition (e.g. connectivity, indicator species abundance, vegetation structure)<sup>13</sup>.

This section is most relevant to project actions that attempt to improve habitat extent, condition and connectivity at a local scale. Project actions aimed at improving habitat status at the regional scale tend to involve policy interventions (such as the establishment of protected areas), for which the guidance in the PRISM [Policy module](#) is relevant; or they tend to be beyond the small- and medium-scale project budgets and durations considered here.

<sup>13</sup>More detailed information on the methods outlined here can be found in the Cambridge Handbook of Biodiversity Methods: <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>.





## SPECIES & HABITAT MANAGEMENT

### FURTHER READING



#### Further Reading

A number of publications cover these issues in more detail. In particular, we recommend the following.

Cambridge Handbook of Biodiversity Survey Methods - Survey, Evaluation & Monitoring: provides an overview of methods for all taxa.. <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>

Sutherland WJ (2006). Ecological census techniques, 2nd Edition. Cambridge University Press, Cambridge.

Bibby CJ, Burgess ND, Hill DA and Mustoe SH (2000). Bird Census Techniques, 2nd Edition. Academic Press, London.

Sutherland W, Newton I and Green RE (eds) (2004). Bird Ecology and Conservation: A Handbook of Techniques. Oxford University Press, Oxford.

Chartered Institute of Ecology and Environmental Management: Sources of survey methods. <http://www.cieem.net/sources-of-survey-methods-sosm->.

Gill D and Daltry J (2014). Brief 3: How to make a monitoring plan for threatened tree species. Global Trees Campaign <http://globaltrees.org/wp-content/uploads/2015/03/GTC-Brief-3-monitoring-plan-lo-res.pdf>.



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## SECTION 4

# METHOD FACTSHEETS AND ANNEXES

## METHOD FACTSHEETS AND ANNEXES

### General Method Factsheets

[General Method Factsheets](#)

[Completing a Theory of Change](#)

[Identifying why you want to evaluate](#)

[Evaluation feasibility checklist](#)

[Completing a prioritisation matrix](#)

[Developing ethical protocols for an evaluation](#)

[Developing gender protocols for an evaluation](#)

[Entering, organising and cleaning data](#)

[Analysing Quantitative data](#)

[Analysing qualitative data](#)

[Evaluation report template](#)

[Evaluating outcomes and impacts of projects aiming to maintain or increase the values of ecosystem services](#)

[Questionnaires](#)

[Key informant interviews](#)

[Focus groups](#)

[Direct observation](#)

[Documentary evidence](#)

## GENERAL FACTSHEETS

### COMPLETING A THEORY OF CHANGE

#### Factsheet: Completing a Theory of Change

##### Summary:

This factsheet outlines the steps required to construct a simple “Theory of Change” for a conservation action or project. A Theory of Change is an articulation of the change you expect your project to achieve within the context you are working, showing each logical step along the way. A well thought-out Theory of Change provides a framework that will enable you to map out how the project will bring about change, identify the steps where an evaluation can and should take place and to develop the key questions the evaluation will address.

If your project is already underway and you did not develop these aspects at the outset you can use a Theory of Change (or equivalent) retrospectively or mid-way through the project. While completing a full, detailed Theory of Change can be quite a large undertaking involving consultation with multiple stakeholders, for the purposes of evaluating a small- medium sized project it is usually enough to take a simplified approach.

#### Introduction

##### Theory of Change is a tool for:

- well considered project planning, underpinned by robust and credible project design;
- ongoing project monitoring, providing a framework for effective evaluation;
- communicating and fundraising for your projects.

##### What does a Theory of Change do?

- Identifies the long-term change you want to achieve and works backwards to show how you will get there.
- Asks how and why change will happen, helping to clarify why you are doing what you plan to do.
- Looks at the larger context within which your project will operate.
- Articulates the individual logic steps between project elements, clearly showing cause and effect.
- Clarifies known assumptions necessary for success.



## GENERAL FACTSHEETS

### COMPLETING A THEORY OF CHANGE

#### When to develop a Theory of Change

Spending time on a Theory of Change when designing a project helps to ensure that the project has a clear logic behind it. If one is not developed when a project is planned, it can still be done at a later stage; and it provides a useful framework for an interim review, re-design or evaluation of project progress and impact.

#### What does a Theory of Change look like?

A Theory of Change can look however you would like it to look, depending on what is most useful for your project team. Most Theories of Change (including the examples given in PRISM) are flow diagrams. These can be single strands or complex webs, depending on the size and complexity of the project and the level of detail you have chosen to present.

There are several methods for thinking through a Theory of Change process. Some of the terms you may know are situation analysis, problem trees and objective trees. All of these end up with a flow diagram type of output. Focusing on the changes you are aiming for or have achieved, as opposed to the problems you are trying to tackle (such as in a situation analysis or problem tree), is what distinguishes the Theory of Change from other project planning approaches.

#### Definitions of project stages used in PRISM

**Actions** – What the project does to bring about change. For example conducting biodiversity surveys, training workshops, education/outreach campaigns.

**Outputs** – What is produced by the project's actions. These are usually measured in terms of quantity and quality of delivery, for example the number of reports produced from survey data or the number of individuals trained.

**Outcomes** – The changes brought about by the project's actions. For a conservation project these can be further divided into:

- **intermediate outcomes** which show progress towards subsequent outcomes/impacts; and
- **threat reduction outcomes** which represent the final change(s) that need to happen in order to impact on a conservation target.

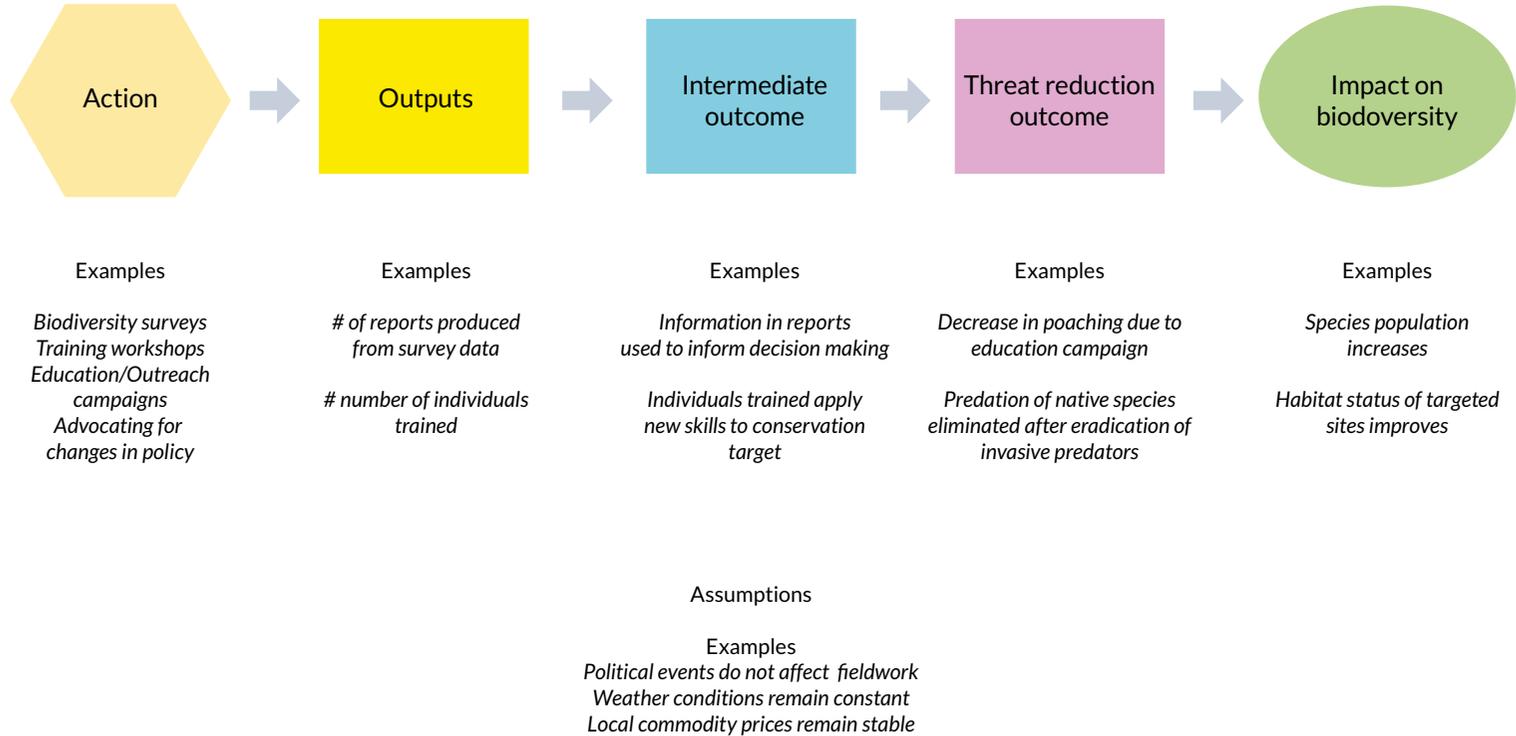
**Impacts** – The long-term, lasting change(s) brought about by the project's actions. For conservation projects these typically relate to changes in species and/or habitat status.

**Assumptions** – The links between each of the stages above are underpinned by assumptions. For example a project focused on training park rangers to carry out anti-poaching patrols makes the assumption that training park guards will result in more effective patrols. A project will also make assumptions about external factors that the project does not have control over, but that may influence the project's results if they do not remain true. For example, in order for training to be successful, park rangers need to have sufficient resources to carry out their work (e.g. equipment, salary). These kind of assumptions are particularly important for a small/medium-sized project to consider, as there will often be a large number of factors that could influence the project's outcomes/impacts and they will form an integral part of the story you will use to explain and contextualise your results.



**FIGURE 1: DEFINITION OF PROJECT STAGES USED IN PRISM**

**GENERAL FACTSHEETS**  
**COMPLETING A THEORY OF CHANGE**



## GENERAL FACTSHEETS

### COMPLETING A THEORY OF CHANGE

#### STEP 1

#### Required steps

**Step 1.** Identify the long term change the project is trying to bring about.

Start by thinking about the problem that the project is trying to address, then identify the long-term change your project will contribute towards to address this problem. Usually in a conservation project the intention will be to have an impact on the status of a particular species and/or habitat.

#### EXAMPLE

A project aims to reverse a decline in a population of chimpanzees, therefore the ultimate impact the project is trying to bring about is an increase in the number of chimpanzees.

Chimpanzee  
population  
increases



GENERAL  
FACTSHEETSCOMPLETING  
A THEORY OF  
CHANGE

## STEP 2

**Step 2. Identify and connect outcomes.**

Work backwards to identify the outcomes that need to happen during your project in order to achieve the desired impact. In a conservation project a good place to start is to look at your desired impact (see above) and then use the IUCN threat classifications (<http://www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme>) to work out which threats need to be addressed in order for the impact to be achieved.

Once the primary threat(s) have been identified you can then continue to work backwards to identify the intermediate outcomes that need to be achieved in order to reduce/mitigate these threats. Another approach to this is to re-write the project's objectives (as outlined in the project proposal) to turn them into outcome statements (statements that reflect the change they are trying to bring about).

**EXAMPLE**

The project identified several factors that could potentially affect the target population, however in this case the primary threat that needed to be addressed in order for the chimpanzee population to increase was poaching. Working backwards, the team identified the intermediate outcomes that needed to happen in order to bring about a decrease in poaching.



## GENERAL FACTSHEETS

### COMPLETING A THEORY OF CHANGE

#### STEP 3

#### Step 3. Identify outputs & actions.

Based on the outcomes and impacts you have identified, the next step is to identify the action (or group of actions) that you will carry out in order to make these outcomes and impacts happen.

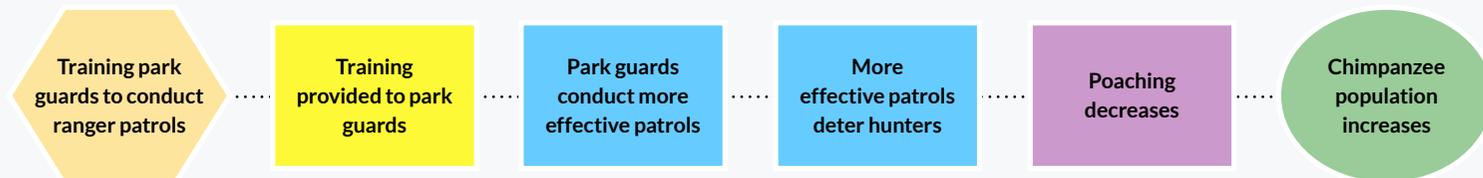
If you are at the development stage of the project there are several resources you can use to help to identify the most appropriate actions and approaches for achieving particular conservation

outcomes and impacts. Two particularly useful resources are [Conservation Evidence](#) and the [CMP/IUCN conservation actions classification](#).

If your project is already underway or completed you should insert the action(s) you have carried out during the project.

#### EXAMPLE

Based on the outcomes defined, the project team identified training to park guards as a crucial action that the project could undertake in order to bring about the necessary outcomes/impacts.



## GENERAL FACTSHEETS

### COMPLETING A THEORY OF CHANGE

#### STEP 4

#### Step 4. Test the logic.

Test the logic linking the project stages from actions – outputs – outcomes – impacts. At each stage, ask: why will this change lead to the desired change at the end of the project, or this action lead to that change? i.e. “If X happens, does Y happen? Is anything missing?” This process also helps to start discussions about assumptions (step 5).

Many projects involve multiple actions and results chains which should be linked together to show how they interact, and how they contribute to the achievement of the project’s outcomes and impacts. Refer to the end of this factsheet for some examples of Theories of Change for projects involving multiple actions.



GENERAL  
FACTSHEETSCOMPLETING  
A THEORY OF  
CHANGE

## STEP 5

**Step 5. Identify assumptions.**

Assess whether any assumptions are being made about things that have to be in place for you to achieve the desired outcomes and impacts, but which you will not work on. For example a critical assumption for a livelihoods project involving the growing of crops

might be that weather conditions remain stable enough for crops to grow. This is not something that the project will address, but the project may need to be adjusted if this assumption is no longer true.

**EXAMPLE**

The team identified (a) the resources and access required by park guards, and (b) the absence of other factors that might lead to a decline in the chimpanzee population, as the assumptions which need to remain in place in order for the project's actions to bring about the necessary change.

**ASSUMPTIONS**

- Park Guards have adequate resources to carry out their work
- Park Guards are able to access areas needed to patrol
- Hunted species populations do not decrease due to disease or other natural factors



GENERAL  
FACTSHEETSCOMPLETING  
A THEORY OF  
CHANGE

## STEPS 6 &amp; 7

**Step 6. Review Theory of Change with project team and key stakeholders.**

Show the Theory of Change to the project's key stakeholders, invite feedback on the following questions and make any necessary changes:

- Does the logic make sense (i.e. will one stage lead to another)?
- Have any critical assumptions been missed?

**Step 7. Use the Theory of Change to design and plan your evaluation.**

Use your Theory of Change to identify and prioritise what you will measure at each stage of your project to determine progress towards your desired impact and outcomes, and to assess the performance of your actions. Refer to [PRISM step 1](#) for more information on how to do this.

**Further reading**

Please note that this factsheet outlines how to construct a very simple Theory of Change to help guide and focus the development of an evaluation. For further reading on how to conduct a more detailed Theory of Change you can refer to the following resources:

Conservation International: Constructing Theories of Change for ecosystem based adaptation projects [http://www.conservation.org/publications/Documents/CI\\_IKI-ToC-Guidance-Document.pdf](http://www.conservation.org/publications/Documents/CI_IKI-ToC-Guidance-Document.pdf)

Margoulis et al. (2013). Results Chains: a tool for conservation action design, management and evaluation: <http://www.ecologyandsociety.org/vol18/iss3/art22/>.

USAID TIPS factsheet: Building a results framework. [http://pdf.usaid.gov/pdf\\_docs/Pnadw113.pdf](http://pdf.usaid.gov/pdf_docs/Pnadw113.pdf).

Center for Theory of Change: <http://www.theoryofchange.org/what-is-theory-of-change/>.

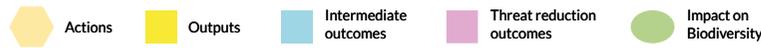
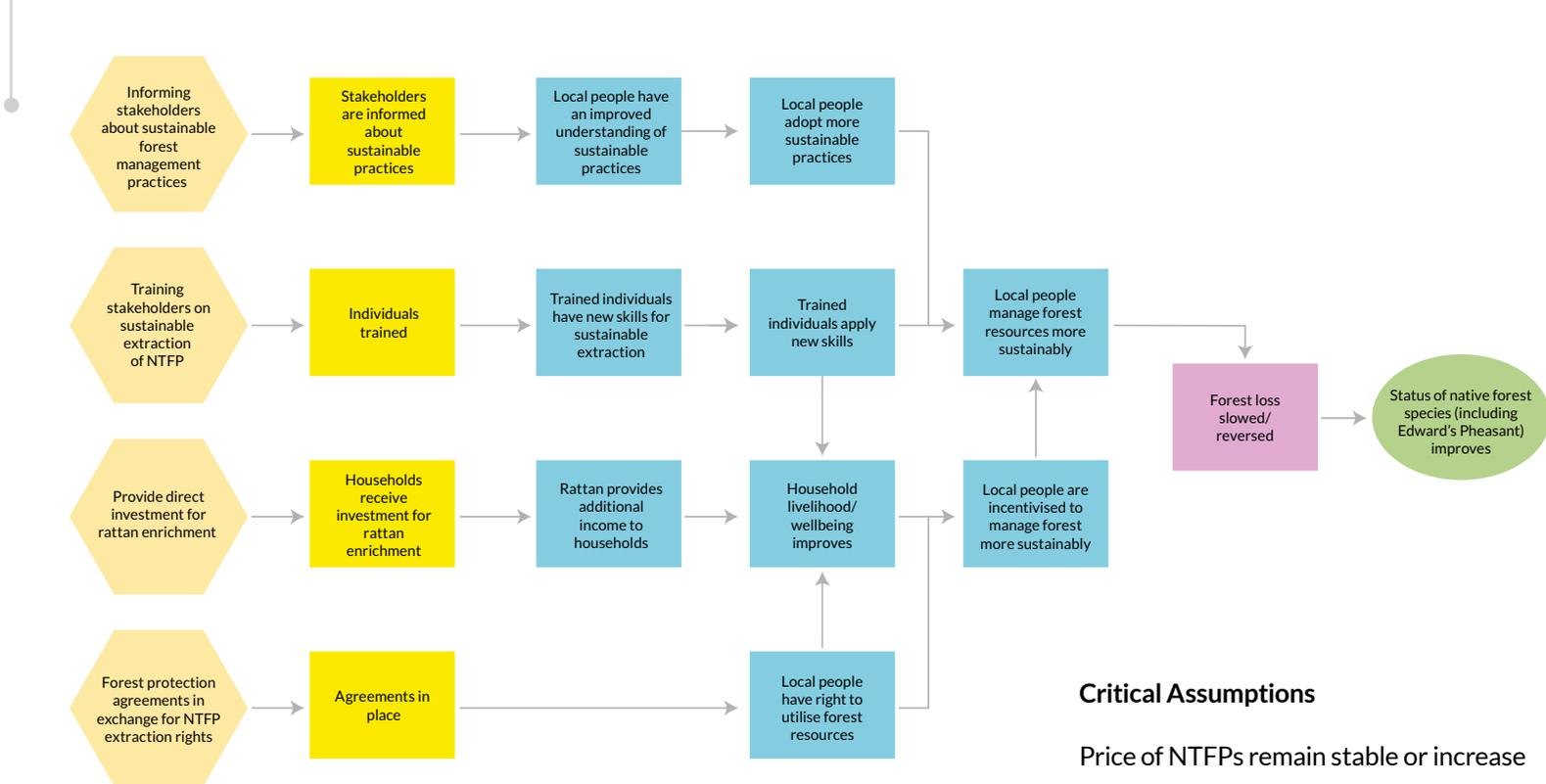
<http://www.evaluationinnovation.org/sites/default/files/Pathways%20for%20Change.pdf> - a really useful paper outlining ten models or types of Theories of Change which could apply to and be adapted for various projects/programmes.

The Evaluation Innovation site <http://www.evaluationinnovation.org/> is also very useful in itself.



GENERAL FACTSHEETS  
COMPLETING A THEORY OF CHANGE  
EXAMPLE THEORIES OF CHANGE FROM PROJECTS INVOLVING MULTIPLE ACTIONS

EXAMPLE THEORIES OF CHANGE FROM PROJECTS INVOLVING MULTIPLE ACTIONS:

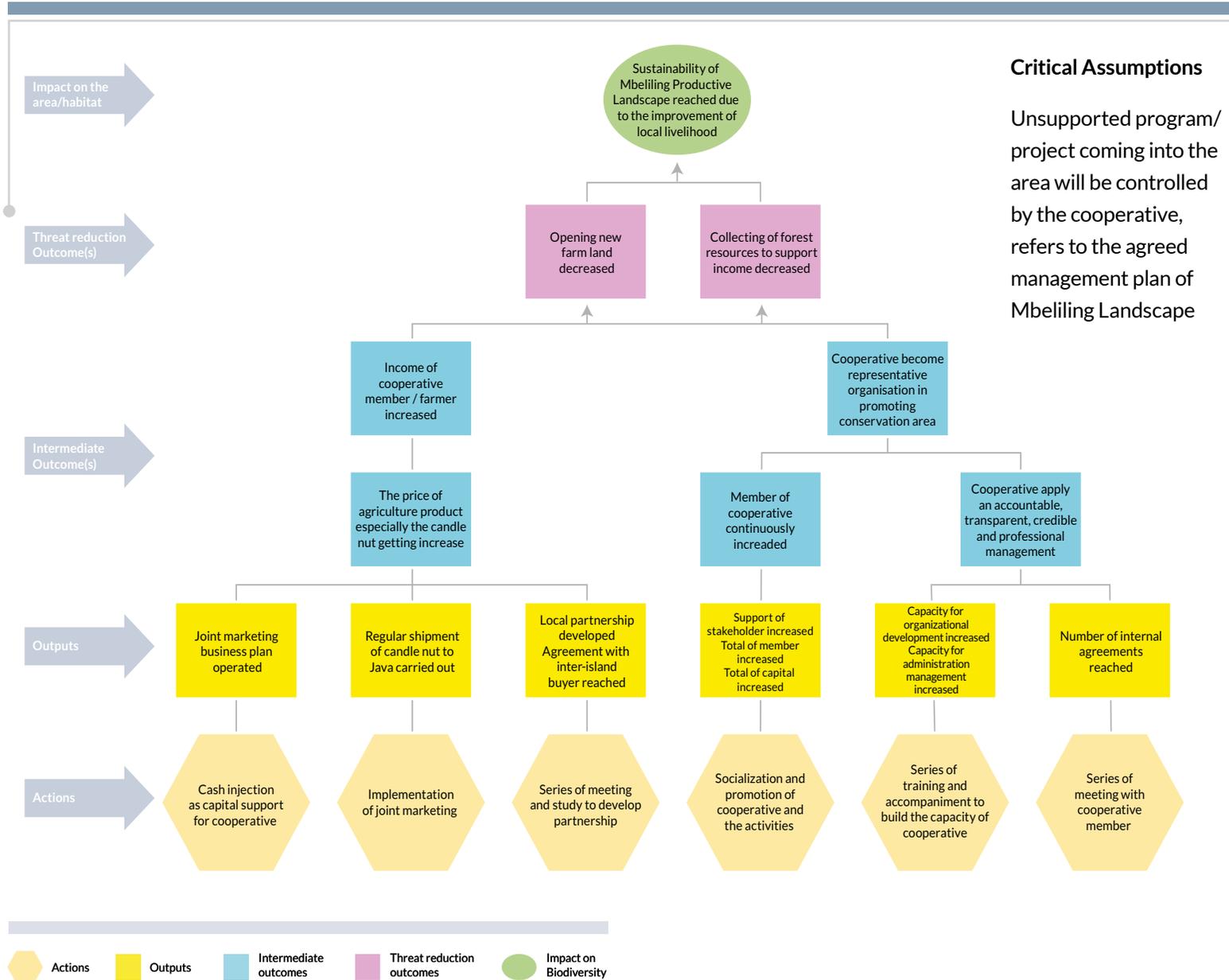


Critical Assumptions

- Price of NTFPs remain stable or increase
- Weather conditions remain stable enough for rattan to grow
- Populations of native forest species do not decrease due to disease or other natural factors



**GENERAL FACTSHEETS**  
**COMPLETING A THEORY OF CHANGE**  
**EXAMPLE THEORIES OF CHANGE FROM PROJECTS INVOLVING MULTIPLE ACTIONS**



## GENERAL FACTSHEETS

### IDENTIFYING WHY YOU WANT TO EVALUATE

#### Factsheet: Identifying why you want to evaluate

##### Summary

There are many reasons to evaluate and many potential ways in which the results of an evaluation could be used. For example you might want to demonstrate results externally, use results to learn internally or a combination of both. You may also want to clarify whether you are most interested in what change has happened, or whether you are more interested in how and why change has happened.

One of the most common mistakes in an impact evaluation is not identifying why you want to evaluate and what the evaluation results will be used for. This is critical because being clear about the purpose and the stakeholders who will ultimately use the results helps to determine the questions, evaluation design and methods you will use to carry out the evaluation.



## GENERAL FACTSHEETS

### IDENTIFYING WHY YOU WANT TO EVALUATE

#### STEPS 1 & 2

#### Required steps

##### Step 1 Identify evaluation stakeholders

As a project team, ask the following questions:

1. **Who are the main evaluation stakeholders?** - Typically your evaluation stakeholders will involve the project team/implementing organisation, the project donor(s) and other key stakeholders whose involvement is crucial to the success of the project. However you should also consider the following:
  - Which groups/individuals are most likely to be affected by the evaluation?
  - Which groups/individuals are most likely to make decisions about the project?
  - Whose actions and/or decisions will be influenced by their engagement with the evaluation process and/or the evaluation findings?
2. **How can the main stakeholders of the evaluation be involved?**
3. **What challenges/barriers might prevent/restrict the involvement of stakeholders?**
4. **Who are the target audiences for the evaluation (i.e. those who are interested in knowing about the evaluation findings, but are not among the primary evaluation users)?**

##### Step 2 Identify what the stakeholders want to know, and how they will use the results of the evaluation

Ask the following questions both as the project team and (if possible) to all other identified evaluation stakeholders:

1. **How could the evaluation results contribute to the improvement of the project?**
2. **How could the evaluation results contribute to making decisions about the project?**
3. **What outcomes do you expect from the evaluation process (what would success look like)?**
4. **What could be done differently as a result of answering these questions?**



GENERAL  
FACTSHEETSIDENTIFYING WHY  
YOU WANT TO  
EVALUATE

## STEP 3

## STEP 3 - COMPILE INFORMATION IN THE FOLLOWING TABLE:

STAKEHOLDER GROUP	WHAT DO THEY WANT TO KNOW?	HOW WILL THEY USE THE INFORMATION?
Project Team		
Donors		
Other key stakeholders (e.g. local authorities, politicians, law enforcement agencies, local community)		
Add others as necessary		

## EXAMPLE

STAKEHOLDER GROUP	WHAT DO THEY WANT TO KNOW?	HOW WILL THEY USE THE INFORMATION?
Project team/ implementing NGO	Was the action successful? Why/how was the action successful?	Modifying the project Demonstrating results to donors
Donors	Was the project a success?	External communications
Local authorities	What was the impact on local people?	Informing management/policy decisions
Wider conservation community	What lessons were learnt?	Distributing results Using results to inform conservation practice



## GENERAL FACTSHEETS

### EVALUATION FEASIBILITY CHECKLIST

#### Instructions

Use the following criteria to assess whether a particular evaluation question is feasible to answer.

If you answer “no” to any of the following key considerations, these will need to be addressed before the evaluation can go ahead.

KEY CONSIDERATION	DETAILS	YES/NO
<b>Available time:</b>	Many long-term outcomes (such as changes in biodiversity status) can take a long time for results to show, so you need to ensure that the outcome you are evaluating will be measurable within the time available.	
Is the outcome/impact measurable within the time available?	If the outcome/impact of interest is not measurable within the time available you will need to look at your Theory of Change (or equivalent) and identify intermediate outcomes that can be used to provide a reliable measurement of future impact.	
<b>Availability of data:</b>	If necessary data are not already available then you need to be able to collect these data over the course of the project.	
Are baseline data available or obtainable?	If baseline data are not yet available, are there specific plans for when baseline data would be collected and/or for the use of an evaluation design that does not require baseline data?	
Are existing documents available?	For example previous reports, national statistics data, monitoring data. Can authors (individuals or organisations) be contacted if more information or clarification is needed?	
Are any current monitoring data available?	What information is already being captured as part of project/institutional monitoring frameworks, and will this be sufficient for carrying out the evaluation?	
<b>Available resources:</b>	Ensure that your plans are realistic in light of the time, skills and resources available to the project.	
Does the team have the necessary skills to carry out the evaluation?	Is additional capacity/training needed? Are there any potential conflicts of interest?	
Is there sufficient funding to carry out the evaluation?	What resources are needed, and is there enough funding to cover these?	
Will the team have enough time to collect the necessary data?	For example have time considerations relating to other responsibilities and local contexts been factored into the project plan?	
Are roles and responsibilities clear within the team?	Is it clear who will be responsible for carrying out each part of the evaluation?	
Are there any major external events that could influence the plan?	For example elections or seasonal changes during the planned evaluation that may affect its feasibility.	
Are there any ethical concerns?	Are there any ethical concerns that may affect the feasibility of the evaluation?	
Have potential risks been identified?	Have major risks to the evaluation been identified and discussed (e.g. physical security risks, weather constraints)?	
Will key stakeholders be available to participate?	Will key stakeholders be present at the required times, taking into account e.g. farming seasons, leave, etc?	



## GENERAL FACTSHEETS

### COMPLETING A PRIORITISATION MATRIX

#### Factsheet: Completing a prioritisation matrix

##### Summary

This factsheet outlines a simple method which provides a template for the organisation, prioritisation and selection of evaluation questions. A prioritisation matrix allows you to organise the project's outcomes & impacts, develop questions relating to each outcome and apply a set of criteria to guide you in prioritising the questions to address in the evaluation.

##### Introduction

The guidance in this factsheet is meant to complement the information given in [PRISM Step 1 -- What do you need to know?](#)

The criteria applied in the matrix shown on the next page below are as follows:

- Importance to project users;
- Importance to project success;
- How well known is the action being evaluated?
- Time required (for outcome/impact to become feasible to measure);
- Ease of data collection;
- Resources required.

Ideally the matrix should be completed by the project team, then reviewed in conjunction with the project's stakeholders and revised if necessary to ensure that all are happy with the questions the evaluation will address.



# GENERAL FACTSHEETS

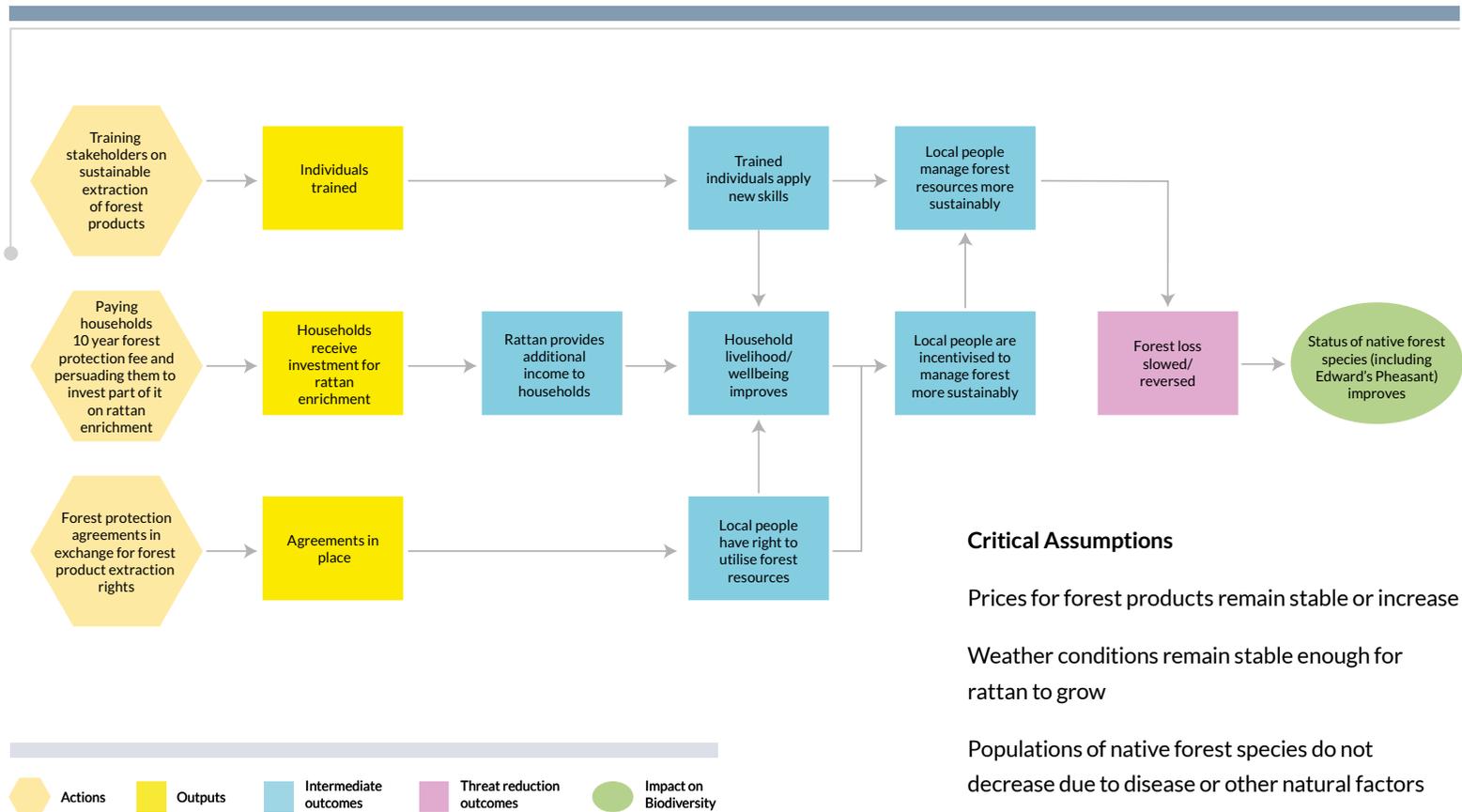
## COMPLETING A PRIORITISATION MATRIX

### STEP 1

#### Required steps

#### Step 1. Start with the project's outcomes & impacts.

Take the outcomes & impacts from your Theory of Change (or equivalent) and insert them into the following matrix. Put the project's longer-term outcomes and impacts at the top and work your way down. See example below.



#### Critical Assumptions

Prices for forest products remain stable or increase

Weather conditions remain stable enough for rattan to grow

Populations of native forest species do not decrease due to disease or other natural factors



GENERAL FACTSHEETS

COMPLETING A PRIORITISATION MATRIX

STEP 1

OUTCOME/ IMPACT	EVALUATION QUESTION(S)	WHICH STAKEHOLDERS CARE ABOUT THIS?	IMPORTANCE TO USERS	IMPORTANCE TO PROJECT SUCCESS	HOW WELL KNOWN IS THE ACTION BEING EVALUATED?	EASE OF DATA COLLECTION	CAN THIS BE ANSWERED GIVEN YOUR TIME & RESOURCES	PRIORITY
Status of native forest species improves			(High, Med, Low)	(High, Med, Low)	(High, Med, Low)	(High, Med, Low)	(Yes, No, Partially)	(High, Medium, Low, Eliminate) Provide justification for the answers)
Forest loss slowed/reversed								
Local people manage forest resources more sustainably								
Local people are incentivised to manage forest more sustainably								
Local people have right to utilise forest resources								
Household livelihood/ wellbeing improves								
Rattan provides additional income to households								
Trained individuals apply new skills								



**Step 2. Develop potential evaluation questions for each outcome/impact and identify who will use the results.**

Refer to step 1 in section 2 of the Toolkit for more information on how to develop evaluation questions and how to identifying evaluation stakeholders.

## GENERAL FACTSHEETS

### COMPLETING A PRIORITISATION MATRIX

#### STEP 2

OUTCOME/ IMPACT	EVALUATION QUESTION(S)	WHICH STAKEHOLDERS CARE ABOUT THIS?	IMPORTANCE TO USERS	IMPORTANCE TO PROJECT SUCCESS	HOW WELL KNOWN IS THE ACTION BEING EVALUATED?	EASE OF DATA COLLECTION	CAN THIS BE ANSWERED GIVEN YOUR TIME & RESOURCES	PRIORITY
<b>Status of native forest species improves</b>	To what extent have populations of native forest species changed since the project began and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	(High, Med, Low)	(High, Med, Low)	(High, Med, Low)	(High, Med, Low)	(Yes, No, Partially)	(High, Medium, Low, Eliminate) Provide justification for the answers)
<b>Forest loss slowed/reversed</b>	Has there been a change in the rate of forest loss since the project began and if so can this change be expected to persist	Participating households Local authorities; Project team Project funder						
<b>Local people manage forest resources more sustainably</b>	Has there been a change in the way local people manage forest resources and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder						
<b>Local people are incentivised to manage forest more sustainably</b>	Have the project's actions given local people more of an incentive to manage forest resources sustainably and if so can this be expected to persist?	Participating households; Local authorities						
<b>Local people have right to utilise forest resources</b>	Have agreements provided local people with the right to utilise forest resources?	Participating households Local authorities						
<b>Household livelihood/ wellbeing improves</b>	Have household livelihoods and/or wellbeing status improved as a result of the project's actions	Participating households Local community Project Funder						
<b>Rattan provides additional income to households</b>	Has the rattan planted with support from the project provided (or will provide) households with additional income?	Participating households Local community						
<b>Trained individuals apply new skills</b>	Are trained individuals applying any of the skills learnt?	Project team Participating households						



**Step 3. Populate the matrix based on the following criteria:**

Importance to users, importance to project success, how well

known the action is and the level of time, data and resources required. Refer to section 2 of PRISM for more information on how to apply these criteria.

**GENERAL  
FACTSHEETS****COMPLETING A  
PRIORITISATION  
MATRIX****STEP 3**

OUTCOME/ IMPACT	EVALUATION QUESTION(S)	WHICH STAKEHOLDERS CARE ABOUT THIS?	IMPORTANCE TO USERS	IMPORTANCE TO PROJECT SUCCESS	HOW WELL KNOWN IS THE ACTION BEING EVALUATED?	EASE OF DATA COLLECTION	CAN THIS BE ANSWERED GIVEN YOUR TIME & RESOURCES	PRIORITY
<b>Status of native forest species improves</b>	To what extent have populations of native forest species changed since the project began and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Low	No	(High, Medium, Low, Eliminate) Provide justification for the answers)
<b>Forest loss slowed/reversed</b>	Has there been a change in the rate of forest loss since the project began and if so can this change be expected to persist	Participating households Local authorities; Project team Project funder	Med	High	Low	Low	No	
<b>Local people manage forest resources more sustainably</b>	Has there been a change in the way local people manage forest resources and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Med	Yes	
<b>Local people are incentivised to manage forest more sustainably</b>	Have the project's actions given local people more of an incentive to manage forest resources sustainably and if so can this be expected to persist?	Participating households; Local authorities	Med	High	Low	Med	Yes	
<b>Local people have right to utilise forest resources</b>	Have agreements provided local people with the right to utilise forest resources?	Participating households Local authorities	High	High	Med	High	Yes	
<b>Household livelihood/ wellbeing improves</b>	Have household livelihoods and/or wellbeing status improved as a result of the project's actions	Participating households Local community Project Funder	High	High	Med	Low	Partially	
<b>Rattan provides additional income to households</b>	Has the rattan planted with support from the project provided (or will provide) households with additional income?	Participating households Local community	Med	High	Med	Med	Partially	
<b>Trained individuals apply new skills</b>	Are trained individuals applying any of the skills learnt?	Project team Participating households	Med	Med	Med	Med	Yes	

**Step 4. Prioritise the questions to be answered.**

Review the information in the matrix and prioritise the questions based on the information entered. If possible you should make a

note explaining why you ranked each question as high, medium or low. Once complete you should review this list with the project stakeholders, re-visit the Theory of Change to ensure that nothing important has been missed and revise accordingly.

**GENERAL  
FACTSHEETS****COMPLETING A  
PRIORITISATION  
MATRIX****STEP 4**

OUTCOME/ IMPACT	EVALUATION QUESTION(S)	WHICH STAKEHOLDERS CARE ABOUT THIS?	IMPORTANCE TO USERS	IMPORTANCE TO PROJECT SUCCESS	HOW WELL KNOWN IS THE ACTION BEING EVALUATED?	EASE OF DATA COLLECTION	CAN THIS BE ANSWERED GIVEN YOUR TIME & RESOURCES	PRIORITY
Status of native forest species improves	To what extent have populations of native forest species changed since the project began and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Low	No	Eliminate - Not possible to measure within project timeline
Forest loss slowed/reversed	Has there been a change in the rate of forest loss since the project began and if so can this change be expected to persist	Participating households Local authorities; Project team Project funder	Med	High	Low	Low	No	Eliminate - Not possible to measure within project timeline
Local people manage forest resources more sustainably	Has there been a change in the way local people manage forest resources and if so to what extent can this be attributed to the project?	Participating households Local authorities; Project team Project funder	High	High	Low	Med	Yes	High - Crucial to project success and measurable with available time / resources
Local people are incentivised to manage forest more sustainably	Have the project's actions given local people more of an incentive to manage forest resources sustainably and if so can this be expected to persist?	Participating households; Local authorities	Med	High	Low	Med	Yes	High - Crucial to project success and measurable with available time / resources
Local people have right to utilise forest resources	Have agreements provided local people with the right to utilise forest resources?	Participating households Local authorities	High	High	Med	High	Yes	High - Crucial to project success and measurable with available time / resources
Household livelihood/wellbeing improves	Have household livelihoods and/or wellbeing status improved as a result of the project's actions	Participating households Local community Project Funder	High	High	Med	Low	Partially	High - Crucial to project success and measurable with available time / resources
Rattan provides additional income to households	Has the rattan planted with support from the project provided (or will provide) households with additional income?	Participating households Local community	Med	High	Med	Med	Partially	Med - Rattan yet to be harvested which means income can only be estimated.
Trained individuals apply new skills	Are trained individuals applying any of the skills learnt?	Project team Participating households	Med	Med	Med	Med	Yes	Low - Not as important as other questions

## GENERAL FACTSHEETS

### COMPLETING A PRIORITISATION MATRIX

#### STEP 5

#### Step 5. Plan the evaluation around the prioritised evaluation questions.

Plan the evaluation around the questions identified, starting with the highest priority questions and working your way down. Aim to answer no more than five main questions during the evaluation.

For the example given above, the team selected the following three questions to answer during the evaluation:

- Has there been a change in the way local people manage forest resources and if so to what extent can this be attributed to the project?
- Have the project's actions given local people more of an incentive to manage forest resources sustainably and if so can this be expected to persist?
- Have agreements provided local people with the right to utilise forest resources?
- Have household livelihoods and/or wellbeing status improved as a result of the project's actions

Once the questions have been identified you can then develop indicators for each of them, insert this information into the PRISM evaluation and select appropriate methods and evaluation designs that will enable you to answer the identified questions. Refer to PRISM step 2 for more information on how to do this.

#### Acknowledgements

Guidance in this section is based on Sharp L and Frechtling J (1997). Overview of the design process for mixed method evaluation. In L Sharp and J Frechtling (eds.), User-Friendly Handbook for Mixed Method Evaluations.

Retrieved from <http://www.nsf.gov/pubs/1997/nsf97153/start.htm>.



## GENERAL FACTSHEETS

### COMPLETING AN EVALUATION PLAN

Once you have identified your evaluation questions and methods it is important to plan and map out how data will be collected, when it will be collected, who will collect it and estimate how much it will cost.

Below is a simple template that you can use, modify or adapt to your particular project to map out and plan your data collection.

See [Step 1. What do you need to know](#) for guidance on completing columns 1-4

See [Step 2. What data do you need to collect?](#) and the [Module Chapters](#) for information on completing columns 5-9

For column 10 (key assumptions) see factsheet: [Completing a Theory of Change](#) for more information on identifying and dealing with assumptions

#### COMPLETING AN EVALUATION PLAN

OUTCOME/ IMPACT (FROM THEORY OF CHANGE OR EQUIVALENT)	EVALUATION QUESTION	SUB- QUESTION(S)	INDICATOR(S)	DATA COLLECTION METHOD(S)	EVALUATION DESIGN	PERSON(S) RESPONSIBLE FOR DATA COLLECTION	WHEN WILL DATA BE COLLECTED?	ESTIMATED COSTS	KEY ASSUMPTIONS (FACTORS THAT MAY AFFECT THE PROJECT'S RESULTS IF NO LONGER TRUE)



GENERAL  
FACTSHEETSEXAMPLE:  
COMPLETED  
EVALUATION  
PLAN

## EXAMPLE: COMPLETED EVALUATION PLAN

OUTCOME/ IMPACT (FROM THEORY OF CHANGE OR EQUIVALENT)	EVALUATION QUESTION	SUB-QUESTION(S)	INDICATOR(S)	DATA COLLECTION METHOD(S)	EVALUATION DESIGN	PERSON(S) RESPONSIBLE FOR DATA COLLECTION	WHEN WILL DATA BE COLLECTED?	ESTIMATED COSTS	KEY ASSUMPTIONS (FACTORS THAT MAY AFFECT THE PROJECT'S RESULTS IF NO LONGER TRUE)
Small group of local people are actively engaged in conservation at the site	Is there a small group of local people who are actively engaged in conservation at the site?	Have local people been informed about conservation at the project site?	Number of local people attending a meeting  Local people's level of knowledge regarding conservation at project site after meetings/ presentations	Focus group	Before - After	Social surveyor	March 2017 & May 2018	Salary of social surveyor (\$30/day for 14 days data collection + 7 days analysis and reporting)	Local people's work schedules allow them to attend focus groups
		Are local people more interested in engaging in conservation at the site and if so, is this due to the project?	Establishment of a local conservation group  Local people's level of interest in engaging in conservation at the site	Direct observation  Focus group	Before - After	Social surveyor	March 2017 & May 2018		Local people's work schedules allow them to attend focus groups
Local communities appreciate the importance of birds at project site are positive about birdwatching at the site.	How has the project affected local communities perceptions of birdwatching and the importance of birds at the project site?	Has the project affected local perceptions towards birdwatchers	Community perceptions before and after the project	Questionnaire - Baseline	Survey stakeholders before - after - Social surveyor  Participatory Impact Assessment	Social surveyor	Baseline surveys - March 2017  Follow-up survey and PIA - May 2018		Local people's work schedules allow them to attend focus groups
		Is there a perceived economic benefit to local communities (e.g. bird tourism revenues)		Focus group - Baseline		Social surveyor	Baseline surveys - March 2017  Follow-up survey and PIA - May 2018		Local people are willing to provide honest answers regarding their perceptions
		Has the project made people more positive about birds and the importance of the site in general		Participatory Impact Assessment (PIA)		Social surveyor	Baseline surveys - March 2017  Follow-up survey and PIA - May 2018		Project timeline is long enough for economic benefits to become visible to local people
Habitat at managed part of project site is improved for shorebirds	Has the habitat being managed by the project been improved for shorebirds, compared to neighbouring salt pans?	Has the frequency of SBS and the diversity of shorebird species in BCST managed salt pans increased, compared to other salt pans?	Frequency and diversity of shorebird populations at both managed salt pans and neighbouring salt pans	Shorebird Survey	Matching design -Measure at project site & neighbouring salt pans	Local bird surveyor	Weekly - During winter months  Baseline data to be collected March 2017	Salary of local surveyor (\$20/day for 30 days)	Other than those managed by the project, environmental conditions do not significantly affect shorebird numbers or behaviour
		Have other indicators of habitat quality (e.g. salinity, invertebrate density) at project site improved	Indicators of habitat quality at managed salt pans	Habitat surveys (salinity, invertebrate diversity etc)	Measure before-after at project site	Project Coordinator  Researcher	Baseline survey - June 2017  Follow-up survey - June 2018	Stipend for researcher (\$20/day for 10 days data collection + 5 days analysis and reporting)	Other than those managed by the project, environmental conditions are similar at survey times



## GENERAL FACTSHEETS

### DEVELOPING ETHICAL PROTOCOLS FOR AN EVALUATION

#### Factsheet: Developing ethical protocols for an evaluation

Many organisations that conduct conservation projects, and organisations that fund projects, have their own ethical review process that any activities will need to adhere to. Such ethical standards will apply to evaluation methods as well. Some conservation projects may have no formal ethical review requirements but it is still essential that work conducted, both in the project itself and in the assessment of impacts, is ethically sound. This factsheet provides some guidance on the things that should be considered when conducting activities involving people.

There are also important ethical considerations for undertaking any evaluation involving species populations, habitats or stakeholders involved outside the main part of the project (e.g. as part of a control group). For example a particular method may damage a particular habitat or a method can cost the participants time that could otherwise be spent working, earning money, being active within their community or with family/friends. Poorly-planned evaluations can be unethical, can waste people's time and can damage both the project and the perception of conservation work in the local community and beyond.

There are ethical considerations that apply to activity design, during implementation and after the activity has been completed. These considerations may require preparation on behalf of the team before the project starts (for example, finding a secure storage unit for data).

#### Considerations for the design phase

**Minimise harm** - There is an obligation to minimise any potential psychological or physical risk to participants from taking part in the study. As well as direct risks there may be indirect ones, for example by asking people to take part in the research you may be reducing the time they have to spend with family and friends or at work, or you may be affecting their status in the local community. It may not be possible to avoid all harm, but risks need to be balanced against expected benefits.



## GENERAL FACTSHEETS

### DEVELOPING ETHICAL PROTOCOLS FOR AN EVALUATION

#### Considerations when collecting data

**Consent** - Participation needs to be voluntary, with the participants being informed that they are contributing to a research project and given details of what they are required to do. They must give their consent to this, either verbally or in writing. Projects are increasingly being encouraged to adopt the principle of Free, Prior and Informed Consent (FPIC)<sup>14</sup>.

- **Free** - Consent for involvement in the evaluation should be given voluntarily and without coercion, intimidation, manipulation or bribery.
- **Prior** - Consent should be sought sufficiently far in advance of the beginning of the evaluation, i.e. in the early stages of planning the evaluation, and should respect the time requirements of the participants.
- **Informed** - Information on the evaluation should be delivered in appropriate language and in a culturally appropriate way, in sufficient time to be understood. Information must be provided in a way that is clear, consistent, accurate, constant and transparent. Information must reach all relevant participating communities and any marginalised groups, and be provided on an ongoing basis throughout the process.
- **Consent** - Communities and individuals have the freedom to grant or withhold their consent at any stage of the evaluation. It must be accepted that the project will not proceed and/or that engagement must be stopped if participants decide that they do not want to begin or to continue, or if they decide to withhold their consent at any time.

**Right to withdraw** - During the survey the participants need to be informed that they can choose not to partake in part of the study or can stop participation at any time, or can ask for their information to be deleted.

**Confidentiality** - The participants need to be informed that their data will be collected, stored and used in confidence; and their data should be anonymised so that individuals cannot be identified in any analysis or written output.

**Transparency** - The participants need to be informed that they can contact the study leaders to ask questions or express concerns regarding the study; and they should be provided with contact details of the study leader to enable this.

**Debrief** - Participants should formally agree with the information that is being attributed to them and should be able to edit or delete their data.

<sup>14</sup>Adapted from: UN-REDD Programme (2013): [Guidelines on Free, Prior and Informed Consent](#).



## GENERAL FACTSHEETS

### DEVELOPING ETHICAL PROTOCOLS FOR AN EVALUATION

#### Considerations following data collection

- **Data storage** – Hard copies should be kept in a locked cupboard and electronic data must be stored in a secure way, being accessible only by named project members, to protect the participants.
- **Returning study findings** – The participants should be thanked for their participation and be provided with a suitable debrief on the study's findings and its implications at the time of completion.
- **Anonymity** – Data used in reporting should be anonymised so that the participants cannot be identified.

#### Important questions to consider

##### What is being asked?

Is the evaluation activity possibly going to cause any physical or psychological harm? Harm may occur in many ways, either directly (for example if a participant is stressed by questioning) or indirectly (for example through repercussions in the community if a participant is blamed for negative reports). Potential consequences are obviously a consideration for the person and whether they agree to participate, but they may also be balancing this with the desire to co-operate. It is, therefore, a responsibility of the project team to minimise negative consequences for the participants.

Does the evaluation activity aim to deceive participants about the information they are providing? In some situations the questions being asked may be getting information out of people in an indirect or less than honest way. Deceiving people may be unethical and unjustified, particularly if the information being obtained is sensitive, personal or if it potentially implicates people in negative or illegal behaviours.

Does the evaluation activity involve actions or questions concerned with sensitive or illegal behaviour? Although in some circumstances a project may be trying to gather information on sensitive/illegal behaviour, are you collecting any identifying or personal information that links any individuals to this behaviour? Do you have an obligation to report illegal behaviour and do the participants know this?



## GENERAL FACTSHEETS

### DEVELOPING ETHICAL PROTOCOLS FOR AN EVALUATION

#### How it is being asked?

Does the evaluation activity collect data using a third party or organisation (e.g. a consultancy or the internet) and therefore potentially share personal information with other companies? Using third party survey tools may require the participant to reveal their identity to the service provider, either directly, through being requested to provide their details, or indirectly through automatic collection of home addresses by visiting or IP addresses by the computer programme. The team should make sure that participants understand any privacy or data collection agreements they are entering into.

Is the evaluation activity offering rewards for participation? This will affect involvement, but consideration also needs to be given to whether rewards are equally available to all community members or are just benefitting a subset of the population. Providing rewards to some members of the community and not to others may cause conflict. This may be averted if equal rewards are available to everyone for different actions or at different times, but there should be transparency, consultation and agreement about any such rewards.

#### Who is being asked?

Does the evaluation activity involve children or vulnerable people? Special care needs to be taken when dealing with these groups so that they are not exposed to harm. For example, do the project team members have the relevant training and any requisite formal clearances for dealing with children/vulnerable groups? Children and other vulnerable people may not fully understand what they are agreeing to take part in, and the consent and presence of responsible guardians should be a requirement for work with such people.

More information on ethical considerations and standards can be found at <http://www.esrc.ac.uk/files/funding/guidance-for-applicants/esrc-framework-for-research-ethics-2015/> and <http://the-sra.org.uk/wp-content/uploads/ethics03.pdf>.



## GENERAL FACTSHEETS

### DEVELOPING GENDER PROTOCOLS FOR AN EVALUATION

#### Factsheet: Developing gender protocols for an evaluation

Many conservation actions will have outcomes and impacts that differ according to the gender of the project's stakeholders. Mainstreaming (or otherwise addressing) gender in your evaluation can therefore provide extremely useful information and insights that would not be captured if participants are viewed as a gender-homogenous group. Reference to gender is also a requirement for many donors in the development sector.

#### What is gender?

Gender is a social construct that refers to relations between and among women and men, based on their relative roles. It encompasses the economic, political and socio-cultural attributes, constraints and opportunities associated with being male or female. As a social construct, gender varies across cultures, is dynamic and open to change over time. Because of the variation in gender roles across cultures and over time, these roles should not be assumed, but investigated. Gender is also a rights issue, so for example women's rights are laid down in the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW). In the development community there is often a requirement for a Human Rights Based Approach.

#### Tips for incorporating gender into an evaluation

Ideally a project will have carried out a gender analysis at the beginning, or a social survey which clearly distinguishes data only applicable to women from data only applicable to men. The evaluation can then measure impacts and changes affecting each group separately if necessary. In many projects however, such data do not exist or they are inadequate. In order to focus the evaluation it is recommended to:

- identify whether gender has been addressed in all of the project's outcomes & impacts related to communities and local empowerment, and to what extent the outcomes & impacts affect particularly either women or men;
- (if there are no baseline data) develop questions and formulate indicators that are sex-disaggregated and gender-sensitive, such as numbers and percentages of men and women (not just "community members"). Questions and indicators could refer to the roles that women and men play in natural resource management, or to and attitudes and practices concerning female participation and leadership (e.g. how women participate in community decision making).



## GENERAL FACTSHEETS

### DEVELOPING GENDER PROTOCOLS FOR AN EVALUATION

#### Designing the evaluation and collecting data

- Apply gender sensitivity to methods, e.g. disaggregate questionnaire responses by gender.
- When appropriate, try to ensure gender balance among evaluation participants.
- Use both male and female data collectors, and ensure they have received gender-sensitive training.
- Ensure confidentiality and sensitivity, e.g. participants may provide different answers depending on the gender makeup of the group. It is often useful to organise focus group meetings solely with women, to ensure that their voice is heard.

#### Analysing and interpreting results

- During analysis, disaggregate data by gender.
- Use the data to evaluate whether and how the project's results affected men and women differently.

#### Questions to ask

- How did the project respond to the identified specific interests and needs of women and men?
- How did the project address the rights of men and women?
- Is the purpose and outcome of the intervention in keeping with the goals of gender equity and beneficial outcomes for women and men?

#### Key Resources

**Conservation and Gender.** Fauna & Flora International: <http://www.fauna-flora.org/initiatives/conservation-and-gender/>

#### **Guidelines for integrating gender into conservation.**

Conservation International:

English: <https://docs.google.com/file/d/0B23PUHp4FJPZb3AzNUZWNENkLVk/edit>

French: <https://docs.google.com/file/d/0B23PUHp4FJPZNHRON2VIMDNqY1k/edit>

Spanish: <https://docs.google.com/file/d/0B23PUHp4FJPZVnFYb1BTTVd5UUU/edit>.

#### **Conservation Leadership Programme - Tips for Integrating Gender**

[http://www.conservationleadershipprogramme.org/media/2014/09/CLP-Gender-Integration-Tips\\_Final.pdf](http://www.conservationleadershipprogramme.org/media/2014/09/CLP-Gender-Integration-Tips_Final.pdf).

#### **Addressing gender in impact evaluation**

<https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9934.pdf>.



## GENERAL FACTSHEETS

### ENTERING, ORGANISING AND CLEANING DATA

#### STEP 1

#### Factsheet: Entering, organising and cleaning data

##### Step 1. Enter and organise data

With both quantitative and qualitative data, it is important that data are entered in a logical format that can be easily understood and analysed.

- For quantitative data, use Microsoft Excel or another spreadsheet software package to enter your data into an electronic format.
- For qualitative data, type up all the data into a word processing program such as Microsoft Word.

Before you begin entering, develop a system to organise your data.

- For example, if you administered a survey to schoolchildren and students, it would probably be best to create one data spreadsheet for the parent survey and another spreadsheet for the student survey.
- Make sure that each participant's responses are assigned to a unique participant identifier and that responses are organised by survey item/question.

You would use a similar organisational approach for qualitative data.

- Create a file for each interview, observation site, focus group, etc.
- Within each file, organise the data by question, time interval, and/or topic (depending on which method makes most sense).



## GENERAL FACTSHEETS

### ENTERING, ORGANISING AND CLEANING DATA

#### STEP 2

#### Step 2. Clean data

No matter what type of data or method you use, be sure always to go back and review for errors.

Checking data for errors is commonly called “cleaning”. Cleaning data is critical because “dirty” data can severely influence your results.

Three commonly used cleaning methods are:

**Spot-checking** - Comparing the raw data with the electronically-entered data to check for data-entry and coding errors. To spot-check quantitative survey data, you would for example randomly select several participants’ completed paper questionnaires and compare them with the data in the electronic spreadsheet. For qualitative data you would use this approach to check whether participants’ words were recorded accurately and attributed to the right individuals.

If you find an error in your first round of spot-checking you should randomly check another round of the raw data. If you continue to find errors, and it is clear that they are more than just isolated incidents, you will need to go over all of the raw data to ensure that each record has been entered correctly.

**Eye-balling** - Reviewing the data for errors that may have resulted from a data-entry or coding mistake. For example, a survey question might read: “Did you attend one of the project’s workshops?” Participants can only respond to this question with a “no” or “yes.” “No” is assigned a value of 0,

while “yes” responses are assigned a value of 1. Therefore, any number other than a 0 or 1 in the associated column on the spreadsheet would be an obvious error.

**Logic checks** - Carefully reviewing the electronically-entered data to make sure that the answers to the questions “make sense.” For example, if participant 1 in a spreadsheet indicated that they did not attend a project workshop, it would be illogical for this participant to have provided a satisfaction rating for the workshop. The only logical response for this participant would be something equivalent to “not applicable”.

If you find any errors using the techniques above, you will need to go back to the original raw data for the participant(s) concerned and enter the correct data.

#### Acknowledgement

Guidance in this factsheet is based on the Pell Institute’s Evaluation Toolkit <http://toolkit.pellinstitute.org/evaluation-guide/analyze/enter-organize-clean-data/>.



GENERAL  
FACTSHEETSANALYSING  
QUANTITATIVE  
DATA

## STEPS 1 &amp; 2

## Factsheet: Analysing quantitative data

Analysing quantitative data involves examining numeric data (data collected in the form of numbers) to look for patterns and trends that can help you to answer your evaluation questions. This factsheet outlines some simple analyses that you can use to describe your data along with some links to resources that can help you to perform more complex analyses.

**Step 1. Identify what kind of data you have**  
Examples of quantitative data include:

DATA TYPE	CATEGORICAL/ CONTINUOUS	DESCRIPTION	EXAMPLE
Nominal data	Categorical	Basic classification data. Data has no logical order	Male/Female Species Sites
Ordinal data	Categorical	Data has a logical order, but differences between values are not constant	Juvenile - Adult
Interval data	Continuous	Data has a logical order and differences between values are standardised. There is no natural zero	Likert scale: (1=strongly agree, 2= agree slightly, 3=neither agree or disagree, 4=slightly disagree, 5=Strongly disagree)
Ratio data	Continuous	Data is ordered, has standardised differences between values and a natural zero	Species population size Household income

## Step 2. Organise your data

The first and most simple analysis you can undertake is to organise your data according to the different variables in your dataset, for example by gender, species, site or income bracket. Adding a percentage allows you to see what proportion of your total sample are represented in each category.

Sample size = 30

Gender	Female = 16 (53%) Male = 14 (47%)
Target community	Village A = 15 (50%) Village B = 15 (50%)
Primary source of household income	Coffee = 10 (33%) Livestock = 10 (33%) Plantain = 5 (17%) Tomatoes = 3 (10%) Fruit = 2 (7%)
How important is the long term sustainability of local areas of forest to your household?	Very important = 15 (50%) Quite important = 2 (7%) Neutral = 3 (10%) Not very important = 8 (26%) Not important at all = 2 (7%)



## GENERAL FACTSHEETS

### ANALYSING QUANTITATIVE DATA

#### STEP 3

**Frequency tables** are a good visual way of summarising nominal or numeric data by displaying the count of observations (number of times a value of a variable occurred) in a table.

NUMBER OF CHILDREN PER HOUSEHOLD	TALLY	FREQUENCY
1	II	2
2	IIII	4
3	I	1
4+	II	2

More information: [http://www.betterevaluation.org/en/resources/guides/frequency\\_tables](http://www.betterevaluation.org/en/resources/guides/frequency_tables)

#### Step 3. Describe your data

Use simple calculations to describe your data. The most commonly used calculations are:

**Mean** – Average of scores for a particular variable

**Minimum & Maximum values** – Highest & lowest value for a particular variable

**Median** – The middle point in the dataset.

**Mode** – The most common number score

So the following dataset could be described in the following way:

NUMBER OF CHILDREN PER HOUSEHOLD	TALLY	
1	II	Households = 9 Total Children = 21 Mean = 2.3 Max = 4 Min = 1 Mode = 2 Median = 2
2	IIII	
3	I	
4	II	



GENERAL  
FACTSHEETSANALYSING  
QUANTITATIVE  
DATA

## STEP 4

**Step 4. Disaggregate your data**

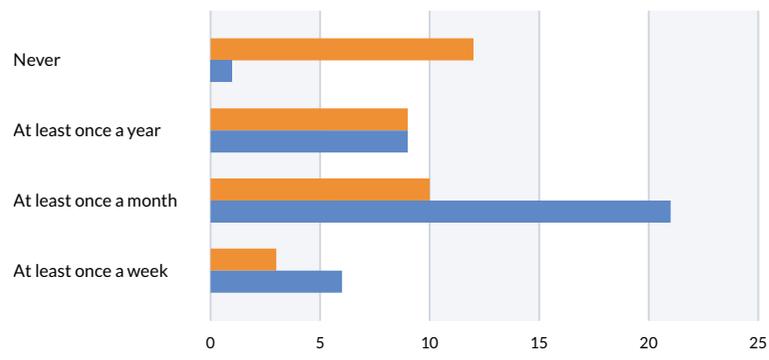
Further explore your data by separating out and disaggregating the data across your different variables.

**Cross-tabulations** are a simple method of showing how frequently two variables (e.g. gender and bushmeat consumption) occur together.

HOW OFTEN DO YOU EAT BUSHMEAT?	MALES	FEMALES
At least once a week	6	3
At least once a month	21	10
At least once a year	9	9
Never	1	12

Cross tabulations can then be used to make simple graphic to visualise your results:

How often do you eat bushmeat?



More information: Emery Evaluation - How to analyse pivot tables in excel <https://youtu.be/rybcOdlbH6g>



GENERAL  
FACTSHEETSANALYSING  
QUANTITATIVE  
DATA**More advanced data analysis methods**

There are a wide range of more advanced analysis methods that you can perform on your dataset. A selection of these are outlined in the table below along with some links to relevant resources.

Most of these analyses require the use of a statistical software package (e.g. R or SPSS)

METHOD	DESCRIPTION	MORE INFORMATION
<b>Correlation</b>	Determining how strongly two or more variables are related to each other. A positive correlation (+1.0 to 0) indicates that the variables will either increase or decrease together, while a negative correlation (0 to -1.0) indicates that as one variable increases, the other(s) will decrease.	<a href="http://betterevaluation.org/evaluation-options/correlation">http://betterevaluation.org/evaluation-options/correlation</a>
<b>Multivariate regression</b>	Identifying what combinations of variables best predict another variable of interest. For example, what combinations of household enterprises best predict their overall income levels.	<a href="http://betterevaluation.org/resources/guide/descriptive_multivariate_statistics">http://betterevaluation.org/resources/guide/descriptive_multivariate_statistics</a>
<b>Decision or classification tree</b>	Identifying what combinations of attributes best predict another attribute of interest. Useful where only binary data are available (e.g. male versus female, group member or not). For example identifying the simplest predictors of a household's poverty status.	EvalC3 – an Excel tool for developing decision tree models <a href="https://evalc3.net/">https://evalc3.net/</a>
<b>Clustering</b>	Identifying any natural groupings in the cases being examined, e.g. households or villages based on data about their multiple attributes.	<a href="http://www.betterevaluation.org/evaluation-options/multivariate-descriptive">http://www.betterevaluation.org/evaluation-options/multivariate-descriptive</a>
<b>Anomaly / outlier detection</b>	Finding exceptions to common patterns (such as the main types of households).	<a href="http://www.betterevaluation.org/evaluation-options/multivariate-descriptive">http://www.betterevaluation.org/evaluation-options/multivariate-descriptive</a>
<b>T-test</b>	Test for comparing the means (averages) of two samples.	<a href="http://wise.cgu.edu/wise-tutorials/tutorial-t-test/">http://wise.cgu.edu/wise-tutorials/tutorial-t-test/</a>



## GENERAL FACTSHEETS

## ANALYSING QUANTITATIVE DATA

### Acknowledgements

This factsheet is based on the following resources:

**Pell Institute Evaluation Toolkit:** <http://toolkit.pellinstitute.org/evaluation-guide/analyze/analyze-quantitative-data/>

**Better Evaluation page:** [http://www.betterevaluation.org/en/plan/describe/look\\_for\\_patterns](http://www.betterevaluation.org/en/plan/describe/look_for_patterns)

### Useful resources for quantitative data analysis

**WISE: Web Interface for Statistics Education** – Website that organises and hosts a large amount of statistics resources including tutorials, demonstrations and excel templates <http://wise.cgu.edu/>

**Analysing data in Excel** – Useful guidance on how to conduct simple data entry and analyses using t-tests <http://www.centenary.edu/academics/religion/dotto/rel308/Measure.pdf>

**Emery Evaluation** – Short videos explaining how to perform basic functions in Excel for interpreting and analysing evaluation data <http://emeryevaluation.com/excel-for-evaluation/>



## GENERAL FACTSHEETS

### ANALYSING QUALITATIVE DATA

#### STEP 1

#### Factsheet: Analysing qualitative data

##### Summary

Qualitative data is text or narrative based, not numerical. It is gathered through methods such as questionnaires, interviews, focus groups and observations. Analysing and reporting qualitative data requires approaches that are different from those used for numerical data. The type of analysis to be carried out should be planned during the design phase of the project, to make sure you have collected all the correct data you need. This factsheet describes how to code and analyse qualitative evaluation data.

##### Required steps

##### Step 1 Prior to fieldwork: preparing your metadata

- Create a database (also known as an archive) to record details of the types of data you are collecting, for example datasheets, audio files or digital records. It is essential to have such a database to link the results of analyses to the raw data and identify where data is stored.
- The database should include:
  - data identification details e.g. unique identifying codes, the format (audio, video, paper etc.), the method of collection.

- data source details, for example the source (e.g. interviews, focus groups, social media, books, websites), date, location, project members who collected the data.
  - the stages of data processing, to keep track of analysis phases. For example, record the dates when the following stages happen: “data collected”, “transcription started”, “transcription completed” (transcription is when paper/audio/visual data are converted to an electronic format, so you will need to include “file names” and “file location”), “analysed” (again you may need new “file names” and “file location”), “reported” (record the report name and location).
- Ensure that data storage meets data protection requirements. This relates to original data collection notes and electronic copies of transcribed information.
  - Prepare data collection equipment, e.g. label sheets, memos, notepads.
  - Code and label any tapes or digital files (if you are going to make audio and/or visual recordings) with their unique identification number, and record this in the database,



## GENERAL FACTSHEETS

### ANALYSING QUALITATIVE DATA

#### STEPS 2 & 3

#### Step 2. Immediately after an event/interview

- After each event or interview, make general notes about any details you recall that could be relevant or interesting but may not have been captured by your data collection method, for example comments made or behaviour observed.
- Prepare memos (short notes, about two lines long, that capture the essence of what you learned) from an activity based on an initial analysis by the data collector.
- Gather any materials developed during participatory activities and make sure they are correctly labelled.
- Update the database with any changes and record that the data have been collected.
- Make data copies as soon as possible in case anything should happen to your raw data (your master data). This means copying up field notes and data sheets, and downloading audio/video/picture files. Ensure all copies are stored in a suitably secure manner.
  - o If no access to computers is available, paper files should be copied into another notebook or folder. This is especially important if the same notebook is used for several events before information is recorded on a computer. In such situations, if the original notebook gets lost, the copied notes will remain and the entire season's work will not be lost.

- o If intending to delete original files after downloading them (e.g. to reuse memory cards), make sure the files have transferred correctly (e.g. listen to the middle, the end and a couple of other random points within an audio file). Also create a second backup copy of the digital file and store each of them on different memory drives, so if one drive becomes corrupted or deleted, there will be a copy of the raw data.
- After copying paper files they should be stored in a separate, secure (dry/safe/locked) location.

#### Step 3. Transcribe material

- Audio/video files and paper records should (if not already done) be fully and completely transcribed into a digital format to make analysis easier.
- This may done by an assistant or third party not involved in the research, so that they do not emphasise particular points or select sections of data for transcription It is on the other hand also a good way for the researcher to get to know their data. In some cases an exact transcription will be made, where all captured information is included in the electronic version, as close to the original conversation as possible.



## GENERAL FACTSHEETS

### ANALYSING QUALITATIVE DATA

#### STEPS 4, 5 & 6

#### Step 4. Double-check data

- This is an essential part of the process for both qualitative and quantitative data so that errors in transcription can be minimised.
- Transcripts of audio files should be checked by listening to the file while reading the transcript.
- This can be done by a person who did not enter the data and, if it is the researcher who is carrying out the analysis, this is a good opportunity to note any interesting quotations that can be used later to illustrate key findings in your Monitoring & Evaluation report.

#### Step 5. Review your evaluation questions

Before analysing your data, you should always start by reviewing your main evaluation questions, i.e. the reason you undertook the evaluation in the first place. This will help you to organise your data and focus your analysis.

When reviewing your evaluation questions you should remind yourself of the theoretical basis for why you thought the intervention was suitable (the details behind your Theory of Change framework) and what you thought it would achieve (the outcomes).

#### Step 6. Analyse contextual and demographic data

It is important to have a good understanding of the participants from whom the data were collected, the tools used to collect the data, and the local context. This information will help your analysis and interpretation of the data, and it is particularly important if your data are collected by different researchers in various locations.

Demographic data about research participants can be put into a table such as the example shown in Table 1, and then statistics can be prepared on the age, gender, occupation, education level and other relevant details relating to your research participants. This information can be related to qualitative analyses, for example it may reveal that people from particular age groups or occupations had particular responses to the project intervention.

**TABLE 1: TEMPLATE FOR COLLECTING DEMOGRAPHIC DATA**

PARTICIPANT NUMBER	LOCATION	AGE	GENDER	OCCUPATION	EDUCATION
1					
2					
3					



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## STEP 7

**Step 7. Code the data**

Coding data is the process of looking for recurring ideas, concepts, themes, topics, phrases, comments or even single words which emerge from the data. When the analyst identifies these items a code is given to classify a particular group of ideas. This could be within the contributions of a single respondent, for example in an unstructured interview a person may repeatedly comment on the same topic, or it could be derived from the contributions of several respondents. Patterns of codes and emergent themes can then be identified.

Coding can either be done by stipulating codes in advance (a priori) or letting codes be suggested by the data (grounded theory). A priori codes can be suggested by the theoretical basis for the intervention and by what is expected to be affected or to have changed. For example, if you want to know whether your intervention has affected hunting rates and whether people have changed their behaviour, you might code for terms you deem to be relevant such as “food”, “hunting”, “income”, “traditions” or “habits”. Alternatively you can be data-led, and code recurring themes in the data, but for this it is important to set aside any pre-conceived expectations. It is important to ask yourself what is being described, what is happening or being said, what is being assumed by the interviewee and how their demographic status may affect their statements.

You are likely to use many codes - some general, and some more specific. For instance, a general code might be “income” and you could use it to identify data that are relevant to the subjects’ level

of education. A more specific code might be “income from hunting” which you might choose because the data refer to understanding levels of hunting. You will need to go through your data in detail, coding it according to the types of themes and issues that emerge. By coding data as “income” or “awareness” you are marking it in a way that means you can find it and return to it later, knowing that this particular piece of data is about income or awareness (it could be about both, in which case you will have applied both codes to it). In this way the code will help you to identify relevant items of data that you can pull together later to say something about income and/or awareness.

When developing a coding scheme, either a priori or particularly for data defined codes, it is essential to pilot-test the coding scheme. Test the codes on a subset of the responses, and adjust the coding categories if necessary. Develop clear definitions for what does and does not fall into a particular code. This will ensure that the analysis process is clear to other users. Multiple analysts should be involved in coding, to reduce the subjectivity of the process, and to ensure that the codes are being applied consistently. When the final set of coding categories has been defined, the full data set is then coded. The first coded data files should then be re-coded, as a way of testing whether the coding categories were being used in the same way at the end of the coding as they were at the beginning. If the re-coding leads to different results from the first pass, then a review of the process needs to be conducted, as this implies that the coding definitions have changed during the coding process.



## GENERAL FACTSHEETS

### ANALYSING QUALITATIVE DATA

#### STEP 8

Coding helps to work out what the data are telling you and the relationships and patterns in your data. As your research develops you may define many codes, building up an increasingly detailed understanding of the data. If you are working as a team on the process of coding, it is important to develop a shared understanding and agreement on the names of the codes and what they mean. The codes you develop are likely to change as your research proceeds and as you develop new understandings of the topics you are researching.

- Carefully read through your records and make comments about the key patterns, themes and issues in the data.
- Highlight similar data in the same colour and give each colour-group a descriptive code that suggests what it is referring to.
- As you read more records, different codes may suggest themselves. It will then be necessary to re-read earlier records to compare things to see whether relevant statements have been missed or previous codes should be renamed. Coding data requires detailed analysis of data and constant comparisons of text, so each record may need to be read several times.
- Keep a list of your codes and their definitions. During the coding process, codes may be added/deleted and their definitions refined. Notes should be kept on why codes are being changed and on your thoughts and ideas about the coding.

#### Step 8. Identify and summarise codes

Once you have an initial list of codes, and agreed definitions of these codes, you can begin organising your data into hierarchies, with similar codes grouped under a broad title. For example, negative and positive comments about the project could come under “feedback on project”, while people’s ideas about how the project may change their lives in the future could come under “perceived project impacts”, and suggestions for changes to project logistics, financing, resources and scope etc. could come under “suggested improvements”. These headings can be used later when you prepare a report on your findings. Next, you can summarise the main themes, drawing on contextual data and other information that can help you to better understand your findings.

Note how frequently each pattern or theme occurs and who talked about this theme, for example people of a particular gender, age group or occupation. It is usually best to look for the range of views expressed by participants rather than trying to quantify the responses. However, if your data clearly show which participants made particular comments, some quantification of responses may be appropriate.



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DATA

## STEP 9

**Step 9. Interpret findings, assess contributions to outcomes and impacts, and summarise**

This involves putting your data into a wider perspective. That means comparing your results with what you expected, and with your original project objectives, indicators and research questions. You would then summarise your main findings, under broad headings such as “Listening Patterns” and “Project Impacts”. Interpretation goes beyond description. It means attaching significance to what your data are telling you, making sense of your findings, offering explanations, drawing conclusions and lessons learnt, and imposing order onto a complex and messy picture. Your findings should:

1. be led by the data, not by preconceived ideas or assumptions;
2. get rid of any misconceptions, if this is possible;
3. illuminate important things that you didn't know but should know.

You also need to consider the extent to which your project may have contributed to the impacts identified, based on the evidence that you have collected and analysed. This means understanding how various aspects of your project work in combination with other activities to produce certain outcomes and impacts.

You may start with very limited data, which only tell you about a certain group of people in a certain place. This is fine as a beginning, as long as you make it clear in your reports that the

findings are limited to these people in this place. Gradually, over time, you can increase the scope of your research, talk to more people from different backgrounds and in different locations. The important point is to be aware of the limitations of the research you have done, and to make this clear to readers of your reports. The next step is to investigate issues of interest further.

It is always best to take a cautious approach to the interpretation of your data. This means avoiding leaping to conclusions or making assumptions about why something happened. It is always useful to discuss your interpretations at length with others. Learning how to produce a good interpretation of qualitative data can be challenging and is likely to take some time. However, it is worth persevering with, as an effective and rigorous interpretation can really improve your project reports. Seeking feedback and support from others with more experience in this area should help you to improve more quickly.

**Acknowledgements**

This factsheet is based on the following resources:

Equal Access Participatory M&E toolkit: [http://www.betterevaluation.org/toolkits/equal\\_access\\_participatory\\_monitoring](http://www.betterevaluation.org/toolkits/equal_access_participatory_monitoring).



## GENERAL FACTSHEETS

### EVALUATION REPORT TEMPLATE

#### Factsheet: Evaluation report template

After you have decided who you report to and in what format, you should create a detailed evaluation report that addresses all of your evaluation questions. You can then take the detailed report and extract summary information for relevant audiences and adapt the report into the most appropriate format(s).

Your detailed report should include the following section headings and content:

#### Cover page and title

Your title should be descriptive of your project, and you may want to relate it to your project's overall goals.

An appropriate image will add visual appeal to your report.

#### Executive summary

This is summary of the main findings, lessons and recommendations from your evaluation. Some people, depending on how busy they are, will only read the executive summary. It should generally not be longer than two pages.

#### Introduction

- Overview of the project and its goals.
- Key stakeholders and target audience.
- Intervention logic.

This should include an overview of the project that is being evaluated, including the timeframe, main stakeholders, and project goals. It is good to provide an intervention logic that outlines what you sought to achieve and what you did along the way. You may want to describe in greater detail particular activities that were critical in delivering outcomes.

#### Evaluation framework

- Purpose of the evaluation.
- Key evaluation questions.
- Evaluation team.
- Evaluation method (including limitations).

You should also outline the purpose of the evaluation, including the evaluation audience and what they want to know. This includes highlighting the key evaluation questions. You may want to include the full monitoring and evaluation (M&E) plan as an appendix. It is important to note who made up the evaluation team. You should also provide an overview of the evaluation method (you can link this back to the M&E plan in the appendix) and any limitations applying to the methodology. You may want to use a table that highlights the quantitative and qualitative methods used in the evaluation.



## GENERAL FACTSHEETS

### EVALUATION REPORT TEMPLATE

#### Evaluation findings

- Evaluation question 1.
- Evaluation question 2.
- Evaluation question 3 etc.

A good way to present your evaluation findings is to use your key evaluation questions as the main sub-headings (e.g. “was the delivery model effective in changing participants’ behaviours?”).

You would then use the information collected through your project to make a judgement and answer the key question. Remember that you do not want simply to present information, but rather to interpret the information and make a value judgement. Use graphics where appropriate, and remember that you do not have to present all the information you have collected. You may present some of the information from your monitoring in an appendix.

#### Conclusion and recommendations

This is where you may want to do a high-level summary of the successes and lessons of your project based on your evaluation findings. You may also want to communicate how the evaluation findings will be used (in terms of information for future projects, changes in policy, etc.). You should also make a list of key recommendations (which are also presented in the executive summary).

#### References

Provide details of any other publications or sources of information that you have used in your report.

#### Appendices

This is where you provide detailed information that some of your audience members may want to refer to. This includes your full M&E plan, questionnaires that were used, detailed results and information, statistical analyses, etc.

#### Acknowledgement

Adapted from Evaluation Toolbox: Detailed Evaluation Report: [http://evaluationtoolbox.net.au/index.php?option=com\\_content&view=article&id=48&Itemid=60](http://evaluationtoolbox.net.au/index.php?option=com_content&view=article&id=48&Itemid=60).



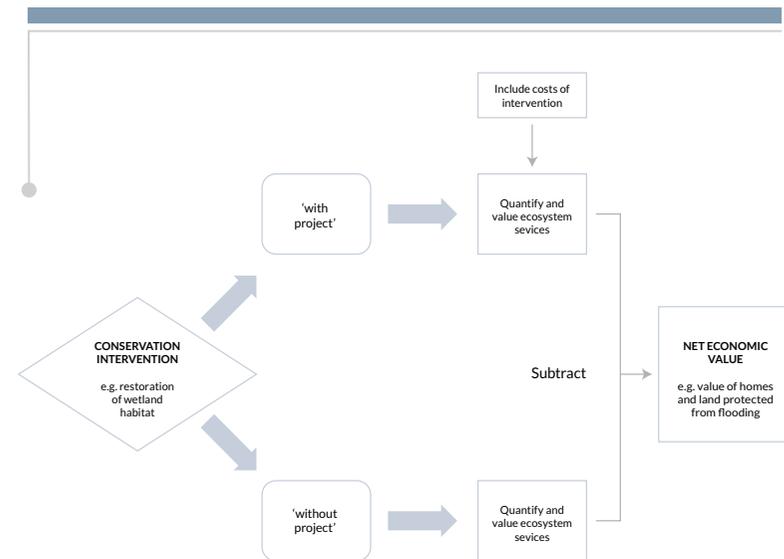
## GENERAL FACTSHEETS

### EVALUATING OUTCOMES AND IMPACTS OF PROJECTS AIMING TO MAINTAIN OR INCREASE THE VALUES OF ECOSYSTEM SERVICES

#### Factsheet: Evaluating outcomes and impacts of projects aiming to maintain or increase the values of ecosystem services

Some conservation projects include actions that aim to maintain or improve the delivery of ecosystem services (the benefits that people derive from nature) as part of a strategy to conserve species and/or habitats more effectively. Evaluation of the outcomes and impacts of conservation projects on ecosystem services is not covered by this manual because an entire toolkit exists with guidance on how changes in ecosystem services at a site can be measured.

The Toolkit for Ecosystem Service Site-based Assessment (TESSA): <http://www.birdlife.org/worldwide/science/assessing-ecosystem-services-tessa> can be used to compare the values of ecosystem services (in either biophysical or economic units) for a site under two scenarios: (a) with the project and (b) without the project (see Figure right).



For example, a project may carry out activities that aim to restore a wetland site for migratory birds. As part of this project, the restoration may also protect people's homes and farmland from flooding. The impact of the intervention on flood protection value can be demonstrated by measuring the actual impact of the created wetland at the end of the project, compared with the value without the project (i.e. if the intervention had not taken place). The value of that impact can be demonstrated in monetary (\$) or non-monetary terms (e.g. number of houses protected from flooding; area of land protected from flooding).

## GENERAL FACTSHEETS

### EVALUATING OUTCOMES AND IMPACTS OF PROJECTS AIMING TO MAINTAIN OR INCREASE THE VALUES OF ECOSYSTEM SERVICES

This requires identification of the “without project” comparison. In TESSA this is done by using a counterfactual approach whereby data on ecosystem services are collected from a similar site (in terms of environmental and social context) and extrapolated to the project site to provide alternative values from those obtained as a result of the project. It may also be applicable to use a before and after comparison if the state before the project is representative of what would happen without the project. Other approaches outlined in Step 2 could be used for the “without project” comparison provided the assumptions are made explicit.

**Livelihoods & Governance module:** This module in PRISM could be used to measure changes in some ecosystem services – specifically the benefits obtained from harvested wild goods (e.g. fuelwood, medicinal plants, fish) or cultivated goods (e.g. rattan, coffee) in relation to livelihoods. For example, see [Participatory Impact Assessment Method 1 - Before and after scoring](#) for guidance on how changes in income might be measured.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### Factsheet: Questionnaires

##### Summary

Questionnaires are one of the most commonly applied methods for gathering data from project participants. They can be more complex and time consuming to produce than is anticipated. However, thorough planning and piloting, ensuring questions relate to the aims of the evaluation, having a clearly identified strategy for securing responses and good preparation for data analysis can ensure that questionnaires are extremely valuable tools for action evaluation.

Questionnaire surveys can be carried out by telephone, post, or in person, and they have the potential to record information from a large sample of respondents. Interviews can be i) fully structured, using set questions that the interviewer sticks to, or ii) semi-structured, using open-ended questions with the interviewer following up interesting responses with supplementary questions, or iii) respondent-led conversations, with the interviewer having prepared some areas for discussion but allowing the conversation to unfold as the respondent wishes. The choice of which of these variants to use depends on the type and aim of the intervention and the resources available. For example if an intervention is focused on influencing the attitudes of a small number of herders in the mountains, it is not worthwhile to use a postal survey of the entire village to evaluate effectiveness. Conversely if the intervention is trying to raise awareness of a conservation threat throughout a community, in-depth and time-consuming interviewing of a very few select people is unlikely to indicate whether the message has been received across the community.

Some sub-sampling will often be necessary because of time and money restrictions, and there is the possibility that key community members may be aware of attitudes in the wider community.

##### Main questionnaire survey types

**Pre-post questionnaires:** Surveys that require participants to complete two questionnaires, one before the project and one after the project.

**Retrospective pre-post questionnaires:** Surveys that require participants to complete a single questionnaire after the project action which asks them to compare their answers with the situation before the project.

**Post activity questionnaires:** Questionnaires comprising a set of questions asking participants to rate the effectiveness of a particular activity (e.g. a training workshop, a presentation, a community engagement event).

**Post project questionnaires:** Questionnaires that ask participants to self-report on changes that have occurred as a result of the project. This is similar to a retrospective pre-post questionnaire except that it does not ask participants to rate their knowledge/attitudes/behaviours before the project.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEPS 1 & 2

#### Required steps

##### Step 1. Determine the purpose

Before creating a questionnaire, start by answering a few important questions:

- What do I need to know?
- Why do I need to know it?
- What will happen as a result of this questionnaire?
- Can I get the information from existing sources instead of conducting a survey?
- Are there any ethical issues associated with the data collection?
- Is the topic covering sensitive issues e.g illegal wildlife trade, culturally sensitive topics, etc? If so, this will affect the methods used.

It is a good idea to start with your evaluation objectives and questions. Here are some examples:

Evaluation objectives:

- To determine the level of bushmeat consumption in households in the project area and in control area(s).
- To determine the average number of patrols carried out by rangers before and after a training programme.

- To determine the average cost per meal in the households of project participants.

Evaluation questions:

- How many households in the community hunt on a weekly basis?
- What new skills do project participants possess after a training course?
- What is the monthly income of households involved in the project?

##### Step 2. Decide what you are measuring

As with determining the purpose, this should be based on the objectives of your action and the evaluation of its outcomes and impact. Consider which of the following you are aiming to measure:

- Attitude
- Knowledge
- Skills
- Goals, intentions, aspirations
- Behaviours and practices
- Perceptions of knowledge, skills, or behaviour.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEP 3

#### Step 3. Decide who should be asked

The population you sample from, as well as the sampling method you use, affects how your research findings can be generalised. In other words, for whom do the results apply? This is an indication of the external validity of the study.

- What is the appropriate population (group of people/ subjects) to be studied or questioned?
- A population is the complete set of subjects that can be studied: people, objects, animals, plants, etc.
- A sample is a sub-set of subjects that can be studied to make the evaluation/research project more manageable.

Once a target audience is defined, the questionnaire development may be influenced by features of that audience, for example:

- the age of respondents, particularly if working with children;
- familiarity with tests and questionnaires;
- potential cultural or language barriers;
- ethical considerations for engaging with this group of participants;
- gender, including restrictions and hierarchies. For example, can you interview people of the opposite sex, can you interview people that are not head of the household (power dynamics), etc? How can responses be gathered from disadvantaged voices (e.g. women)?



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEPS 4 & 5

#### Step 4. Understand the audience

It is important to know about the target audience for the questionnaire. This will inform the decisions made at Step 5 about how to collect responses. Factors which may help to define the audience for the questionnaire include:

- The likelihood of interaction with the people the project is aiming to influence, e.g. do you want to question people who attend a certain event, use a particular habitat or location, or interact with a target species?
- A representative public sample requires a broad range of respondents, and data from a census could be useful in assessing whether the sample really represents the population. For example, if all hunters are young males, their attitudes may not represent those of the older or female members of the population.
- Employment may be important, for example selecting people working in fisheries to monitor relevant behavioural responses.
- Hobbies – some questionnaires will target people who have connections with a particular subject through the way they spend their free time, rather than their paid employment.
- Finding out when are people most easily engaged. For example trying to sample parents with young children in the evening may mean they are distracted by family responsibilities; in which case weekends may be a better time.

#### Step 5. Choose an appropriate means of data collection

The sampling method can then be decided, depending on the population sample selected:

- Should a census or sampling be used?
- If a large enough random sample is taken, the results can be statistically similar to taking a census of an entire population, yet involving less effort and cost.

There is a variety of ways in which samples can be chosen from a population:

- Simple random (e.g. pulling names from a hat).
- Systematic random (e.g. every fifth name – but be careful that the system you choose does not accidentally match a pattern in the population being sampled).
- Stratified random (separate samples for each subgroup).
- Cluster sampling (treating intact groups that cannot be broken up, such as classrooms, as subjects to be sampled).

Whatever population is studied and whichever sampling method is used, it is important to cover a sufficiently high percentage of respondents to ensure that the sample is truly representative of the population being studied. Non-response error affects the validity of the study, and a plan for recording non-responses then dealing with them, should be determined in advance.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEPS 5 & 6

Other possible errors can be avoided with simple procedures: “sampling error” is reduced by using a large, random sample or conducting a census; “frame error” is minimised by making sure that the list of potential subjects is current and accurate; and “selection error” is avoided by eliminating duplication from these lists.

Two further elements of data collection need to be considered: i) what format the questionnaire will take and ii) how it will be distributed. Formats can include personal (face-to-face) interviews, online questionnaires, telephone interviews and mailed questionnaires. Consider the literacy level of the respondents when choosing a format for data collection, and ensure that intended respondents are not excluded by the format you choose. Distributing a questionnaire is a vital link in ensuring that data is collected. The channels through which a questionnaire or interview is made available could skew the types of people surveyed.

#### Step 6. Establish Free, Prior and Informed Consent (FPIC)

This lets the respondents know they are participating in a study and how their information will be treated. “Passive” consent is assumed if the respondent completes and returns the questionnaire, but contact details should be provided to give the respondent the option of withdrawing their data after submission. “Active” consent requires a participant to give formal approval (e.g. by signing a form declaring that the respondent explicitly agrees to participate, or allows his or her minor child to take part). See Factsheet: [Developing ethical protocols for an evaluation for more information on FPIC.](#)



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEP 7

#### Step 7. Choose a collection procedure: confidential vs. anonymous

##### Confidential

- Names or other identifiers collected in the questionnaire or interview can be used for follow-up data collection or to match data from pre-action with data from post-action.
- Individual data are not shared with anyone. Information is not used for any purpose other than that stated in the project.
- Confidentiality is never breached. This pledge is crucial for data protection purposes and for obtaining consent and ethical approval; in addition to obtaining honest, complete answers from respondents.
- Identifying information is anonymised for storage and analysis purposes (essential for anything that could in any way negatively impact the interviewee). Information should be destroyed after the survey is completed or, if the information needs to be stored for publication, this should be held on an encrypted hard drive and deleted once the publication is completed.

##### Anonymous

- Names and other identifiers are not asked of respondents.
- As no other identifying codes are used, the researcher is unable to follow up with non-respondents or to match data from pre-action with data from post-action. This may not be a problem when doing random interviews (such as exit surveys).
- Collecting basic descriptive information about respondents is still useful for comparing respondents with the population.
- One possible way of maintaining anonymity while also keeping track of non-respondents is to send a separate post-card along with the questionnaire. The respondent can return this card separately, enabling him or her to declare that “John/Mary Doe has returned the questionnaire”.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEP 8

##### Step 8. Choose measurement scale and scoring

Use scales that provide the information needed and are appropriate for respondents. Some options include:

##### Closed questions – quantitative data

A yes/no answer – e.g. Did you attend the workshop? Yes/No.

Agree/disagree with a statement – e.g. Do you agree or disagree with the following statement? Seabird populations on island X are healthy. Agree/Disagree.

Choose from a list of options – e.g. Which of the following resources is most important to your household? Rattan (cultivated), rattan (wild harvested), banana, rice, pineapple, cassava, timber, other forest products (e.g. honey, medicinal plants, mushrooms).

Rank order – e.g. From the following list choose the THREE which are the most important to your household: 1 = most important, 2 = second most often important 3 = third most important. Rattan (cultivated), rattan (wild harvested), banana, rice, pineapple, cassava, timber, other forest products (e.g. honey, medicinal plants, mushrooms).

Degree of agreement and disagreement: the Likert Scale – e.g. The training provided skills that I did not have before. Strongly agree, Agree, Neutral, Disagree, Strongly disagree, neither agree or disagree.

Rate Items – How useful would you rate the training element of the workshop? Not useful at all – Very useful: 1-7.

Feeling about a topic – e.g. Did you find the training workshop: Boring (1-5), Interesting (1-5), Unlikely (1-5), Likely (1-5), Risky (1-5), Safe (1-5), Important (1-5), Unimportant (1-5), Difficult (1-5), Easy (1-5).

##### Open questions – qualitative data

A statement – e.g. How has your relationship with park authorities changed since the project began?

List – e.g. Please list the main reasons why you visit the forest.

See the following factsheets for some further examples of questions and scales that can be used as part of a questionnaire survey:

[Sample questions and scales for evaluating attitudes and awareness actions](#)

[Training evaluation form: example questions and scales](#)



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEPS 9 & 10

#### Step 9. Provide a cover letter and instructions

- A cover letter or verbal introduction to the project should include:
  - o a brief statement of the purpose of the study and its usefulness (one sentence or phrase);
  - o the identity of any sponsor of the study;
  - o a promise of confidentiality and an explanation of identification methods (e.g. code number on questionnaire);
  - o free, prior and informed consent - the cover letter should include all of the information needed to gain FPIC, which is required for most research involving human subjects.
  - o a deadline for returning the survey;
  - o advice on what to do if questions arise or if the respondent wishes to withdraw after submitting their response;
  - o thanks to the respondents.
- Include simple instructions on how to complete each section (e.g. how to mark answers: pen/pencil, circle, check, etc.).

#### Step 10. Pilot test

To ensure that the survey instrument you develop is appropriate for your audience, “field test” your questionnaire with other people similar to your respondents before administering the final version. This will allow you to improve any unclear questions or procedures and detect any errors. Following recommendations in this Toolkit concerning questionnaire design and wording of questions will reduce systematic measurement error, and this will improve the reliability of your study.

#### Tips for designing and implementing a good questionnaire

##### Use plain language

- Be direct and unambiguous.
- Use the simplest language necessary.
- Avoid jargon and acronyms.
- Include definitions if needed.

##### Be brief

- Keep the questionnaire as short as possible (without jeopardising reliability).
- Focus on “need to know” questions and minimise “nice to know” information.
- Put the most important questions up front (respondents may get fatigued or hurried by later questions).
- Include questions about demographic information at the end, so the questionnaire is focused on the topic at hand.



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEP 10

#### Make sure questions match the measurement scale selected, and that the answer categories are precise

- Make sure answer choices correspond to the questions, both in substance and syntax.
- Be consistent in arranging the answers. While it is conventional to read English from left to right, and to go from “low” to “high,” the most important rule is to explain clearly the “rule” being used in this respect, and to apply it consistently throughout the questionnaire.
- Define timeframes when necessary. Instead of “recently,” specify e.g. “during August 2015”. When doing this it is helpful to give the respondent something to relate to (e.g. last monsoon).
- Make sure answer categories do not overlap e.g. having age categories for “20-30” and “30-40” means that someone who is 30 could tick either box.
- If you are using a continuum scale with numbers to represent concepts, make sure to “anchor” at least the top and bottom of the scale with terms that describe the meanings of the numbers (e.g. 1 = low, 10 = high).
- Balance the “negative” or “low” answer choices (both in number and degree) with “positive” or “high” choices on the scale. For example, don’t give only positive answer choices or five degrees of “positive” (e.g. great, excellent, super, fantastic, awesome) and only one extreme “negative” response choice (e.g. terrible). Be aware, if 0 is used in the middle of the scale people will centre there, so a scale of -2 to +2 is different from 1 to 5.

- An even number of answer choices doesn’t give the respondent an easy, “middle” choice. If you want to offer a “neutral” or “no opinion” choice, then do it by design, not by accident.
- Determine in advance how questions will be scored, what to do with missing data, incomplete or unclear responses, etc.

#### Ask only one question at a time

Do not use “double-barrelled” questions that may confuse the respondent into not knowing how to answer.

Consider the confusion created by these examples:

- Do you hunt pigs and monkeys?
- Do you grow coffee and rice?
- Have you seen any logging and hunting in the national park?



## GENERAL EVALUATION METHOD FACTSHEETS

### QUESTIONNAIRES

#### STEP 10

##### Avoid loaded or leading questions

Minimise bias or misinterpretation in questions by consulting experts and pilot-testing the questions with a sample of participants.

Examples of loaded questions:

- Do you treat your environment with kindness like a good person should?
- Do you feel you get enough support from the useless government?

Examples of leading questions:

- Do you agree that illegal forest clearance is a bad thing?

##### Arrange questions in a logical order

- Group similar questions together (e.g. by topic or scoring method).
- Number each question.

##### Provide space to tell more

- Give respondents room to comment on individual questions or on the survey as a whole.
- Ask for additional comments or suggestions.

##### Check readability

- Proof-read text before distributing it to participants.
- Test readability in the pilot-testing step.

##### Other resources:

Survey Monkey: <https://www.surveymonkey.co.uk/> – online tool for developing, distributing and analysing questionnaire surveys.

##### Acknowledgements:

Guidance in this factsheet is based on the following resources:

RCRE factsheet: A step-by-step guide to developing effective questionnaires and survey procedures for program evaluation & research - <http://cahnrs.wsu.edu/fs/wp-content/uploads/sites/4/2015/09/A-Step-By-Step-Guide-to-Developing-Effective-Questionnaires.pdf>.

Community Sustainability Engagement Evaluation Toolbox: Questionnaires - [http://evaluationtoolbox.net.au/index.php?option=com\\_content&view=article&id=58&Itemid=154](http://evaluationtoolbox.net.au/index.php?option=com_content&view=article&id=58&Itemid=154).



## GENERAL EVALUATION METHOD FACTSHEETS

### KEY INFORMANT INTERVIEWS

#### Factsheet: Key informant interviews

##### Summary

A key informant interview is a conversation between an interviewer and a person who can provide a well-informed picture of the issue being evaluated - often a leader in his or her field or community. Key informant interviews follow a script or guide, which may include prompts, called probing questions, that delve more deeply into an issue or ensure that informants answer questions in a way that is useful to the evaluation. Questions are open-ended and often require that the informants talk about their perceptions, experiences, and beliefs.

Interviews may be recorded (with participants' permission) and transcribed for later analysis. Where recording and transcription are not practical or acceptable, someone can take detailed notes. Key informant-interview data are usually qualitative. However, some quantitative data may be collected, as well; for example, the key informant's gender, age, and location or their estimate of the size of a community population.

#### What are key informant interviews useful for?

Key informant interviews are an affordable way to understand a community or an issue in a deep, nuanced way. They are flexible and allow new ideas and issues to emerge. They are also often relatively quick and affordable. On the other hand, there is the potential for an interviewer to influence informants' responses. Because key informant interviews can generate a large amount of qualitative data - data that must be reviewed systematically so as to maintain the findings' credibility - key informant interviews can be time-consuming and costly to analyse. Finally, key informants must be selected carefully so that they accurately represent the different viewpoints that may exist in relation to a project.



Photo credit: David Thomas



## GENERAL EVALUATION METHOD FACTSHEETS

### KEY INFORMANT INTERVIEWS

This method is useful in all phases of the project cycle - identification, planning, implementation, and evaluation. For example, it can provide information on the setting for a planned activity that might influence project design; or it could reveal why intended beneficiaries aren't using services offered by a project. Specifically, it is useful in the following situations:

- when qualitative, descriptive information is sufficient for decision-making;
- when there is a need to understand motivation, behaviour, and perspectives of customers and partners. In-depth interviews of programme planners and managers, service providers, host government officials and beneficiaries concerning their attitudes and behaviours about an activity can help to explain its successes and shortcomings.
  - when a main purpose is to generate recommendations. Key informants can help to formulate recommendations that can improve a programme's performance.
- when quantitative data collected through other methods need to be interpreted. Key informant interviews can illuminate the "how" and "why" of what happened: for example if a sample survey showed that farmers were failing to make loan repayments, key informant interviews could uncover the reasons for this.
- when preliminary information is needed to design a comprehensive quantitative study. Key informant interviews can help to frame the issues before the survey is undertaken.

#### Advantages:

- Provides information directly from knowledgeable people.
- Provides flexibility to explore new ideas and issues not anticipated during planning.
- Relatively inexpensive and simple to conduct.

#### Limitations:

- Not appropriate if quantitative data are needed.
- May be biased if informants are not carefully selected.
- Can be susceptible to interviewer biases.
- May be difficult to prove validity of findings.



## GENERAL EVALUATION METHOD FACTSHEETS

### KEY INFORMANT INTERVIEWS

#### STEPS 1 TO 4

#### Required steps

##### Step 1. Formulate study questions

These relate to specific concerns of the study. Study questions generally should be limited to five or fewer.

##### Step 2. Prepare a short interview guide

Key informant interviews do not use rigid questionnaires, since these inhibit free discussion. However, interviewers must have an idea of what questions to ask. The guide should list major topics and issues to be covered under each study question. Because the purpose is to explore a few issues in depth, guides are usually limited to 12 items. Different guides may be necessary for interviewing different groups of informants.

##### Step 3. Select key informants

The number should not be too large. It is preferable to start with a small number, since often more people end up being interviewed than is initially planned. Key informants should be selected for their specialised knowledge and insightful perspectives on a topic. Planners should take care to select informants that represent range of different points of view. Selection consists of two tasks. First, identify the groups and organisations from which key informants should be drawn - for example, host government agencies, project implementing agencies, contractors,

beneficiaries. It is best to include all major stakeholders so that a diversity of interests and perceptions can be captured. Second, select a few people from each category after consulting with people familiar with the groups under consideration. Snowball sampling can also be used, where interviewed individuals are asked at the end of the interview for their suggestions for the next person you can interview about the same subject.

##### Step 4. Establish Free, Prior & Informed Consent (FPIC)

This lets the informants know they are participating in a study and how their information will be treated. Establishing FPIC requires a participant to give formal approval (e.g. by signing a form declaring that the informant explicitly agrees to participate). See Factsheet: [Developing ethical protocols for an evaluation](#) for more information on FPIC.



## GENERAL EVALUATION METHOD FACTSHEETS

### KEY INFORMANT INTERVIEWS

#### STEPS 5, 6 & 7

#### Step 5. Conduct interviews

**Establish rapport.** Begin with an explanation of the purpose of the interview, the intended uses of the information and assurances of confidentiality. Often informants will want assurances that the interview has been approved by relevant officials. Except when interviewing technical experts, questioners should avoid jargon.

**Sequence the questions.** Start with factual questions. Questions requiring opinions and judgments should follow. In general, begin with the present and move to questions about the past or future.

**Phrase questions carefully** to elicit detailed information. Avoid questions that can be answered by a simple yes or no. For example, questions such as “Please tell me about the outreach campaign” are better than “Do you know about the outreach campaign?”

**Use probing techniques.** Encourage informants to detail the basis for their conclusions and recommendations. For example, an informant’s comment such as “The water programme has really changed things around here” can be probed for more details, such as “What changes have you noticed?” “Who seems to have benefited most?” “Can you give me some specific examples?”

**Maintain a neutral attitude.** Interviewers should be sympathetic listeners and avoid giving the impression of having strong views on the subject under discussion. Neutrality is essential because some informants, trying to be polite, will say what they think the interviewer wants to hear.

**Minimise translation difficulties.** Sometimes it is necessary to use a translator, which can change the dynamics and add

difficulties. For example, differences in status between the translator and informant may inhibit the conversation. Often information is lost during translation. Difficulties can be minimised by using translators who are not known to the informants, and briefing translators on the purposes of the study to reduce misunderstandings, and having translators translate the interview word for word.

#### Step 6. Take adequate notes

Interviewers should take notes and develop them in detail immediately after each interview, to ensure accuracy. Use a set of common sub-headings for interview texts, selected with an eye to the major issues being explored. Common sub-headings ease data analysis. Consider using a dictaphone as a back-up, but be mindful that recordings can take a long time to transcribe afterwards.

#### Step 7. Analyse interview data

At the end of each interview, prepare an interview summary sheet which provides an overview of the gathered information organised into manageable themes, issues, and recommendations. Each summary should provide information about the key informant’s position, the reason for their inclusion in the list of informants, the main points made, the implications of these observations, and any insights or ideas the interviewer had during the interview.

Refer to the factsheet [Analysing qualitative data](#) for more information.



## GENERAL EVALUATION METHOD FACTSHEETS

### KEY INFORMANT INTERVIEWS

#### STEP 8

##### Step 8. Check for reliability and validity

Key informant interviews are susceptible to error, bias and misinterpretation, which can lead to flawed findings or recommendations.

Check representativeness of the key informants. Take a second look at the key informant list to ensure that no significant groups were overlooked.

Assess reliability of the key informants. Assess the informants' knowledge, credibility, impartiality, willingness to respond, and the presence of any outsiders who may have inhibited or otherwise influenced their responses. Greater weight can be given to information provided by more reliable informants.

Check for interviewer or investigator bias. One's own biases as an investigator should be examined, including tendencies to concentrate on information that confirms preconceived notions and hypotheses, to seek consistency too early, to overlook evidence that is inconsistent with earlier findings and to be partial to the opinions of elite key informants.

Check for negative evidence. Make a conscious effort to look for evidence that questions preliminary findings. This brings out issues that may have been overlooked.

Get feedback from informants. Ask the key informants for feedback on major findings. A summary report of the findings might be shared with them, along with a request for written comments. Often a more practical approach is to invite them to a meeting where key findings are presented, and to ask for their feedback.

##### Acknowledgements

Guidance in this factsheet is based on the following resources:

PACT - Field Guide for Evaluation (2014) - [http://betterevaluation.org/sites/default/files/Field%20Guide%20for%20Evaluation\\_Final.pdf](http://betterevaluation.org/sites/default/files/Field%20Guide%20for%20Evaluation_Final.pdf).

USAID Center for Development Information and Evaluation (1996). Conducting key informant interviews. Performance monitoring & evaluation tips. Washington DC, USAID - [http://pdf.usaid.gov/pdf\\_docs/PNABS541.pdf](http://pdf.usaid.gov/pdf_docs/PNABS541.pdf).



## GENERAL EVALUATION METHOD FACTSHEETS

### FOCUS GROUPS

#### Factsheet: Focus groups

##### Summary

In a focus group, a facilitator guides a group of people in a discussion of their experiences, feelings, and preferences in relation to the project or project action. The facilitator raises issues identified in a discussion guide and uses probing techniques to solicit views, ideas, and other information.

#### What are focus groups useful for?

Focus group can be used to solicit views, insights, and recommendations of programme staff, customers, stakeholders, technical experts, or other groups.

##### Advantages:

- Can be low cost (but not in all situations).
- Provides results in a short time period (once arranged).
- Flexible format can allow the facilitator to explore unanticipated issues and encourages interaction among participants.
- In a group setting participants may be able to provide checks and balances on each other, reducing false or extreme views.

##### Limitations:

- Flexible format makes it susceptible to facilitator bias, which can undermine the validity and reliability of findings.
- Discussions can be side-tracked or dominated by a few vocal individuals.
- Generates relevant qualitative information, but no quantitative data for making generalisations for the whole population.



## GENERAL EVALUATION METHOD FACTSHEETS

### FOCUS GROUPS

#### STEPS 1 TO 4

#### Required steps

##### Step 1. Select the team

Decide who will facilitate the workshop and who will take notes. Ideally the facilitator should be a native speaker who can put people at ease. The team should have substantive knowledge of the topic under discussion.

If the discussions are to be conducted by someone without previous experience in focus group techniques, training is suggested. This training can take the form of role playing, formalised instruction on topic sequencing and probing for generating and managing group discussions, as well as pre-testing discussion guides in pilot groups.

##### Step 2. Select the participants

First, identify the types of groups and institutions that should be represented (such as local people who are involved/affected by the project, project staff, partners, technical experts, government officials) in the focus groups. Often separate focus groups are held for each type of audience. Second, identify the most suitable people in each group. One of the best approaches is to consult key informants who know about local conditions ahead of time to select suitable focus groups.

Participants in each group should be reasonably homogenous, from similar socioeconomic and cultural backgrounds. They should also share common traits related to the discussion topic. For example, in a discussion on hunting, participants from households who engage in hunting and park rangers responsible for enforcing regulations should participate in separate focus groups. Household members may be reluctant to discuss hunting in front of rangers, as they may be concerned about potential repercussions. Ideally, people should not know each other. Anonymity lowers inhibition and prevents the formation of cliques.

##### Step 3. Establish Free, Prior & Informed Consent (FPIC)

This lets the informants know they are participating in a study and how their information will be used. Establishing FPIC requires a participant to give formal approval (e.g. by signing a form declaring that the informant explicitly agrees to participate). See Factsheet: [Developing ethical protocols for an evaluation](#) for more information on FPIC.

##### Step 4. Decide on timing and location

Discussions should last around one to two hours and should be conducted in a location that is easy for participants to reach, and with some degree of privacy.



## GENERAL EVALUATION METHOD FACTSHEETS

### FOCUS GROUPS

#### STEPS 5 & 6

##### Step 5. Prepare a list of discussion topics

In advance, prepare a brief outline that covers the topics to be discussed. It should contain a limited number of topics, allowing some time and flexibility to pursue unanticipated but relevant issues. The outline provides a framework for the facilitator to use in exploring, probing and asking questions. Use carefully worded questions to introduce each topic and to keep the discussion focused. Comments raised can still be explored when needed.

##### Step 6. Conduct the discussion

**Establish rapport.** Often participants do not know what to expect from focus group discussions. It is helpful for the facilitator to outline the purpose and format of the discussion at the beginning of the session, and to set the group at ease. Participants should be told that the discussion is informal, that everyone is expected to participate and that divergent views are welcome.

**Phrase questions carefully.** Certain types of questions impede group discussions. For example, yes-or-no questions are one-dimensional and do not stimulate discussion. “Why” questions put people on the defensive and can cause them to take “politically correct” sides on controversial issues.

**Use open-ended questions where possible.** These are more useful because they allow participants to tell their story in their own words and to add details that can result in unanticipated findings.

For example:

- How do you feel the project has affected the community?
- What do you think about the national park?

If the discussion is too broad, the facilitator can narrow responses by asking such questions as:

- How do you feel the project’s education programme has affected the community?
- What do you think about the number of tourists visiting the national park?

**Use probing techniques.** When participants give incomplete or irrelevant answers, the facilitator can use the following techniques to try to gain fuller, clearer responses:

- Repeat the question.
- Say you have limited understanding of the issue, and ask for specific details.
- Pause for the answer.
- Repeat the reply - hearing it again sometimes stimulates conversation. Ask “when”, “what”, “where”, “which”, and “how” questions to provoke more detailed information.
- Use neutral comments - “Anything else?” “Why do you feel this way?”.



## GENERAL EVALUATION METHOD FACTSHEETS

### FOCUS GROUPS

#### STEPS 6 & 7

**Try to control the discussion.** In most groups, a few individuals tend to dominate the discussion. To encourage more balanced participation:

- Address questions to individuals who are reluctant to talk.
- Give non-verbal cues (look in another direction or stop taking notes when an individual talks for an extended period).
- Intervene, politely summarise the point, then re-focus the discussion.
- Take advantage of a pause and say “Thank you for that interesting idea, perhaps we can discuss it in a separate session. Meanwhile with your consent, I would like to move on to another item”.

**Minimise group pressure.** When an idea is being adopted without any general discussion or disagreement, more than likely group pressure is occurring. To minimise group pressure the facilitator can probe for alternate views. For example, the facilitator can raise another issue, or say “We had an interesting discussion but let’s explore other alternatives.”

#### Step 7. Record the discussion

Tape recordings and written notes are useful. Notes should be extensive and reflect the content of the discussion as well as non-verbal behaviour (facial expressions, hand movements).

Shortly after each group interview, the team should summarise the information, the team’s impressions, and implications of the information for the study. Ideally, the discussion should be reported in participants’ language, retaining their phrases and grammatical usage.



## GENERAL EVALUATION METHOD FACTSHEETS

### FOCUS GROUPS

#### STEP 8

#### Step 8. Analyse results

After each session, the team should assemble the interview notes (transcripts of each focus group interview), the summaries, and any other relevant data to analyse trends and patterns. Refer to the factsheet [Analysing qualitative data](#) for more information.

When analysing the results, the team should consider:

- Words. Weigh the meaning of words participants used. Can a variety of words and phrases categorise similar responses?
- Framework. Consider the circumstances in which a comment was made (context of previous discussions, tone and intensity of the comment).
- Internal agreement. Consider whether shifts in opinions during the discussion were caused by group pressure.
- Precision of responses. Decide which responses were based on personal experience and give them greater weight than those based on vague impersonal impressions.
- The big picture. Pinpoint major ideas. Allocate time to step back and reflect on major findings.

Purpose of the report. Consider the objectives of the study and the information needed for decision making. The type and scope of reporting will guide the analytical process. For example, focus group reports typically are: (1) brief oral reports that highlight key findings; (2) descriptive reports that summarise the discussion; or (3) analytical reports that reveal trends, patterns.

#### Acknowledgement

Guidance in this factsheet is based on USAID Center for Development Information and Evaluation (2011): Conducting focus group interviews.

Performance monitoring & evaluation tips. Washington DC, USAID - [http://pdf.usaid.gov/pdf\\_docs/Pnadw110.pdf](http://pdf.usaid.gov/pdf_docs/Pnadw110.pdf).



## GENERAL EVALUATION METHOD FACTSHEETS

### DIRECT OBSERVATION

#### STEP 1

#### Factsheet: Direct observation

##### Summary

Most evaluation teams conduct some fieldwork, observing what's actually going on at activity sites. Often this is done informally, without much thought to the quality of data collection. Direct observation techniques allow for a more structured process.

##### What is direct observation useful for?

Direct observation techniques allow for a systematic, structured process, using well-designed observation record forms.

##### Advantages:

- An event, institution, facility, or process can be studied in its natural setting, thereby providing a richer understanding of the subject.

##### Limitations:

- Susceptible to observer bias. The very act of observation also can affect the behaviour being studied.

#### Required steps

##### Step 1. Determine the focus

Because of time and resource constraints, direct observation has to be selective, looking at a few actions, events, or assumptions that are central to the evaluation questions. For example, suppose you want to evaluate a project which is working to promote alternative sources of fuelwood. Here, evaluation could look at a variety of areas - e.g. community knowledge, fuelwood harvesting rates, whether these groups are working more effectively or levels of awareness among members of the public. The team should narrow the focus to one or two of the areas that are likely to generate the most useful information and insights.

Next, break down each action, event, or assumption into sub-components. For example, if the team decides to look at capacity of local conservation groups, prepare a list of the tasks to observe, such as preparation of vaccine, consultation with mothers, and vaccine administration.

Each task may be further divided into sub-tasks; for example, local conservation groups might carry out habitat restoration, awareness raising or advocacy work.

If you also want to assess physical facilities and surroundings, prepare an inventory of items to be observed.



## GENERAL EVALUATION METHOD FACTSHEETS

## DIRECT OBSERVATION

### STEPS 2 & 3

#### Step 2. Develop direct observation forms

The observation record form should list the items to be observed and should provide spaces to record observations. These forms are similar to survey questionnaires, but investigators record their own observations, not respondents' answers. Observation record forms help to standardise the observation process and to ensure that all important items are covered. They also facilitate better aggregation of data gathered from various sites or by various investigators.

When preparing direct observation forms, consider the following:

1. Identify in advance the possible response categories for each item, so that the observer can answer with a simple yes or no, or by checking the appropriate answer. Closed response categories help to minimise observer variability, and therefore improve the quality of data.
2. Limit the number of items in a form. Forms should normally not exceed 40–50 items. If necessary, it is better to use two or more smaller forms than a single large one that runs to several pages.
3. Provide adequate space for recording additional observations for which response categories were not determined.
4. Use of computer software designed to create forms can be very helpful. It can help to create a neat, unconfusing form that is easily completed.

#### Step 3. Select the site(s)

Observations at a single site may be justified if the site can be treated as a typical case or if it is unique. Consider a situation in which all five local conservation groups established by a project have not been performing well. Here, observation of a single group may be justified as a typical case. Observations at a single group may also be justified when the case is unique; for example, if only one of five groups have been having major problems, and the purpose of the evaluation is to discover why. However, single site observations should generally be avoided, because cases which the team assumes to be typical or unique may not be. As a rule, several sites are necessary to obtain a reasonable understanding of a situation.

In most cases, teams select sites based on expert advice. The investigator develops criteria for selecting sites, then relies on the judgment of knowledgeable people. For example, if a team evaluating a project decides to observe three local conservation groups - one highly successful, one moderately successful, and one struggling - you may request project staff, local experts or other informants to suggest a few groups for each category. You will then choose three after examining their recommendations. Using more than one expert reduces individual bias in selection.

Alternatively, sites can be selected based on data from performance monitoring. For example, activity sites can be ranked from best to worst based on performance measures, and then a sample can be drawn from them.



## GENERAL EVALUATION METHOD FACTSHEETS

## DIRECT OBSERVATION

### STEPS 4, 5 & 6

#### Step 4. Decide on the best timing

Timing is critical in direct observation, especially when events are to be observed as they occur. Poor timing can distort findings. For example, participation in local conservation groups can vary depending on the time of year (e.g. when people are needed for planting/harvesting crops or a time of year when many people go on holiday). If Local Conservation Group activities are observed during these times then an inaccurate picture of its activities may result.

Similarly people and organisations often follow daily routines associated with set times. For example, credit institutions may accept loan applications in the morning; farmers in tropical climates may go to their fields early in the morning and return home by noon. Observation periods should reflect these rhythms.

#### Step 5. Establish Free, Prior & Informed Consent (FPIC)

This lets the informants know that they are participating in a study and how their information will be used. Establishing FPIC requires a participant to give formal approval (e.g. by signing a form declaring that the informant explicitly agrees to participate). See [Factsheet: Developing ethical protocols for an evaluation](#) for more information on FPIC.

#### Step 6. Conduct the field observation

**Establish rapport.** Before embarking on direct observation, a certain level of rapport should be established with the people, community, or organisation to be studied. The presence of outside observers, especially officials or experts, may generate some anxiety among those being observed. Often informal, friendly conversations can reduce anxiety levels.

Also, let them know the purpose of the observation is not to report on individuals' performance, but to find out what kind of problems in general are being encountered.

**Allow sufficient time for direct observation.** Brief visits can be deceptive, partly because people tend to behave differently in the presence of observers. It is not uncommon, for example, for health workers to become more caring or for extension workers to be more persuasive when being watched. However, if observers stay for relatively longer periods, people become less self-conscious and gradually start behaving more naturally. It is essential to stay at least two or three days on a site to gather valid, reliable data.

**Use a team approach.** If possible, two observers should observe together. A team can develop more comprehensive, higher quality data, and reduce individual bias.

**Train observers.** If many sites are to be observed, non-experts can be trained as observers, especially if observation forms are clear, straightforward, and mostly closed-ended.



## GENERAL EVALUATION METHOD FACTSHEETS

## DIRECT OBSERVATION

## STEPS 7, 8 & 9

### Step 7. Complete forms

Take notes as inconspicuously as possible. The best time for recording is during observation. However, this is not always feasible because it may make some people self-conscious or may disturb the situation. In these cases, recording should take place as soon as possible after observation.

### Step 8. Analyse the data

Data from closed-ended questions from the observation form can be analysed using basic procedures such as frequency counts and cross-tabulations. Statistical software packages such as SAS or SPSS facilitate such statistical analysis and data display.

Analysis of any open-ended interview questions can also provide extra richness of understanding and insights. Here, use of database management software with text storage capabilities, such as dBase, can be useful.

### Step 9. Check for reliability and validity

Direct observation techniques are susceptible to error and bias that can affect reliability and validity. This can be minimised by following some of the procedures suggested, such as checking the representativeness of the sample of sites selected; using closed-ended, unambiguous response categories on the observation forms; recording observations promptly; and using teams of observers at each site

#### Acknowledgement

Guidance in this factsheet is based on USAID (2011): Using direct observation techniques.

Performance monitoring & evaluation tips factsheet. Washington DC, USAID - [http://pdf.usaid.gov/pdf\\_docs/pnadw104.pdf](http://pdf.usaid.gov/pdf_docs/pnadw104.pdf).



## GENERAL EVALUATION METHOD FACTSHEETS

### DOCUMENTARY EVIDENCE

#### Factsheet: Documentary evidence

##### Summary

Documentary evidence refers to the use of anything constituting a “document” which provides a record of the variables used to assess change in indicators.

Various types of document may be used as sources of evidence, including public records (from schools, clinics); publications (magazines, newspapers); private papers (diaries, letters); minutes and records of meetings (NGOs, CBOs, government); legal documents; financial records, budgets and records of trade and marketing; websites and webpages (including social media); and visual documents (e.g. videos, films and photographs). When planning to use documentary methods to assess impacts, it is important to be aware of what documents are available, and whether you can have access to them.

Documentary evidence can be used in three main ways:

**Direct use of documentary data/information:** In many cases the content of documents (or the documents themselves) provide a direct indication of change relevant to a project’s objectives. For example, legal documents which show changes in tenure or rights to use land and resources or attendance records of meetings which show increased attendance by women.

**Content analysis / quantitative analysis:** Content analysis is a method for summarising any form of content by counting various aspects of the content. This enables objective evaluation. Content analysis, although it often analyses written words, is a quantitative method, and the results are numbers and percentages. For

example, a project that seeks to change awareness of the need to prevent bushfires may analyse the content of newspapers over a 12-month period to see how often key words such as “bushfire”, “erosion”, and “climate change” appear.

**Analytical reading:** This involves thinking carefully, critically and deeply when reading documents – even for example quantitative records. As noted below, any author of a document has a background, experiences and views which may affect the way they present information – what is included and what is left out. Reading documents analytically and critically aims to make sense of this, and to interpret documents in the context of other issues, previously gained knowledge and information.

Documentary data need to be interpreted with caution – it is important to be aware of how documents have been used and developed – by whom and for what purpose. Is the information contained in the document credible and representative; is it trustworthy? For example, can attendance records at a school be trusted if the teacher who compiles them is paid according to the number of pupils?



## METHOD FACTSHEETS AND ANNEXES

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### Evaluation Design Factsheets

[Participatory Impact Assessment](#)

[Interviewing key informants](#)

[Theory-based designs](#)

[Matching designs](#)

[Before and after designs](#)

[Decision tree for selecting an evaluation design](#)

## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: PARTICIPATORY IMPACT ASSESSMENT

### Evaluation design: Participatory Impact Assessment

#### Summary

This is type of design that focuses on asking project participants about their perceptions of what changes have occurred. It results in both quantitative and qualitative data, with participants being asked direct questions about the kinds of outcomes and impacts the project has brought about. It is particularly useful for evaluating the ways in which the project has affected stakeholders. **For many small/medium-sized conservation projects that involve people, this is likely to be the most feasible way of attributing change to the project.** This type of design is attractive in that it can be relatively cheap, data are relatively easy to obtain and a baseline study does not need to have been carried out. However care must be taken in order to generate results that are useful and valid.

For further reading refer to Catley et al. (2013): p45–50: [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf) which provides a number of examples of three different ways in which participatory methods can be used to evaluate social outcomes and impacts.

#### Process

Participatory Impact Assessment (PIA) is based on the recognition that “local people are capable of identifying and measuring their own indicators of change” (Catley et al. 2013: 5). PIA aims to answer three key questions:

- What changes have there been in the community since the start of the project?
- Which of these changes are attributable to the project?
- What difference have these changes made to people’s lives?



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: PARTICIPATORY IMPACT ASSESSMENT

### STEPS 1 & 2

Eight main steps are proposed in the PIA approach:

**Step 1.** Define the questions to be answered - Many impact assessments and evaluations try to answer too many questions, leading to superficial or inconclusive results on a wide range of issues and hence uncertainty about how to use this information. Although it is tempting to try and capture as much information about a project as possible, it is usually better to limit the impact assessment to a maximum of five key questions, and answer these questions with confidence. If you have already worked with communities to identify their impact indicators at the beginning of the project, the assessment questions will be framed according to these indicators. More likely, you will be using a retrospective approach, and working with project participants jointly to define the assessment questions.



**Step 2.** Define the geographical and time limits of the project - Defining the geographical (spatial) boundaries of a project aims to ensure that everyone understands the physical limits of the area in which impact is supposed to take place. Defining the project's time boundaries aims to ensure that everyone is clear about the time period being assessed. Participatory (or community) mapping is a useful visualisation method to use at the beginning of an assessment to define the geographical boundary of the project area (see factsheet: [Community mapping](#)). It also acts as a good "ice-breaker", since many people can be involved. A timeline is an interviewing method that captures the important historical events in a community, as perceived by the community itself, and it positions the project start date and end date against these events. This method helps to ensure that everyone involved in the assessment understands which project is being assessed as well as the project timeframe, and it helps people to recall events and changes that occurred during the project.



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: PARTICIPATORY IMPACT ASSESSMENT

### STEP 3

**Step 3. Identify and prioritise locally defined impact indicators - PIA proposes the use of indicators identified by community participants, since they have their own priorities for improving their lives, and their own ways of measuring change.**

- One way of collecting community indicators of impact is simply to ask project participants, when the project starts, 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. These benefits are impact indicators.
- 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 compared with those of men.
- If the community or participants produce many impact indicators, ask them to prioritise 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.

- An understanding of the context is essential in deriving meaning from these indicators. Simply measuring changes in livelihoods impact indicators will not tell us 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.
- One of the strengths of participatory methods, if used correctly, is that they can help to reveal important contextual factors (the complex social, political and economic contexts that affect project outcomes) and so improve understanding of the mechanisms through which change has or has not been achieved. Participatory selection of indicators is an important part of this process.



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: PARTICIPATORY IMPACT ASSESSMENT

### STEPS 4, 5 & 6

**Step 4. Decide which methods to use, and test them - This refers to the data collection methods used to measure the indicators. The following factsheets outline methods that can be used as part of a PIA:**

- [PIA Method 1: Before and after scoring](#)
- [PIA Method 2: Proportional piling](#)
- [PIA Method 3: Tally method](#)
- [PIA Method 4: Matrix scoring](#)
- [PIA Method 5: Before and after impact calendars](#)

Each method has its strengths and weaknesses, and some are more appropriate in certain cultures. Where methods produce numerical measurements it is essential that they are conducted alongside a semi-structured interview process, in order to understand the reasons for any observed changes.

**Step 5. Decide which sampling method and sample size to use - The sampling method is likely to be purposive (e.g. “typical” villages) or random sampling. There is no simple answer to the question of what sample size to use: this depends on the type and number of questions and the methods used. In most situations, the important thing is to capture the overall trend, and this can usually be done with a reasonably small sample size as long as the methods are applied consistently.**

**Step 6. Assess project attribution - Participatory ranking and scoring methods can be used to assess attribution: in general, the preferred approach is to try to separate the project and non-project causative factors, and to find the relative importance of these factors in the explanation of an identified positive or negative outcome or impact. By identifying what changes (if any) can be specifically attributed to project activities, PIA places the project activities within the wider economic, social and environmental context of an area, alongside a range of non-project factors that influence livelihood strategies and outcomes.**



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: PARTICIPATORY IMPACT ASSESSMENT

### STEPS 7 & 8

**Step 7. Triangulate - Triangulation (using multiple methods and/or data sources to increase the credibility and validity of results) is important for all data collection methods, including participatory methods. Information and numbers from PIA can be cross-checked by:**

- reading secondary reports, statistics and literature related to the project area, and to similar past projects;
- using different PIA methods to measure the same indicator;
- asking the same question in different ways within a given PIA, e.g. combining ranking or scoring with an informal interview.

**Step 8. Feed back and verify the results with the community - It is essential to discuss the results of the analysis with communities and other stakeholders. This is a last opportunity to “ground-truth” the results, and the discussions usually reveal further insights into project outcome and impact processes. Focus groups, e.g. by gender, are advisable for getting the best feedback quality.**

With all participatory methods there is a danger that respondents are more likely to cite project-related factors if someone from the project is administering the survey. It is better, therefore, if you can get an independent third party to carry out the assessments.



## EVALUATION DESIGN FACTSHEETS

### EVALUATION DESIGN: INTERVIEWING KEY INFORMANTS

#### Evaluation design: Interviewing key informants

This approach uses key informant interviews to ask certain key individuals for information to gain a measure of what conditions were like before the project, what changes have occurred, what would have happened in the absence of the project, to identify other possible explanations and, if feasible, to assess whether these explanations can be ruled out. Examples of key informants include experts with particular knowledge of the project's target site/species or the particular action that the project is carrying out. Individual experts can be consulted, but it is usually preferable to consult several so that a wide range of experience can be drawn on. The scorecards in the [species and habitat management module](#) are designed to be used in this way. See Factsheet: [Key informant interviews](#) for more information on how to conduct a key informant interview.



EVALUATION  
DESIGN  
FACTSHEETS

EVALUATION  
DESIGN:  
INTERVIEWING  
KEY  
INFORMANTS

**EXAMPLE****Example: Using key informant interviewing in socioeconomic assessment of Ebiil MPA in Palau**

Established in 2000, Ebiil became the first legislated Marine Protected Area of Palau. Located in Ngarchelong State, the area is an important aggregation site for groupers and is traditionally a trochus sanctuary. The Ebiil Conservation Act of 2000 closed this channel and surrounding reefs to all fishing activities and prohibited unauthorised entry. Socioeconomic assessments were conducted by the Palau International Coral Reef Center in 2005 and 2010 to generate information to improve the management of Ebiil and to ensure that the local community would benefit from the MPA. In the 2010 assessment, key informant interviews were conducted in addition to a survey that covered 279 households of Ngarchelong resource users. A combination of purposive and snowball sampling schemes was used to select 15 key informants, consisting of community and traditional leaders, related state governmental officers, and fishers and harvesters of marine life in the Ngarchelong reef areas. Purposive sampling is commonly used in qualitative research. A purposive sample includes people of interest to serve a very specific need or purpose of the study. Snowball sampling is where individuals are interviewed and asked at the end of the interview for their suggestions for the next person to be interviewed about the same subject.

While the results of the household survey provided quantitative data (such as proportions of people engaged in fishing and marine harvesting, proportion of ratings for perceived changes of marine life and catch effort, and perception of changes in and benefits for the community), the interviews were used to collect more in-depth data on changes in marine life and fishing patterns, benefits of Ebiil to the community, the effectiveness of the MPA management, and alternative ways of conserving the natural resources of Ngarchelong and supporting the well-being of the communities. The key informant interviews revealed that many traditional fishing methods, such as spear and trap fishing, are no longer practised. This seems to be the result of a combination of new technologies, loss of interest in using local methods, and a decline in fish numbers. The key informant interviews also highlighted the need for better enforcement and appreciation of the traditional “bul” (restrictions placed by traditional leaders and in this case a closed marine area) for conservation, and political conflicts (power struggles) between traditional leaders and state authorities. Despite the potential for better conservation results if the bul and the MPA were operated in a mutually supportive way, there are existing conflicts that would need to be addressed and resolved for this to happen.

Source: <https://www.conservationgateway.org/Documents/Measures%20Case%20Study%20Ebiil%20MPA,%20Palau.pdf>



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: THEORY-BASED DESIGNS

### Evaluation design: Theory-based designs

A theory-based design uses the project's Theory of Change to test whether the project's actual results match the results that are mapped out in the Theory of Change. First the project is mapped out in a Theory of Change and then data are collected at each stage in the chain. If the results match what was expected then this can be an indication that the change observed is due to the project (see Figure 1). Conversely if the results do not match the Theory of Change, this casts doubt on the ability to attribute any changes to the project (see Figure 2). In the case of Figure 2 you would then look to investigate the reasons why the outcomes laid out in the Theory of Change did not occur as expected.

These approaches are popular because they do not require a control/comparison group and they are often less resource-intensive than most designs that use a counterfactual. However, using this type of design effectively requires care, and above all a thorough understanding of the mechanisms that drive change and the systems being impacted.

An evaluation using a theory-based design might include the following (Adapted from UNICEF Impact Evaluation Brief 10: Strategies for Causal Attribution): [https://www.unicef-irc.org/publications/pdf/brief\\_6\\_overview\\_strategies\\_causal\\_attribution\\_eng.pdf](https://www.unicef-irc.org/publications/pdf/brief_6_overview_strategies_causal_attribution_eng.pdf)

- **Achievement of intermediate outcomes** – checking whether all cases that achieved the final impacts also achieved the intermediate outcomes identified in the Theory of Change.
- **Checking results against expert predictions** – making predictions based on the Theory of Change or an emerging theory of wider contributors to outcomes, and then following up on whether or not these predictions actually materialise over time.
- **Checking timing of impacts** – determining whether the timing of impacts is consistent with a causal relationship, again with reference to the Theory of Change. For example, whether the impact occurs a reasonable time after the programme or policy has taken effect.
- **Checking consistency with existing literature** – checking results against what is known from reviewing the literature in the area of interest, to identify consistencies/inconsistencies. This must be done cautiously and with explicit mention of any limitations in the existing literature.



EVALUATION DESIGN FACTSHEETS  
EVALUATION DESIGN: THEORY-BASED DESIGNS

FIGURE 1: THEORY OF CHANGE WHERE RESULTS SUPPORT CAUSAL ATTRIBUTION.



FIGURE 2: THEORY OF CHANGE WHERE RESULTS DO NOT SUPPORT CAUSAL ATTRIBUTION.



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: THEORY-BASED DESIGNS

- **Interviewing key informants** – this is not about asking key informants whether they believe the action has produced the impacts (which can be affected by their level of knowledge of causal processes and their intentions regarding the continuation of the action). It is instead about asking them to explain the causal processes following their involvement. For example, in a programme that aims to support the national government to develop new evidence-based policies, a key informant interview might ask about the process of developing the policies, and work backwards to the programme, avoiding leading questions that assume the programme has been the major cause. These interviews can provide evidence to explain, for example, how a training programme made a difference in terms of the government's subsequent ability to develop and negotiate particular policies.

A related but slightly different approach involves identifying and considering possible alternative explanations for the achievement of outcomes and impacts and then gathering data to see if these can be ruled out.

**Interviewing key informants** – Asking experts in the specific type of programme, community members or other stakeholders to identify other possible explanations and, if feasible, to assess whether these explanations can be ruled out.

**General elimination methodology** – this is carried out in two stages:

- (1) Identifying possible explanations (including that the observed changes are indeed due to the action, plus as many alternative explanations as possible) using a combination of options such as those listed above (e.g. key informant interviews and brainstorming, and reviewing previous evaluations/research); and
- (2) Gathering and analysing data to see if the possible alternative explanations can be ruled out. This option for causal attribution is most effective when used in combination with the other strategies.



EVALUATION  
DESIGN  
FACTSHEETSEVALUATION  
DESIGN:  
MATCHING  
DESIGNS

## Evaluation design: Matching designs

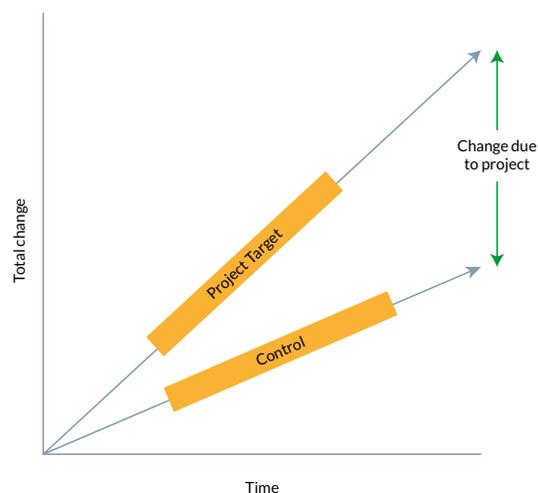


Figure 1: Matching design.

This kind of evaluation design involves identifying controls - comparable sites or groups of non-project participants with essential characteristics that are similar to those being targeted by the project. Once a control has been selected, data are collected from both the control and the project target, and the results are then compared to give a measure of how much of the observed change can be attributed to the project's actions. In a true experimental design the assignment of controls is done randomly; but in a conservation project random allocation is extremely challenging (and in many cases impossible), so instead a control group can be selected based on a number of variables that are relevant to the project action(s) being evaluated.

An evaluation using control groups/sites might include the following:

1. A comparison of the site/stakeholder group targeted by the project against a site/stakeholder group that was not targeted.
2. A comparison of project and non-project targets within the same site/stakeholder group.
3. A comparison of different actions in the same site/stakeholder group.

In practice the first of these approaches provides the most robust measurement of attribution, but it can be both difficult and costly to identify and then collect data on a suitable non-project group. The second and third approaches are therefore more likely to be applicable to small/medium-sized conservation projects.

Once the control group/site has been identified, there are several options for collecting data. The following are arranged in order of strength. There is a trade-off between the strength of each of these designs and the costs/resources required.

**Before-After Control Impact (BACI)** – Data are collected from both the control and target site/group before and after the project action. If trends at project target and control match each other before the project, but diverge afterwards, this provides strong evidence for the effect of project actions.

**No pre-test control group** – Data are collected from the control group/site after the project action only. Data are still collected from the target site/group before and after the project action.

**Post-test only** – Data are collected from the target and control group/site after the project action only.

EVALUATION  
DESIGN  
FACTSHEETSEVALUATION  
DESIGN:  
MATCHING  
DESIGNS

## EXAMPLES

**Example 1 - Human-tiger conflict in Nepal (comparison of stakeholder groups)**

Recovering tiger populations in Nepal, along with a growing human population, are leading to increased human-wildlife conflict, and undermining conservation efforts by threatening lives and livelihoods in poor communities. The intended outcome of a three-year Darwin Initiative funded project, designed and implemented by Chester Zoo and Green Governance Nepal, is to reduce human-tiger conflict by improving livestock husbandry, alleviating poverty through alternative livelihood options, conducting actions focused on changing behaviours, and building capacity in User Community Groups. The project is administering surveys pre-, mid-, and post-action to project sites, and at pre- and post-action stages to control groups (i.e. communities that do not receive project actions) to help in assessing whether changes seen in project communities can be attributed to the project's activities and/or to other factors. Comparison groups were selected by matching relevant key variables (e.g. livelihoods, natural resource use, tiger incidents) to project treatment groups. The results of the project will be communicated to comparison groups to facilitate learning and possible uptake of successful strategies.

**Example 2 - Human-elephant conflict in Assam, India (comparison of different actions)**

The growing human population in Assam and increasing demand for land has led to fragmented habitat, forcing elephants into conflict with people. The raiding of crops by elephants is one of the major components of human-elephant conflict, causing loss of life and livelihoods, and retaliation against elephants. Chester Zoo and Eco-Systems India as part of the Assam Haathi Project (AHP) conducted a rigorous assessment of the efficacy of action methods (provided by AHP) in use by communities, by analysing the “probability of crop damage” and “area of crops damaged” against each action. The effectiveness of the actions was analysed in two parts: their ability to prevent damage, and their ability to minimise damage (when elephants are already in the crop fields). Spotlights, chili fences and electric fences were found to be the most effective methods for preventing crop damage when used in isolation, but when used in combination with noise, their efficacy was compromised. No actions were found to reduce the extent of damage caused. AHP concluded that the communities should focus on using chili fences, electric fences and spotlights, reduce the use of kunkies (trained domesticated elephants used to round up wild elephants and drive them away from villages) and chili smoke, and minimise the use of noise to increase the effectiveness of spotlights and fences (Davies et al., 2011).



EVALUATION  
DESIGN  
FACTSHEETS

EVALUATION  
DESIGN:  
BEFORE-AFTER  
DESIGNS

### Evaluation design: Before-after designs

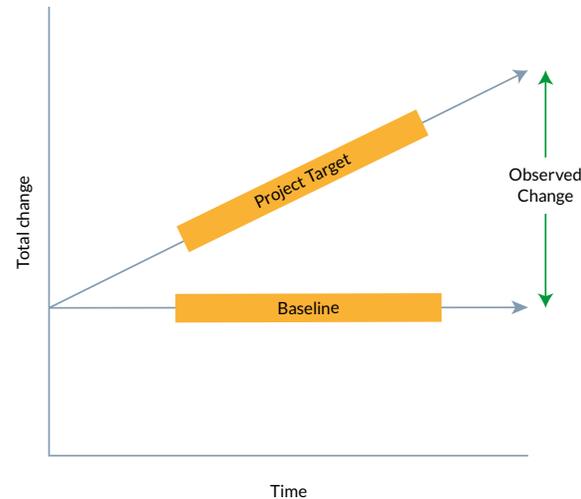


Figure 1: Before-after design.

These designs rely on comparing the situation before the action with the one after the action.

#### Single case before and after study

This is the simplest and most commonly used type of before and after design. It involves simply collecting relevant data on the project target group/site (e.g. stakeholder awareness, species population size, resource use), carrying out the project action, then measuring again. These designs are most useful if the outcome/impact being measured is short-term, for example the immediate effect of a presentation/workshop on participant attitudes. However, these designs are poor at evaluating complex or long-term changes, such as changes in community behaviour or in

species populations. That said, it should be noted that using these designs is better than not measuring anything at all.

#### Time series design

This is a more robust form of before-after design where data are collected prior to the action, shortly after the action and several weeks after the action. This series of assessments records any change that has taken place and the persistence of that change. For example actions that involve people are likely to respond well immediately after the action but the change may erode over time as the people revert to their usual social life and habits. Note that pre-testing can sensitise people to the outcome you are interested in and can affect the results of subsequent surveys. For example if the subjects know you are interested in a particular species as a result of questions in the first survey, they may answer more positively about this species in the second survey. Events apart from the action may affect people's responses to a topic, for example if the national media pick up a story about an issue that is similar to the one being addressed by the local project, this may influence people's responses.



## EVALUATION DESIGN FACTSHEETS

## EVALUATION DESIGN: BEFORE-AFTER DESIGNS

### EXAMPLE

#### Example: Human-elephant conflict in Assam, India

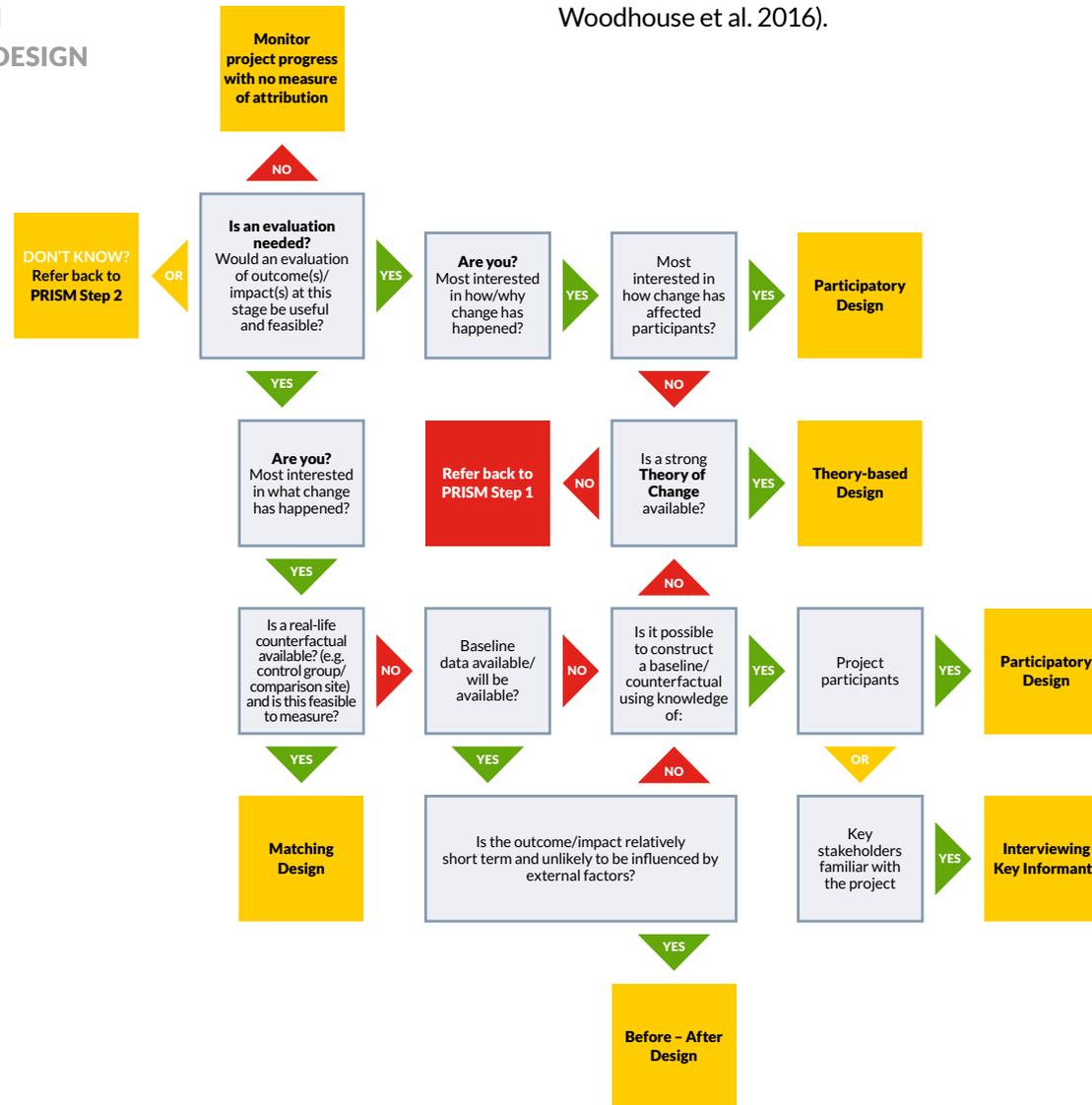
The growing human population in Assam and increasing demand for land has led to fragmentation of habitat, forcing elephants into conflict with people. This conflict has become an annual occurrence resulting in loss of crops, destruction of houses, and loss of human lives, and in turn, retaliation against elephants. The main aim of the three-year Assam Haathi Project (developed and delivered by Chester Zoo and EcoSystems-India) was to reduce this conflict in two of the worst-affected areas, and to stabilise local people's tolerance of wildlife and their willingness to participate in conservation. The short-term effects of the project are evident in the data gathered (before, during and after conflict-mitigation measures were introduced) on depredation, damage and attitudes. The extent of crop-raiding and damage to property decreased considerably in both study sites (e.g. crop damage in Area 1 reduced from 113 ha in 2006 to 25 ha in 2009), there were no human injuries or deaths and no elephant deaths. People in project villages feel that the conflict situation had "improved", and that they are now "more able" to deal with depredation than before.



EVALUATION DESIGN FACTSHEETS  
DECISION TREE FOR SELECTING AN EVALUATION DESIGN

DECISION TREE FOR SELECTING AN EVALUATION DESIGN

Decision tree for selecting evaluation design (adapted from Woodhouse et al. 2016).





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## Awareness & Attitudes factsheets and annexes



## AWARENESS & ATTITUDES FACTSHEETS AND ANNEXES

[Sample questions and scales for evaluating attitudes and awareness actions](#)

[Planning a successful attitudes/awareness action](#)

### Factsheet: Sample questions and scales for evaluating attitudes and awareness actions



## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

This factsheet provides guidance on developing questionnaires for evaluating actions targeting attitudes and awareness. It outlines different types of questions and scales that can be considered in designing a questionnaire. This guidance is to be used in conjunction with the information in the factsheet: [Questionnaires](#) and the module chapter on [Attitudes and awareness](#) that gives details on designing this aspect of evaluation.

Two main types of questions are included in questionnaires:

- **Closed questions** have a pre-defined set of possible answers, and they generate quantitative data. They include questions which give tick boxes or ask respondents to mark a position on a scale. Closed questions can be used to gather responses from large numbers of respondents, and to provide data sets which are analysed using standard descriptive or more complex statistical methods.
- **Open questions** ask participants to use their own words to answer the question, and they generate qualitative data. These questions give greater insight into why respondents have particular attitudes, awareness or behaviours, because they allow the researcher to explore the subject in more detail. Closed questions could constrain the respondent to a given set of answers which may not include all the possible answers, therefore missing a valuable finding.

- It is entirely possible to have a questionnaire which includes both closed and open questions.

A good questionnaire should be **reliable** and **valid**. Reliability refers to whether the questionnaire consistently measures the intended attitude, and validity refers to whether the questionnaire measures the attitude it is designed for rather than something else.

Reliability can be assessed by calculating Chronbach's alpha (which is possible in any basic statistics programme). Chronbach's alpha is a calculation that measures the correlation between items (usually over 10 items) and gives a score between 0 and 1. Questionnaires with a higher alpha score show that the questions are measuring the same underlying concept. As a rule of thumb, an alpha score of over 0.8 is generally considered good. The inter-item correlations, the correlation between pairs of items, should also be examined. For the inter-item correlation, one rule of thumb is that the score should be between 0.2 and 0.5 (it should be noted that there is some variation in advice on this, with researchers historically recommending anything from 0.15 to 0.7). If items are highly correlated this suggests that one of them may be redundant, since they are probably both recording very similar things. If items are poorly correlated they may be unrelated. If high or low correlation is revealed, then it is worth investigating how the overall Chronbach's alpha changes when one of the items is removed.

Validity is difficult to assess. It is usually done by examining the correlation between the results of the questionnaire and results from other questionnaires addressing the same concept. High correlation between two different measures indicates that they are both designed to measure the same construct. Validity can





## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

also be assessed by looking at measures related to the concept being investigated. For example if the questionnaire is related to behaviour and is accurately detecting the attitude determining behaviour, then the questionnaire results should have a strong relationship with behavioural observations (e.g. in a questionnaire about people's attitude towards recycling, you would expect more positive scores to correlate with people that are observed to recycle the most).

**Pilot-testing** the questionnaire is crucial to help you understand how your questions are interpreted and how reliable the questionnaire is. Testing should be conducted in as similar a setting as possible to the main survey, with participants who are as similar as possible to the target audience. This will test whether the participant recruitment strategy is likely to succeed and will give an indication of response rate. A pilot test should reveal whether any unnecessary questions have been included (if two questions asking about the same subject are very highly correlated then one of them could be removed since they may both be detecting the same effect). Piloting will also show whether questions are being interpreted as intended, or whether they need to be rewritten. Pilot testing also provides a practice dataset (albeit small) which should be used for testing the analytical approaches. It may be necessary to conduct more than one pilot test of a questionnaire, depending on the number of changes made at each test. You may find that you ask questions!

A useful approach in a questionnaire is to ask a number of questions which are all assessing the same concept. For example, assessing attitudes towards a species simply by asking "Do you like snow leopards?" may only get the answer the respondent thinks you want to hear. Further questions may clarify their attitude: Do you think snow leopards are an important wildlife species to have in the local area? Do you think snow leopards cause problems for people? Would you like to see a snow leopard in the wild? Should there be more snow leopards in the area?

Single item measures are common in research and obviously allow you to cover more in one questionnaire, but their reliability may be low. When an item is scored (for example using the 1-5 Likert scale described in the next section) the score will reflect the attitude combined with a random error-risk component. When the questionnaire has multiple items all addressing the same concept, this error risk is reduced in the overall score, giving greater overall reliability than the single item approach.





## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

#### Closed questions

##### Types of scale

There are several ways of asking questions and measuring the responses. The type of scale you use will depend on the response required.

##### Dichotomous scale

One of the simplest scales is the dichotomous scale, where respondents are only able to give one of two opposing answers. This is obviously unsuitable for more complex situations where there may be a range of attitudes, but it can be useful for determining awareness or for some aspects of determining attitudes towards a subject.

The example below is a question taken from Kellert SR (1984). American attitudes toward and knowledge of animals: An update. In MW Fox and LD Mickley (eds.), *Advances in animal welfare science 1984/85*, pp. 177-213. Washington, DC: The Humane Society of the United States.

Q. OF THE FOLLOWING REASONS FOR HUNTING, WHICH DO YOU APPROVE OF OR OPPOSE?		
LOCATION	APPROVE	OPPOSE
Traditional native hunting (e.g. by Eskimos and Indians)		
Hunting game animals for recreation and sport		
Hunting waterfowl for recreation and sport		
Hunting for meat		
Hunting for recreation and meat		
Hunting for a trophy		





## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

#### Likert scales

Another common approach to scales is to provide a statement and then ask participants to rate their dis/agreement on a scale from “Strongly Agree” to “Strongly Disagree”. The results can then be coded numerically, for example from 1-5 or even 1-7 if the end points are “Very Strongly Agree” and “Very Strongly Disagree”.

A five- or seven-point scale is useful because it allows the respondent to give more detail than the dichotomous scale, and to add an element of relationship to each answer (for example in the hunting question above, a respondent may have been more opposed to hunting for a trophy than they would for meat, but the questionnaire results only informed the project that they were opposed to both). These scales give a score to each answer which allows quantitative analysis of the results, and comparisons can be represented graphically. It must be recognised that these are ordinal data. Scoring 4 is not twice as high as 2 because “agree” is not twice as good as “disagree”. The scores are ranks, so a low score indicates that the respondent disagrees with the statement while a high score indicates agreement. When multiple statements are given, it is important to vary the positive and negative framing so that all the “agree” answers do not align with one attitude. If the hunting questions above were asked on a 5-point Likert scale, a statement “hunting of wild animals should be banned” would have the “strongly disagree” response reflecting the same pro-hunting values of the “strongly agree” responses to the other statements. This helps to prevent the respondent disengaging from the questions and automatically selecting the same answer throughout the questionnaire. In the example cited, the scoring of the responses must be reversed to ensure that the final analysis aligns the same values with the higher scores.

The example below is the short-form Nature Relatedness Scale developed by Nisbet and Zelenski (2013) in “The NR-6: a new brief measure of nature relatedness” which was developed to measure people’s connection to nature. This examines attitudes towards nature, and has been used in a number of studies, but it was piloted and developed in Canada so it may not be equally reliable in other cultures. It is also a medium to long-term measure that will not detect changes before or after a short intervention – an individual’s answer about an ideal vacation spot or to any of the other statements is unlikely to change between the time before a workshop and the time immediately after it, but answers may change over a year while volunteering on a project.



## Likert scales

## Example



## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

**Q1.** Please state the extent to which you agree or disagree with the following statements (tick one per statement).

	STRONGLY AGREE	AGREE	NEITHER	DISAGREE	STRONGLY DISAGREE
A. My ideal vacation spot would be a remote, wilderness area					
B. I always think about how my actions affect the environment					
C. My connection to nature and the environment is a part of my spirituality					
D. I take notice of wildlife wherever I am					
E. My relationship to nature is an important part of who I am					
F. I feel very connected to all living things and the earth					





## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

#### Semantic differential scale

Another method is the semantic differential. This type of scale presents objects and asks the respondent to rate them on a 7-point scale which has pairs of opposite words at either end. This can give a further detail on the aspects of a particular subject that the respondent favours or dislikes.

The following example is taken from an assessment of photographs that represent different landscapes. The research was carried out in Japan by Natori and Chenoweth (2008) in “Differences in rural landscape perceptions and preferences between farmers and naturalists” (Journal of Environmental Psychology 28(3)

250-267). Students and farmers were asked to score ten semantic pairs in relation to how they rated each landscape represented by the photograph they were presented with. (As the research was conducted in Japanese, the translations below may have changed the meanings slightly). The pilot results showed that the individual pairs (items) and relationships between items (correlation of one pair with another) represented the variables: preference (pair 1), naturalness (2, 3), openness (4), vastness (5), stewardship (6, 7), peacefulness (8, 9) and biodiversity (10). Responses to these questions may change in the short term, for example following the viewing of video or reading information about the landscape concerned.

Q. Please imagine you are in the landscape represented in the photograph and circle the number you think describes the landscape. Circle 4 if you find it difficult to rate or if you are indifferent to the landscape. Q1. Photograph of landscape

1	Like	1	2	3	4	5	6	7	Dislike
2	Natural	1	2	3	4	5	6	7	Artificial
3	Following nature's rule	1	2	3	4	5	6	7	Against nature's rule
4	Open	1	2	3	4	5	6	7	Enclosed
5	Vast	1	2	3	4	5	6	7	Compact
6	Well cared for	1	2	3	4	5	6	7	Deserted
7	Tidy	1	2	3	4	5	6	7	Cluttered
8	Peaceful	1	2	3	4	5	6	7	Not peaceful
9	Calm	1	2	3	4	5	6	7	Rough
10	Seems rich in life	1	2	3	4	5	6	7	Seems poor in life



## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

#### Open questions

Open questions are less easy to quantify or compare than closed questions, but they can generate more detailed information which can explore why certain attitudes or awareness exist.

Open questions can be very useful for getting information about perceptions and ideas that the project team may be unaware of. As with choosing any question that you wish to use, think about how you will interpret and analyse the answers you receive. Some examples of open questions are given below, along with some key points to consider in relation to their wording and structure. (These points may also be relevant to the wording and structure of closed questions).

Q1. *Since the training event, have there been occasions when you have had conversations with others (e.g. friends or family) about anything you learned?*

#### This question:

- aims to understand how the information from training may have spread through the community;
- gives a defined timeframe instead of using ambiguous words that people may understand in different ways. For example some people understand the word “week” to mean since Monday, while others may take it to mean the past seven days. This may also depend on which day they are asked.
- carefully tries to ask whether people have talked to others. Some may think they were not meant to pass information on, and therefore feel guilty, while others may not want to divulge what they talk about with their friends and family.
- does not lead the respondent to give an answer by proposing possible situations where they may have talked to people. Some questions may require suggestions, but this question is aiming to assess voluntary behaviour, so it is better to avoid suggesting possible answers.





## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

Q2. *Please describe what improvements, if any, you would make to the leaflet that has been handed out.*

#### This question:

- asks for improvements, to frame the question in a positive light rather than asking about what may be wrong and hence inviting criticism of the project. People may feel uncomfortable about being judgemental and negative about anything to do with the project or the project team, so it is better to frame a question positively.

Q3. *Do you think you will change your practice as a result of this training? Please tell us how (we may be able to use this to help others).*

#### This question:

- tries to evaluate future behaviour by seeking an estimate of intention;
- frames the response in an impersonal way (it may help others) in order to mitigate any reluctance to respond either because reporting of personal behaviour is involved or because a positive response could otherwise be interpreted as a commitment for action.

#### Question examples

#### QUESTIONS ABOUT ATTITUDES

Questions about attitudes investigate the individual's feelings and emotions in relation to the subject.

1. Do you like/dislike [the subject]?
2. Do you approve/oppose ...?
3. To what extent do you think [the subject] is beautiful/ugly/useful/useless/ boring/enjoyable/easy/difficult...?
4. Does this make you feel happy/sad/excited/calm/restless/worried...?
5. Which of these [places/pictures/options] is your preferred one, and why...?

#### QUESTIONS ABOUT AWARENESS

Questions about awareness investigate how much someone knows about the subject.

1. Please match these [species] names and [species] pictures.
2. Are any of these [species] found in the local area?
3. Have you seen these [species]?
4. What, if any, threats to [subject] are you aware of?



5. In what ways do people in this community benefit from...?
6. Does this activity affect you...?



## ATTITUDES & AWARENESS FACTSHEET

### SAMPLE QUESTIONS AND SCALES FOR EVALUATING ATTITUDES AND AWARENESS ACTIONS

#### QUESTIONS ABOUT BEHAVIOUR

Questions about behaviour try to get people honestly to report what they do and how it may have changed.

1. In the last seven days, have you...?
2. Do you have a bird feeder/pond/wood fire in the garden/house...?
3. Since [the action] have you had the opportunity to do [requested behaviour]...?
4. Trying to recall what you did in [month before project started] did you ever [behaviour]...?
5. In the last summer/winter/wet season did you...?

Where possible, it may be better to measure behaviour using methods that observe either the behaviour or indicators of the behaviour unobtrusively. For example, changes in hunting practices may be observed by measuring changes in the types of meat available at the local market. Monitoring the count of footprints on a path may help you find out how many people are using the woodland, and recording the locations of domestic livestock may reveal changes in herding practices.

#### Evaluation design

##### Pre-post (before-after) questionnaire

A “before and after” questionnaire asks participants to rate (for example) their level of knowledge before the action and again afterwards.

It is also possible to ask participants after the action to describe how they felt prior to it, but this is dependent on the reliability of the participants’ memory.

The focus of the questions should reflect the aims of the action that you have identified at the beginning of the project. Questionnaires that are perceived as irrelevant (or as too long) may reduce the response rate you achieve.

##### Post only (after) questionnaire

A questionnaire which is only delivered after an event, rather than both before and after the event, is a post only questionnaire. This may provide a snapshot of participant awareness, attitudes or behaviour. Again the length and relevance of the questionnaire need to be considered carefully if you are to achieve the best rate of response.

Post questionnaires can be administered immediately after an attitudes or awareness action and then at intervals afterwards. To get a good response rate, the best approach is to ask people to complete the questionnaire while they are still at the event venue. If you wish to carry out a post questionnaire some time after the action, then you should consider how you will encourage people to fill in their responses and return them.





## ATTITUDES & AWARENESS ANNEX

### PLANNING A SUCCESSFUL ATTITUDES/ AWARENESS ACTION

#### Annex: Planning a successful attitudes/awareness action

Conservation projects targeting biodiversity outcomes may include actions to raise people's awareness of a subject, or change public or stakeholder attitudes. This is often in an effort to catalyse a behaviour change, which can be essential to achieving biodiversity outcomes. Increasing awareness or changing attitudes can lead to behaviour changes, but the relationships between these elements are complex and behaviour change is difficult to achieve. Behaviour change models attempt to explain these relationships, and they can be used to guide attitude and awareness actions. Such models may include adaptations of the Theory of Reasoned Action, Theory of Planned Behaviour, Social Cognitive Theory, Social Norms Theory, the Stages of Change Model and other integrative models. Three components of a successful action are design, planning and communication. A useful acronym for these actions is MAST: Message, Audience, Strategy, Timing; and this can be useful for structuring your thinking about each of the three components.

The **message** of the action will be defined by the desired outcome. The message should be shaped to resonate with the target audience, relating to their interests, values and culture.

It is crucial to identify the **appropriate audience** for the message, which may be the individual people whose behaviour could influence the success of the conservation goal, the influential peer group around these people, or influential groups in the wider community.

The **communication strategy** will be affected by a number of factors including the method (for example spoken or visual), the messenger (for example credibility, personality, culture) and environmental factors that may have little to do with the message (for example indoor or outdoor setting, lighting, seating, noise, prior audience understanding of the topic).

**Timing** of events is also crucial both in terms of the event itself, for example avoiding clashes with other activities, and in terms of message timing, for example it may not be effective to try to change a behaviour that occurs in winter by means of communications delivered in summer.

**Evaluating the effect** of actions designed to influence attitudes and awareness is a critical part of a project and should ideally be planned in the design stage. The effect of the actions may be seen both within the project and within the audience, and it may occur over a variety of timescales. It is critical that a robust Theory of Change is used to associate the action with the target outcome. Although it may not be possible to evaluate the effect of the action on the desired biodiversity outcome, interim stages can be evaluated and can provide useful intelligence for internal effectiveness monitoring and for reporting.





## ATTITUDES & AWARENESS ANNEX

### PLANNING A SUCCESSFUL ATTITUDES/ AWARENESS ACTION

#### Framework for attitudes and awareness action planning

The framework ([Figure 1, Attitudes & awareness module](#)) provides a structure for developing a Theory of Change for attitude and awareness actions in any project. As with any action planning it is necessary to go through several steps to identify the best approach. The planning steps below work backwards along the Theory of Change, using current understanding of behaviour and preliminary research, to ensure each step is linked to the desired final outcome.

#### Step 1. Identify the outcome of interest for the project (i.e. the desired improvement in biodiversity status).

This is the final (green) box in the framework and the ultimate goal of the project. With high-impact actions and a rapidly responding biodiversity goal, there may be effects seen at this level, however it is unlikely that most attitude and awareness actions in small- medium sized projects will be able to detect ultimate effects on biodiversity.

#### Step 2. Identify the threat to biodiversity which needs to be reduced, and any human behaviours which cause the threat.

This refers to the pink box in the framework, identifying the factors that need to be altered if the biodiversity goal is to be achieved.

#### Step 3. Identify the desired human behaviour outcome.

Point 4 in the framework requires you to identify the behaviour that is causing the threat to biodiversity. Change in this behaviour will then be the outcome for the attitude/awareness action. This requires an understanding of the links between the behaviour and the impact on biodiversity, and how a change in behaviour can contribute to a change in this impact.

#### Step 4. Identify target audience linked to behaviour.

In order to influence attitudes, awareness or knowledge (points 2 and 3 in the framework) successfully, it is necessary to identify the audience. Most awareness and attitude interventions will need to focus on a particular audience. Even seemingly ubiquitous behaviours need to have a target audience identified, e.g. plastic carrier bags are used by many people, but different messages and catalysts are likely to be required to produce a response in different groups. It is necessary to focus the action on the correct audience to ensure the appropriate link to the desired behaviour change.





## ATTITUDES & AWARENESS ANNEX

### PLANNING A SUCCESSFUL ATTITUDES/ AWARENESS ACTION

**Step 5. Investigate why the behaviour occurs, by means of research, for example using interviews with people who exhibit the behaviour.**

Research should investigate attitudes and awareness relating to the target biodiversity issue, other related behaviour and its impacts, and potential alternative behaviours. This will aim to address the motivations for the current behaviour, barriers to adopting a different behaviour, and potential enablers for adopting a new behaviour. Collecting appropriate observational data can provide an additional (often more objective) assessment of current behaviour.

Points 2 and 3 in the framework also require an understanding of the change in attitude, awareness or knowledge that is required to influence the behaviour at issue. In many situations, unexpected factors may drive behaviour in complex ways, and these will not be discovered without discussions with the people involved. This also requires an open mind on the part of the researchers who may be focused on biodiversity conservation but who may encounter many other values and motives in this phase of research. After gathering ideas and data from several sources, similarities in perceptions and suggestions for the behaviour can highlight issues that need to be addressed.

**Step 6. Develop an appropriate behaviour model for achieving the desired outcome(s).**

Building a theoretical model which describes the factors driving the behaviour will enable the project to be planned more effectively in complex situations, helping it to clarify the objective of the action and to be more relevant to other work in future. This model should be developed using the information gathered in the previous steps, and should be informed by existing behaviour change models such as those mentioned previously.

**Step 7. Develop action to address the target attitude/ awareness issue.**

This is point 1 in the framework. Once a specific behaviour change and target audience have been defined, it is necessary to design the best method of communicating to the audience, so that the action has the best chance of achieving the intended behaviour change. This should increase the chance of success happening in accordance with the defined pathway from action> target behaviour> desired behaviour change> reduction in threat> improvement in biodiversity status.





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## Capacity Development factsheets and annexes



## CAPACITY DEVELOPMENT FACTSHEETS AND ANNEXES

[Example questions and scales for training evaluation](#)

[Organisational capacity assessment tool](#)

[Network health scorecard](#)

### Factsheet: Training evaluation form: example questions and scales



## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

Training evaluation surveys tend to be short - a good guide is to make sure that it takes no more than five minutes to complete. Try it out yourself first! There are two types of questions: quantitative questions are closed-ended (tick the box, or scales), while open-ended questions ask for written feedback. Quantitative questions are extremely useful because they provide numbers that you can analyse as part of your evaluation, with scope to compare across years or sites, for example. Qualitative questions provide more detail - they can help you judge why participants thought the training was useful/not useful; but they are less easy to analyse. It is best to have a combination of the two types of questions.

The template below provides examples of different types of questions and scales that can be considered in designing a training evaluation form. You can modify the questions to suit your particular training programme or event. You may not want to ask all the questions in each section - choose those that are most appropriate to your aims. See the factsheet Questionnaires for general guidance on designing and implementing a questionnaire survey.

### Post-only surveys (Feedback forms)

A post-training evaluation form asks participants to rate the effectiveness of various aspects of the training. The focus of the questions should reflect the aims of the training that you have identified at the beginning of the project. Asking questions that do not relate to the evaluation of your capacity development actions is a waste of time and effort. Questionnaires that are too long (or are perceived as irrelevant) may also affect response rates you achieve.

It is recommended that you keep to one type of scale so as not to confuse the respondents.

You can cut and paste the question formatting into a new document and modify as needed.

### Five-point scale

The example below uses a five-point scale from “strongly agree” (SA) to “strongly disagree” (SD).

A five-point scale is useful because it allows people to choose a score that is likely to match their true position. Using numbers allows you to carry out analyses and to present them graphically.





## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

### QUESTIONS ABOUT THE PRESENTER AND MATERIALS

Please state the extent to which you agree or disagree with the following statements, where 1 is Strongly Agree and 5 is Strongly Disagree (tick one choice per statement).

	STRONGLY AGREE (1)	AGREE (2)	NEITHER (3)	DISAGREE (4)	STRONGLY DISAGREE (5)
A. The presenter communicated the information clearly.					
B. The presenter engaged the audience.					
C. The presenter made the subject matter compelling.					
D. The presenter was able to answer questions.					
E. The content was presented in a well-structured manner.					
F. The pace of the presentation was right for me.					
G. The handouts/supporting material were useful.					

### QUESTIONS ABOUT THE EFFECTIVENESS OF THE TRAINING

Please state the extent to which you agree or disagree with the following statements, where 1 is Strongly Agree and 5 is Strongly Disagree (tick one choice per statement).

	STRONGLY AGREE (1)	AGREE (2)	NEITHER (3)	DISAGREE (4)	STRONGLY DISAGREE (5)
A. The training was relevant to my work.					
B. The training content was meaningful to my work.					
C. The training met my purpose in attending.					
D. The training content was related to the skills and knowledge I needed.					
E. The training made me think about my own work.					
F. The training motivated me to change how I deliver my work.					
G. I want to tell others about the useful things that were presented.					
H. I have the confidence to use the knowledge gained from the training in my work.					





## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

### Open Questions

Open questions are less easy to quantify or compare than closed ones, but they can give you more depth of useful information.

Think about how you will interpret and analyse the answers when you are choosing the open questions you are going to use.

#### Q1

Choose one of these:

What was the most useful aspect of the training to you?

What was the best aspect of the training?

What did you learn that you did not know before?

#### Q2

Choose one of these:

What aspect of the training would you like to see improved?

What could we have done differently?

What else would you like to see included in the training?

#### Q3

How do you hope to change your practice as a result of this training?

### Before and after questionnaire

A before and after questionnaire asks participants to rate their level of knowledge before the training and again afterwards. The focus of the questions should reflect the aims of the training that you have identified at the beginning of the evaluation. Asking questions that do not relate to the evaluation of your capacity development actions is a waste of time and effort. Questionnaires that are too long (or are perceived as irrelevant) may also affect the response rates you achieve.

These questionnaires are best completed anonymously, which requires a level of organisation and planning that people do not always have. For example, you could give everyone a numbered questionnaire and ask them to remember the number allocated to them (this is done in some school exams, for example). Alternatively you could use an on-line method such as Survey Monkey.





## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

### Post-only questionnaire

Post-training questionnaires can be administered straight after the event and then at intervals afterwards. The best way to get people to fill in a questionnaire immediately after the training is to ask them to do it while they are still at the venue. If you wish to carry out a post-training questionnaire some time after the training, then it is useful to consider how you will encourage people to fill in and return the forms.

Try to keep the questionnaire as short as possible - a good guide is to make sure that it takes no more than five minutes to complete. Try it out yourself first! There are two types of questions: quantitative questions are closed-ended (tick the box, or scales), while open-ended questions ask for written feedback. Quantitative questions are extremely useful because they provide numbers that you can analyse as part of your evaluation, with scope to compare across years or sites, for example. Qualitative questions provide more detail - they can help you judge why participants thought the training was useful/not useful; but they are less easy to analyse. It is best to have a combination of the two types of questions.

You can cut and paste the question formatting into a new document and modify as needed.

### Scales

The examples below show a series of scales and different options for presenting questions in a before and after questionnaire.

When you are designing your own questionnaire it is recommended that you keep to one type of scale so as not to confuse the respondents.





## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

### QUESTIONS ABOUT KNOWLEDGE AND SKILLS

Using a scale of 1 to 5 where 1 = none at all and 5 = a lot, please rate the following:

QUESTION	BEFORE THE TRAINING	AFTER THE TRAINING
I rate my knowledge in (fill in topic here but make it specific)		
I rate my skills in (fill in topic here but make it specific)		

### QUESTIONS ABOUT CONFIDENCE AND MOTIVATION

This questionnaire needs to be distributed before the training and then again after the training.

QUESTION	BEFORE TRAINING				AFTER TRAINING			
	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
I feel motivated to apply skill X in my work								
I have the confidence to make the right decisions about my conservation work								
.....								





## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

### QUESTIONS ON THE APPLICATION OF SKILLS AND THE IMPACT OF THIS IN YOUR WORK

#### Question 1

a) What conservation contribution have you made since returning to work?

b) How influential was [insert specific training provision] in you making this contribution?

Extremely influential, very influential, neutral, not influential.

#### Question 2

How important has the training from us been in your career?

Extremely important, very important, neutral, not important.

#### Question 3

Compared to the time before the project, have you used any of the skills/knowledge acquired during the training? (Yes/No).

If yes, please provide at least one example. If no, please explain why not.

#### Question 4

Compared to the time before the project, do you see a change in your work as a result of applying your new skills?

If yes, please provide at least one example. If no, please explain why not.



### Example of a before & after questionnaire used to evaluate changes in skills and knowledge:



## CAPACITY DEVELOPMENT FACTSHEET

## TRAINING EVALUATION FORM: EXAMPLE QUESTIONS AND SCALES

**Action:** A project in Munnar, Kerala conducted two one-day amphibian identification workshops aiming to improve the amphibian identification skills of Forest Department employees. Workshops consisting of classroom and field sessions, were conducted in Munnar, Kerala with 26 participants from three regional Forest Departments. Classroom sessions consisted of visual presentations detailing the importance of amphibians and their diversity in the Western Ghats, specifically focusing on five amphibians in Munnar: *W. phrynomerma* and *Rhacophorus pseudomalabaricus* (both critically endangered), *Micrixalus adonis* (not evaluated), *Ghatixalus asterops* (data-deficient) and *Raorchestes beddomii* (near threatened).

**Evaluation:** A survey was conducted before the workshop to record participants' prior knowledge of the five species. Information on whether they recognized the species, its common name in Malayalam and the habitat it was found in were requested after showing them photographs of the species. An identical survey was repeated four months later with 14 respondents to understand whether the workshop had improved their skills. The remaining 12 workshop participants were not available after being transferred to work within other forest departments.

**Results and interpretation:** Four months after the workshop, Forest Department employees had improved their recognition skills for *W. phrynomerma*, *R. pseudomalabaricus*, *M. adonis* and *R. beddomii* and the habitats they occurred in (Table 1).

The team concluded that these species were relatively easy to distinguish and should act as focal species during official monitoring of amphibian populations. Participants also had substantial previous knowledge of *R. pseudomalabaricus* and *M. adonis*. There was less improvement in identifying *G. asterops* as it was probably not sufficiently distinct or characteristic. The team found that the common name of all species was not retained by most respondents (Table 1), possibly because common names were difficult to memorize and folk taxonomy for most amphibians is generic and not specific to the species level. This could be improved through a greater encouragement from the higher officials of the Forest Department for their staff to equip themselves with such knowledge. Overall, workshops improved the knowledge of Forest Department employees and, if undertaken annually, could consistently improve their skills in identifying amphibians and eventually conserving them.

**TABLE 1.**

Number of Forest Department employees without prior knowledge that successfully identified amphibians and related information four months after attending an education workshop (n=14, those with prior knowledge excluded).

SPECIES	RECOGNITION		COMMON NAME		HABITAT	
	YES	NO	YES	NO	YES	NO
<i>W. phrynomerma</i>	14	0	2	12	11	3
<i>R. pseudomalabaricus</i>	2	1	2	12	10	4
<i>M. adonis</i>	5	3	3	11	9	2
<i>G. asterops</i>	3	8	0	14	6	8
<i>R. beddomii</i>	5	7	2	12	6	8

A. Kanagavel, S. Parvathy & N. Divakar,  
Education workshops improve the ability of  
Forest Departments to identify amphibians  
in Western Ghats, *India Conservation  
Evidence* (2017) 14, 21

## Factsheet: Organisational Capacity Assessment tool

### Summary and introduction

Organisational capacity assessment tools (OCAs) can be used to produce a baseline against which an organisation may be tracked, and the impact of projects that aim to build its capacity can be evaluated. Used at the start of a project, an OCA also helps to identify areas for improvement, and it can be used to inform the development of an action plan to address key institutional weaknesses.

This factsheet explains how to use the in-built Organisational Capacity Assessment tool on the Capacity for Conservation (CfC) website to evaluate actions that aim to develop and improve organisational capacity.

CfC is a growing resource, developed and managed by several of the world's foremost international conservation organisations and designed to support NGOs to develop their organisational capacity. As well as the Organisational Capacity Assessment tool, CfC also provides a template and guide for developing an organisational plan, an extensive toolkit of capacity development resources and a list of indicators that can be used to track changes in organisational capacity.

Here we specifically describe how this resource can be used as part of a before and after evaluation design which uses scores assigned to key areas of organisational capacity, to show change. The scores should be supplemented with justifications based on discussions with those who completed the assessment and, if necessary, other relevant stakeholders.

### Required steps

#### Step 1. Familiarise yourself with the tool.

The OCA tool can be accessed on the CfC website <http://capacityforconservation.org>.

If you are not already signed up then you can register the organisation and create a username and password for each individual who completes the assessment.

Signing up also allows you to access the CfC development plan, toolkit and draft indicators.

The tool can be completed online or can be downloaded as an Excel file and uploaded to the site at a later date. The tool stores assessment results automatically and aggregates responses across all organisation staff who complete the assessment.



## CAPACITY DEVELOPMENT FACTSHEET

## ORGANISATIONAL CAPACITY ASSESSMENT TOOL

### STEP 1



## Step 2. Identify the key areas of organisational capacity to be evaluated.



### CAPACITY DEVELOPMENT FACTSHEET

### ORGANISATIONAL CAPACITY ASSESSMENT TOOL

### STEP 2

This will typically address the areas that were targeted by the capacity development action. The CfC tool covers the following areas of organisational capacity development:

- Organisational planning and management
- Governance
- Human resources and staff management
- Leadership
- Internal communications
- Fundraising
- Finance management
- Monitoring, evaluation and learning
- Project Planning and Management
- Constituency
- External communications
- Partnerships and networking.

Under each of these headings the tool contains a series of questions which each relate to a different aspect of organisational capacity. It allows users to score each question as “not there”, “getting there”, “good” or “NA” (see below).

CfC tool section on internal communications.

Internal Communications				
Internal Staff Meetings	Not there	Getting there	Good	NA
Staff meetings are held on a regular basis and are well attended by all relevant staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meetings are used to disseminate key information and decisions relevant to the organisation, and minutes are made available to staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a system in place for staff to meet the board/council/trustees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team Meetings	Not there	Getting there	Good	NA
Regular team/department/division meetings are held and are well attended by all relevant staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All decisions made in the team/department/division meetings are recorded in the minutes and made available to all relevant staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information Management	Not there	Getting there	Good	NA
Logical physical and electronic filing systems are in place to aid sharing of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Staff are able to easily access key information and data relevant to the whole organisation on a central server	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



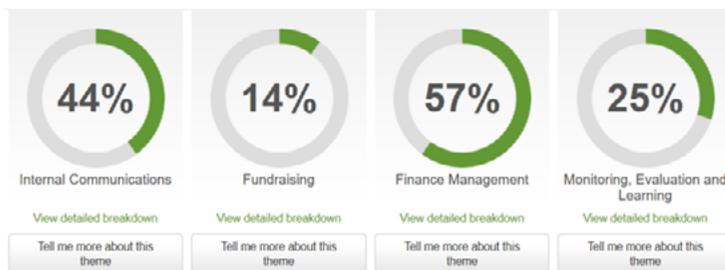
**Step 3. Establish a baseline.**

Ideally this should be based on an assessment carried out before the project begins. Such an assessment can also be vital in identifying the aspects of capacity to target during the project and in focusing effort where it is most needed.

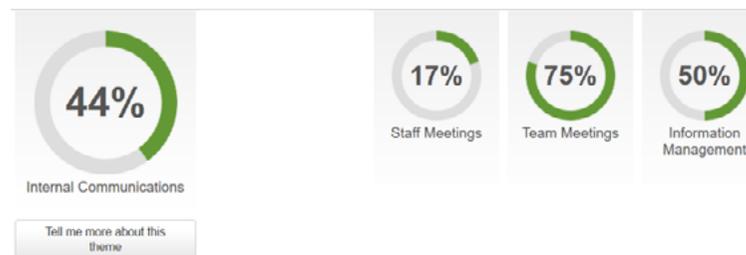
To complete the online tool, individuals can complete the full assessment, or can focus on a limited number of the areas that are applicable to the organisation and/or the capacity development action concerned (fundraising, internal communications, etc.).

If possible the assessment should be completed by multiple individuals from across the organisation. Care should be taken to ensure that the scoring is completed as honestly and as objectively as possible.

Once completed, the tool aggregates scores from across the organisation and displays the results as percentage scores for each area of organisational capacity assessed.



You can then click on the link “view detailed breakdown” to see a disaggregation of the overall score for each area.



If this is the first time that someone in the organisation has completed the tool then this will act as a baseline for the evaluation. If scores for the organisation have previously been entered into the site then you should use the scores recorded immediately before the capacity development action begins as your baseline.

If an assessment was not carried out before the capacity development action, the scoring can still be carried out retrospectively (after the project), although greater care must be taken to ensure the accuracy of the results. Users can also contact the site’s administrators who can download and provide a breakdown of individual scores given at a specific time and by specific individuals.



## CAPACITY DEVELOPMENT FACTSHEET

## ORGANISATIONAL CAPACITY ASSESSMENT TOOL

### STEP 3



**Step 4. Carry out the post-project assessment.**

Once the capacity development action is complete, fill in the tool again to describe the situation after the action. Ideally the same individuals who carried out the baseline assessment should also complete the scoring after the project, so as to reduce bias and enhance the validity of the results.



## CAPACITY DEVELOPMENT FACTSHEET

## ORGANISATIONAL CAPACITY ASSESSMENT TOOL

### STEPS 4, 5 & 6

Rather than completing the entire tool again you can complete the sections that are most relevant to the evaluation. Note that changes in capacity in one area will often have knock-on effects in other areas, so you should bear this in mind when deciding which sections to complete in the post-project assessment.

**Step 5. Compare and discuss scoring.**

Compare and contrast the scores given before and after the capacity development project to see whether or not there has been a change in capacity since the project began. The change in the scores (if any) indicates whether the project had a positive, negative or neutral effect on organisational capacity.

Scores should be discussed with the individuals who completed the assessment, and a justification should be provided for any changes (or lack of change). The justifications are just as important as the scoring, as they help to clarify how any change has come about, whether it can be attributed to the project and what lessons can be learnt.

This information can be summarised in the table below.

COMPARE AND DISCUSS SCORING				
This information can be summarised in the table below.				
CAPACITY AREA	% SCORE BEFORE	% SCORE AFTER	CHANGE	JUSTIFICATION (REASONS FOR CHANGE)

**Step 6. Complete follow-up assessments to track changes over time.**

It is recommended that individuals in the organisation should plan to review and complete the assessment at agreed points in the future, so as to track long term changes in capacity and to continue to identify areas for development.



### Example



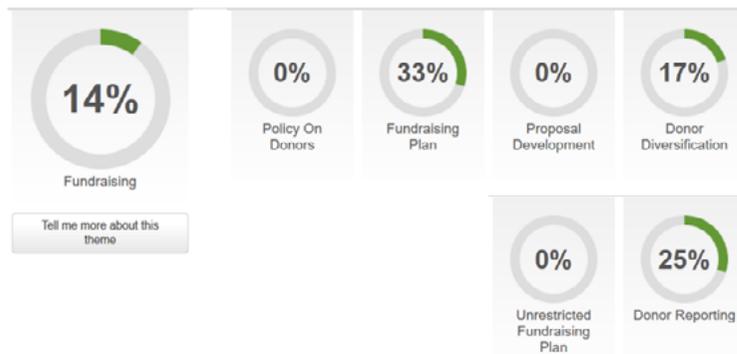
## CAPACITY DEVELOPMENT FACTSHEET

## ORGANISATIONAL CAPACITY ASSESSMENT TOOL

**Project:** The Forest Protection League (FPL) is an organisation that works to support small NGOs which campaign against the conversion of tropical forest to timber plantations in South East Asia. FPL carried out a project to support another NGO, Jambi Forest Alliance (JFA), to develop their organisational capacity.

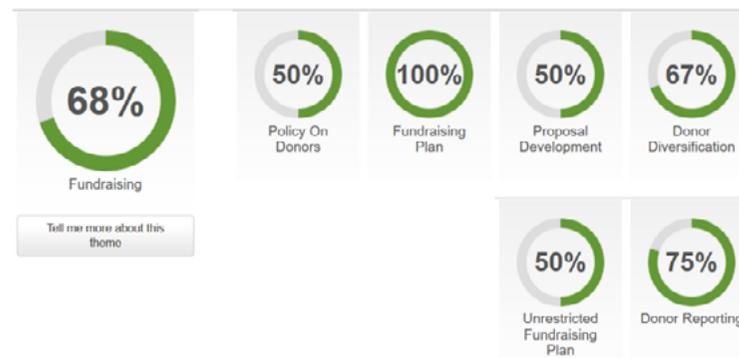
**Establishing the baseline:** An initial organisational capacity assessment completed by individuals across JFA identified a specific lack of capacity in relation to fundraising. This then helped FPL to design and implement appropriate actions to help build JFA's fundraising capacity, including training in proposal development, identifying and engaging with donors and developing a fundraising plan for the organisation. This initial assessment also provided a baseline for the evaluation.

### Jambi Forest Alliance organisational fundraising capacity scores - before the project.



**Post-project assessment:** After the FPL project had taken place, the same individuals who completed the organisational assessment before the project were asked to complete the assessment again, this time to reflect the situation after the project.

### Jambi Forest Alliance organisational fundraising capacity scores - after the project.



**Comparing and discussing scoring:** Discussion with the individuals who completed the before and after assessment provided justification for the scores. The main reasons provided for the changes in scores all related to the capacity development actions implemented by the FPL project.

### Acknowledgements

Capacity for Conservation: <http://capacityforconservation.org>



## CAPACITY DEVELOPMENT FACTSHEET

## ORGANISATIONAL CAPACITY ASSESSMENT TOOL

### COMPARE AND DISCUSS SCORING

The changes in scores all related to the capacity development actions implemented by the FPL project

CAPACITY AREA	% SCORE BEFORE	% SCORE AFTER	CHANGE	JUSTIFICATION (REASONS FOR CHANGE)
<b>Fundraising - Overall</b>	<b>14</b>	<b>68</b>	<b>+54</b>	<b>Improvement in percentage scores for all aspects of fundraising capacity by 50+</b>
Fundraising – Policy on donors	0	50	+50	Policy on donors now exists, awaiting approval from board
Fundraising – Fundraising plan	33	100	+67	Comprehensive fundraising plan now in place and fully agreed by the organisation
Fundraising – Proposal development	0	50	+50	Relevant staff given training in proposal development
Fundraising – Donor diversification	17	67	+50	Fundraising plan now targets a wider range of donors, both national and international
Fundraising – Unrestricted fundraising plan	0	50	+50	Fundraising plan now includes strategy for unrestricted funding
Fundraising – Donor reporting	25	75	+50	Fundraising plan assigns roles and responsibilities for meeting reporting requirements agreed across the organisation





## CAPACITY DEVELOPMENT ANNEX

## NETWORK HEALTH SCORECARD

### network health scorecard

Looking for a way to assess the health of your Network?

Answer these questions for a basic network diagnosis of strengths and areas of growth. Refer back regularly and you can use your score to identify and track progress in key areas of network development. (We suggest quarterly.)

How to use this scorecard:

- Ask each network member to fill out an individual scorecard.
- Enter individual scores in a collective table, indicating the number of members selecting particular scores to tabulate network results.
- Together consider the results. What patterns do you see? What results need further discussion? Over time, what has improved? What hasn't? Why?

	Not so much		Totally!		
	1	2	3	4	5
<b>NETWORK PURPOSE</b>					
1. All members share a common purpose for the network.	<input type="checkbox"/>				
2. Together, members have identified strategic goals and objectives for the network.	<input type="checkbox"/>				
3. Network plans reflect network goals.	<input type="checkbox"/>				
<b>NETWORK PERFORMANCE</b>					
4. Members are working jointly to advance network goals.	<input type="checkbox"/>				
5. Members are adding value to each other's work.	<input type="checkbox"/>				
6. Members are creating new knowledge or insights together.	<input type="checkbox"/>				
7. The way the network communicates with stakeholders builds support for the network.	<input type="checkbox"/>				
8. The network is creating value for the constituents it serves.	<input type="checkbox"/>				
9. The network is able to attract additional network funds, as needed.	<input type="checkbox"/>				



Available from: [http://networkimpact.org/downloads/NH\\_Scorecard.pdf](http://networkimpact.org/downloads/NH_Scorecard.pdf)

### network health scorecard

	Not so much		Totally!		
	1	2	3	4	5
10. Members honor their commitments to the network.	<input type="checkbox"/>				
11. The network is meeting its strategic goals and objectives.	<input type="checkbox"/>				
12. Members are achieving more together than they could alone.	<input type="checkbox"/>				
<b>NETWORK OPERATIONS</b>					
13. Decision making processes encourage members to contribute and collaborate.	<input type="checkbox"/>				
14. The network anticipates, surfaces, and addresses conflict when it arises.	<input type="checkbox"/>				
15. The network's internal communications systems are serving it well.	<input type="checkbox"/>				
16. All members are contributing time and resources to the network.	<input type="checkbox"/>				
17. The work of the network is attuned to the comfort and energy levels of members.	<input type="checkbox"/>				
18. Members reflect on network experience and adjust network practice accordingly.	<input type="checkbox"/>				
19. The network has mechanisms in place to promote accountability among members (e.g., agreements, understandings).	<input type="checkbox"/>				
<b>NETWORK CAPACITY</b>					
20. As a network, members have the material resources needed to advance network goals.	<input type="checkbox"/>				
21. As a network, members have the skills they need to advance network goals.	<input type="checkbox"/>				
22. As a network, members have the connections they needed to advance goals.	<input type="checkbox"/>				

#### YOUR ADDITIONAL CHECK-UP QUESTIONS HERE

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## Livelihoods and Governance factsheets and annexes



### LIVELIHOODS AND GOVERNANCE FACTSHEETS AND ANNEXES

#### [Participatory Impact Assessment \(PIA\) methods](#)

[PIA Method 1: Before and after scoring](#)

[PIA Method 2: Proportional piling](#)

[PIA Method 3: Tally method](#)

[PIA Method 4: Matrix scoring](#)

[PIA Method 5: Before and after impact calendars](#)

#### [Community Based Organisation Capacity Assessment](#)

[Community Mapping](#)

[Basic Necessities Survey \(BNS\)](#)

[Participatory Governance Assessment](#)

[Participatory photo evaluation](#)



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 1: BEFORE AND AFTER SCORING

#### OPTION 1 STEPS 1, 2 & 3

#### PIA Method 1: Before and after scoring

##### Introduction

This method is designed to be used as part of a Participatory Impact Assessment (PIA) evaluation design. Refer to the factsheet [Evaluation Design: Participatory Impact Assessment](#) for more information on how to use this method as part of a PIA.

**Simple scoring** requires informants to use counters such as seeds, stones, nuts or beans to assign a specific score to each item or indicator in a list. For example, ten counters per item might be made available and people asked to assign scores of between 0 and 10 depending on the importance of the item.

**Before and after scoring** adapts and expands simple scoring to compare impacts or items at two points in time, typically before a project and then during or after the project. Definitions of “before”, “after” or “during” are derived from project timelines. This method is particularly useful for measuring impact where project baseline data are weak or non-existent.

If the method is standardised and repeated with a sufficient number of informants it is possible to present results from before and after scoring using conventional statistics, with mean scores and 95% confidence intervals for statistically significant differences.

#### Required steps

The choice of scoring method used for before and after scoring has a considerable effect on the interpretation of the results. In general, two main approaches are used:

##### Option 1: using the same number of counters “before” and “after”.

- Step 1.** Give the informant a number of counters, e.g. 20, and ask them to assign these counters to show the importance of different sources of income (or other indicator of project impact) before the project.
- Step 2.** When they have finished, give the informant another 20 counters and ask them to distribute them to show the situation after the project. Note that because this method uses the same number of counters before and after, it cannot therefore indicate whether the total income increased, decreased, or stayed the same during the project.
- Step 3.** Discuss with the informant the reasons for any changes between “before” and “after”.

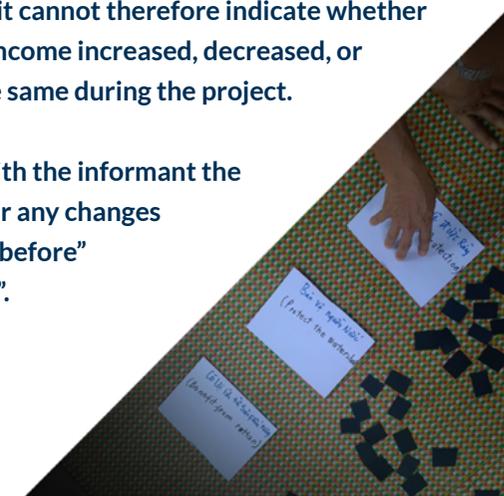


Photo credit: Iain Dickson



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 1: BEFORE AND AFTER SCORING

#### OPTION 2 STEPS 1 TO 4

**Option 2: allowing informants to select the number of counters for scoring “after”.**

- Step 1. Give the informant 20 counters, and asked them to assign these counters to show the importance of different sources of income (or other indicator of project impact) before the project.**
- Step 2. When they have finished, ask the informant to choose a total number of counters to show the situation after the project – they can select 20 counters again, or opt for more or fewer counters in total.**
- Step 3. Ask them to distribute the counters to show the situation after the project. This scoring system allows changes in total income to be assessed, as well as the relative importance of the different sources of income. The 20 counters at the start of the project represent a nominal baseline.**
- Step 4. Discuss with the informant the reasons for any changes between “before” and “after”.**

Scoring against a nominal baseline can be useful for measuring changes in sensitive impact indicators such as income, livestock

numbers or crop yields. People may be unwilling or uncomfortable discussing exact amounts in these cases, but with this scoring method, sensitive questions such as “How much money did you make?” or, “How many cattle do you own?” are not necessary.

#### EXAMPLE

A forest in Kabale District of Uganda was heavily used by local communities, who depended on sales of forest products for cash income, especially to pay school fees and for medicines. However, extraction of timber for the sale of fuelwood and charcoal in the District’s capital was at levels that were unsustainable and which were degrading the forest, reducing its value for biodiversity (including a small population of chimpanzees) and ecosystem services (watershed protection, with Kabale being a highland area with steep hill slopes). A project implemented by a local NGO sought to introduce alternatives to charcoal and fuelwood as sources of income. The alternatives included beekeeping, ecotourism (focused on the chimps), craft-making and processing of mushrooms harvested from the forest under licence from the Forest Department.



### Scoring

Having used a timeline to define “before” and “after”, a scoring exercise assessed the impact of the project on off-farm income, using a nominal baseline of 20 counters. Results for an individual household are shown in the table below.

Total Before (Nominal baseline): 20

Total After: 24 (20% increase from baseline).



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 1: BEFORE AND AFTER SCORING

SCORING			
SOURCE OF OFF-FARM INCOME		SCORE	
Honey from hives	Before	***	
	After	*****	
Tour guiding (ecotourism)	Before	**	
	After	****	
Crafts	Before	*	
	After	*	
Charcoal making	Before	*****	
	After	***	
Fuelwood sales	Before	****	
	After	**	
Dried mushroom sales	Before	*	
	After	****	





## LIVELIHOODS & GOVERNANCE FACTSHEET

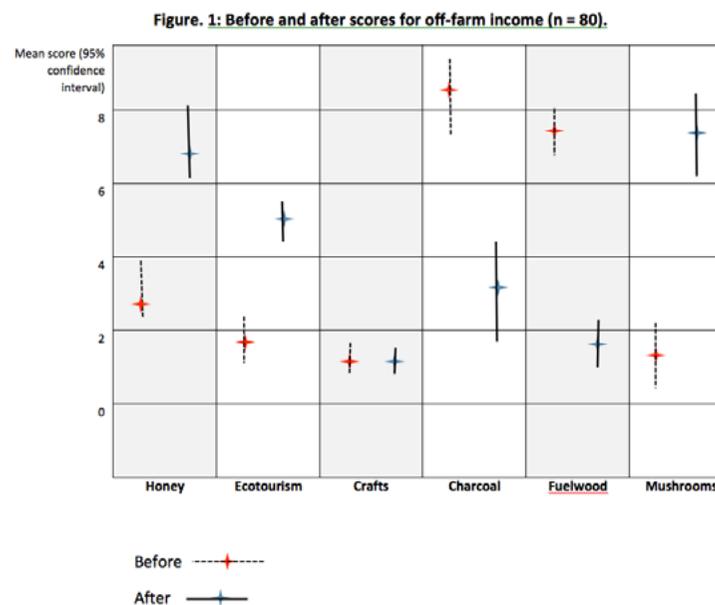
### PIA METHOD 1: BEFORE AND AFTER SCORING

#### Discussion

Discussions based on the responses were revealing, and were as important as the scores themselves. For example, respondents explained that they had been unable to secure additional markets for their crafts (mainly baskets made to local designs). Tourists, mainly back-packers, were not interested in purchasing such bulky items. Dried mushrooms had been especially popular and successful – a five-fold increase compared to “before”. Households were exploring ways of increasing production (through cultivation) in order to meet demand and to reduce reliance on wild-harvested mushrooms.

The exercise was repeated for 80 households, which allowed the calculation of means and 95% confidence levels as shown in Figure 1.

FIGURE 1:



#### Acknowledgements

Catley A, Burns J, Abebe D and Suji O (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville.

Available from [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf)



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 2: PROPORTIONAL PILING

#### STEPS 1 & 2

#### PIA Method 2 - Proportional piling

##### Introduction

This method is designed to be used as part of a Participatory Impact Assessment (PIA) evaluation design. Refer to the factsheet [Evaluation Design: Participatory Impact Assessment](#) for more information on how to use this method as part of a PIA.

Community participants are asked to score the importance of different possible causal factors for a given impact or outcome by placing counters (e.g. seeds or stones) on representations of each potential causal factor provided by picture cards or other visual aids, ideally made with local materials.

##### Required steps

**Step 1.** Before embarking on proportional piling of the project and non-project factors, it is important to have an informed discussion about the range of possible explanatory factors or “independent variables”. This discussion could be summarised in the form of a “causal diagram” showing all the potential project and non-project factors. Some kind of clear visual image is then needed for each of these factors – it may be helpful to have a local artist produce this.

**Step 2.** Community participants should then be divided into different focus groups, e.g. women and men. Individual members of each group can then distribute 20, 50 or 100 stones or seeds among the potential explanatory factors (as represented by the visual images). It should be noted that the greater the number of counters, the longer the exercise takes – fewer counters can be used if there are fewer variables. The results can be aggregated across the focus groups, or analysed separately to reveal socially-differentiated impacts.

##### Example

##### Scoring

An example of proportional piling is presented in Table 1 which shows the scoring (using 100 counters) of project and non-project factors that were judged to have contributed to positive change in incomes and sustainability of a local fishery, including through abandonment of fine-mesh nylon nets and implementation of a closed season whilst fish were spawning.

The focus group was asked to list and rank the factors (project and non-project) that had contributed to the changes, and then scored these factors using the counters. The conclusion was that the project-related factors made a 34% (22+8+4) relative contribution to sustainability of the fishery.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 2: PROPORTIONAL PILING

**TABLE 1: ATTRIBUTION BY RANKING AND SCORING  
FOR A FOOD SECURITY PROJECT.**

QUESTION	PROJECT OR NON-PROJECT FACTOR	RANK	SCORE
Enforcement by Government	Non-project	1	1
Secure tenure over fishing grounds	Non-project	2	2
Organisation of a fishing cooperative	Project	3	3
Government extension service	Non-project	4	4
Provision of larger mesh nets	Project	5	5
Provision of improved fish smoking ovens	Project	6	6

#### Discussion of scores

As with any PIA method, the discussion that takes place in relation to the scoring is an important part of the method, as it provides explanations for changes and can help to reveal socially differentiated impacts. For example, the discussion in this example revealed that whilst secure tenure over the fishery had benefited the community, giving them more control and an incentive to manage resources for the long-term, there were also some negative social and environmental impacts. A group of migrants who had settled in the village several years previously were not being given the same rights and had been excluded. As a result they had turned to alternative sources of income, and there were unconfirmed reports that the incidence of snare-setting in a nearby forest reserve had increased.

In this example the scoring was done as a group. However, the exercise could be done at individual or household level, which would allow the calculation of means and confidence levels.

#### Acknowledgements

Catley A, Burns J, Abebe D and Suji O (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville.

Available from [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf).

Richards M (2011). Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 2 – Social Impact Assessment Toolbox. Climate, Community & Biodiversity Alliance and Forest Trends, with Rainforest Alliance and Fauna & Flora International. Washington, DC.



### PIA Method 3: Tally method



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 3: TALLY METHOD

#### STEPS 1 TO 4

#### Introduction

This method is designed to be used as part of a Participatory Impact Assessment (PIA) evaluation design. Refer to the factsheet [Evaluation Design: Participatory Impact Assessment](#) for more information on how to use this method as part of a PIA.

The tally method involves asking participants to identify the factors that have caused changes in e.g. specified aspects of their livelihoods or well-being. One advantage of this method is that by not pre-defining the potential factors that have contributed to change in the community, there is less risk of influencing people's responses. On the other hand there may be a bias towards mentioning project-related factors and omitting important non-project factors, especially if the participants know the study is being carried out to analyse project impacts. Note that a large sample is needed to be confident when using the tally method.

#### Required steps

- Step 1.** Select a sample of participants to take part in the survey.
- Step 2.** Ask individual respondents in the sample to list all the factors they think have contributed to a specific project outcome or impact. Do not prompt them – it is important that they are allowed to generate the list of factors. Interview each respondent on his/her own (it is important that they haven't heard how others have responded).
- Step 3.** When everyone in your sample has been asked, add up the number of times each potential cause was mentioned.
- Step 4.** Identify which causes are linked to the project and which are not, and tabulate the results.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 3: TALLY METHOD

#### Example

74 project participants were asked the open-ended question “What has contributed to reduced encroachment into the forest by farmers?”. Based on their responses, a number was added every time each factor was mentioned. The results showed that five of the top six most frequently mentioned factors relating to reduced forest encroachment were directly related to the project.

#### Acknowledgement

Catley A, Burns J, Abebe D and Suji O. (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville.

Available from [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf).

**TABLE 1: REASONS FOR REDUCED FOREST ENCROACHMENT FOR AGRICULTURE.**

QUESTION	PROJECT OR NON-PROJECT FACTOR	NO. OF RESPONSES (N = 74)
Introduction of water harvesting methods	Project	68
Introduction of agroforestry	Project	59
Local cooperative for village processing of farm-produce	Project	50
Increased penalties for forest clearance	Non-project	46
Training in vegetable production	Project	38
Clear demarcation of forest boundary	Project	30
New road improving access to markets	Non-project	10
Government advice on preventing crop pests and diseases	Non-project	8
Better than average rainfall in last 3 years	Non-project	5

## PIA Method 4 - Matrix scoring

### Introduction

This method is designed to be used as part of a Participatory Impact Assessment (PIA) evaluation design. Refer to the factsheet [Evaluation Design: Participatory Impact Assessment](#) for more information on how to use this method as part of a PIA.



## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 4: MATRIX SCORING

#### STEPS 1 & 2

Matrix scoring involves the comparison of different items, project activities or services using a list of indicators (characteristics or qualities of the items). In cases where project and non-project items, impacts, activities or services are compared, the comparison can often be a powerful way of understanding project impacts in the context of pre-existing services or activities.

Like other scoring methods, matrix scoring can be standardised and repeated with different individual informants or groups of informants. Also in common with other methods, matrix scoring uses semi-structured interviews to understand the reasoning behind people's scores.

### Required steps

#### Designing the matrix - identifying the items to compare, and the indicators (features for comparison)

**Step 1.** Identify the items to be compared (relevant to your project's objectives). They might be different types of food, different service providers, different crops, or different types of income-generating activity. Where possible, include some items or activities that are not part of the project or are not related to it.

**Step 2.** Use pair-wise comparisons to identify the indicators, as follows:

- Select two items and ask people which item is more important and why. They will state a preference and give reasons why one item is more important than another. These reasons are your indicators, showing differences between items.
- Repeat the comparison using different pairs of items, until the informants are no longer offering new indicators (reasons for differences), but are referring back to the indicators/reasons they have already identified. You will now have a full list of indicators to use.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 4: MATRIX SCORING

#### STEPS 3 TO 9

#### Conducting the scoring

- Step 3.** Prepare pictures (or find objects) that depict the items to be scored and the indicators.
- Step 4.** Place the pictures of the items in a row on the ground. Verify the meaning of each picture with the informant(s).
- Step 5.** Select one of the indicator pictures and verify its meaning with the informant(s); place the picture adjacent to the item pictures.
- Step 6.** Using a pile of around 30 stones or seeds, ask informants to score the items against the indicator, using all of the stones. The scores are then checked and questions are asked to reveal the reasons behind the scoring.
- Step 7.** Select the second indicator and place this below the first, and repeat the scoring process with this indicator (with the same number of stones). Again, ask questions to check the scores and show the reasons for the scores.

**Step 8.** Taking each indicator in turn, repeat the scoring and gradually add more rows to the matrix until all of the indicators have been scored.

**Step 9.** Ask further questions to clarify, probe and explore the scores, so that the reasons for each set of scores are explained fully.

#### Example

A project implemented by a local NGO sought to introduce alternatives to charcoal and fuelwood sales as sources of income. The alternatives included beekeeping, ecotourism (focused on chimpanzees), craft-making and processing of mushrooms harvested from the forest under licence from the Forest Department.

Table 1 shows the reasons given for preferences among different income-generating activities in a project which sought to provide alternatives to fuelwood production and charcoal-making (see example in L&G Method 1).

Table 2 shows how matrix scoring was then used to assess the characteristics of the income-generating activities – both those that were introduced by the project and those already existing in the community.




**TABLE 1: REASONS GIVEN FOR INCOME-GENERATING ACTIVITY PREFERENCES.**

Honey vs crafts	We prefer honey, as markets are local – people even in the village are willing to pay a good price.
Honey vs ecotourism	We prefer honey because it is more reliable – we can't predict when tourists will come to the forest.
Honey vs charcoal	We prefer honey because it is legal – with tourism we are at risk of being fined or imprisoned if we are caught.
Fuelwood vs charcoal	We prefer fuelwood because the benefits are immediate and don't require investment; for charcoal it can take many days to create the kiln, etc.
Dried mushrooms vs honey	We prefer dried mushrooms because the product can be managed and it gives income year-round; honey can only be harvested in the dry season.

**TABLE 2: MATRIX SCORING OF DIFFERENT INCOME-GENERATING ACTIVITIES. PARTICIPANTS WERE GIVEN 15 COUNTERS TO SCORE FOR EACH INDICATOR. THE NUMBER OF DOTS INDICATES THE DEGREE TO WHICH EACH AN INCOME GENERATING ACTIVITY SHOWS THE CHARACTERISTIC CONCERNED.**

INDICATOR	HONEY	ECOTOURISM	CRAFTS	CHARCOAL	FUELWOOD	DRIED MUSHROOMS
Locality of markets	*****	*	*	**	***	***
Reliability of income	***	**	*	***	***	***
Legality – reduced risk	****	****	***			****
Immediacy of income	****	**	*	*	*****	**
Little investment needed	**	**	***	*	*****	**
Year-round income	**	*	*	***	****	****

### Discussion of scores

It is clear from this exercise that fuelwood meets many of the desirable characteristics of a useful source of income – locality of markets, immediacy of income, little investment required, etc. However, discussions revealed that its illegality and the risk associated with being caught is a key factor encouraging people to switch to alternatives (especially honey and dried mushrooms) when these are offered, and when technical and financial support is made available to help in overcoming any barriers to adoption.

Note that this method does not assess impact (in terms of level of uptake of the alternative livelihood) but it can help improve understanding of the issues underpinning people's choices and behaviours.

### Acknowledgements

Catley A, Burns J, Abebe D and Suji O. (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville.

Available from [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf).

Richards M (2011). Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 2 – Social Impact Assessment Toolbox. Climate, Community & Biodiversity Alliance and Forest Trends, with Rainforest Alliance and Fauna & Flora International. Washington, DC.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 5: BEFORE AND AFTER IMPACT CALENDARS

#### STEPS 1 TO 5

#### PIA Method 5 - Before and after impact calendars

##### Introduction

This method is designed to be used as part of a Participatory Impact Assessment (PIA) evaluation design. Refer to the factsheet [Evaluation Design: Participatory Impact Assessment](#) for more information on how to use this method as part of a PIA.

Impact calendars can be useful for measuring impacts against seasonally variable indicators. A comparison of the “before” and “after” project situation, when combined with semi-structured interviews on the reasoning behind people’s scores, can help to demonstrate and understand project impact.

#### Required steps

- Step 1.** Give project participants a set number of counters (e.g. 30 stones).
- Step 2.** Draw a 12-month calendar on the ground (or use cards, one for each month of the year).
- Step 3.** Ask participants to distribute their counters between the months to show the annual distribution of the indicator before the project, for example:
- use of their harvested crop;
  - use of cash savings;
  - incidence of sickness in the village/household;
  - attendance of children at school;
  - absence of community members on migration;
  - availability of water for drinking/livestock.
- Step 4.** If there are differences in the timing of fluctuations/ events between women and men, each variable should be considered separately for women and for men (and clearly marked). Alternatively, the group may decide to prepare separate calendars for women and for men.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 5: BEFORE AND AFTER IMPACT CALENDARS

#### STEP 6

**Step 5.** Leave the stones in place, and ask the participants to repeat the exercise, this time to show the situation after the project. Start by providing them with the same number of stones (30 – your nominal baseline) but before they begin distributing the counters tell them that they can add or take away stones to show any net change.

**Step 6.** Record the results and discuss the reasons for the way the counters have been distributed, and the differences before and after the project. Look for any patterns that can be seen, and cross-check and probe for possible inconsistencies. It is important to note different perspectives being represented among different participants. If there are several different groups, ask each group to present its calendar to the others for their reactions and comments. The following questions can be used to guide the discussion, but these should be adapted according to the focus of the exercise.

- Are there significant differences between the “before” and “after” calendars? Are these differences attributed to the project, or is there some other explanation?
- How do women’s calendars compare with men’s?
- What are the key linkages or “cause and effect” relationships? For example income and food

supply, or rainfall and labour, or weather and disease?

- Are the indicators fairly stable or do they show great seasonal variations?
- Which are the most difficult or high-risk times in the year? How do people plan for these and respond to any risks?
- Are there any differences compared with the situation 10/20/30 years ago?
- What are the possible implications of these findings for any future intervention?

#### Example

A project aimed to improve the ecotourism facilities at a community in an area adjacent to a newly designated forest reserve popular with birdwatchers, in order to extend the season for tourists. Discussions had shown that income was concentrated in just three months (June-August) and that the community was generally unhappy with the restrictions which the reserve placed on their access to resources, threatening their long-term support for its protection.

Participants were given 20 counters representing the total income received from ecotourism in a given year. Using 12 cards to represent each month of the year, participants were asked to distribute the counters along a 12-month calendar to show how the monthly income from ecotourism was spread over the course of the year.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### PIA METHOD 5: BEFORE AND AFTER IMPACT CALENDARS

EXAMPLE												
INDICATOR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Year before project					**	*****	*****	*****	***			
Year after project			**	**	***	***	***	***	**	**		
Year after project (non-participating community)					*	*****	*****	*****	*			

Before the project, tourists visited the area mostly in high season (June-August). After the project the community was receiving income from tourists over a longer period. This was not the case for communities that were not part of the project, suggesting that the project had the outcome of attracting tourists to the community outside the traditional high season.

#### Other resources

Catley A, Burns J, Abebe D and Suji O. (2013). Participatory Impact Assessment: A Design Guide. Feinstein International Center, Tufts University, Somerville.

Available from [http://fic.tufts.edu/assets/PIA-guide\\_revised-2014-3.pdf](http://fic.tufts.edu/assets/PIA-guide_revised-2014-3.pdf).

Richards M (2011). Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 2 – Social Impact Assessment Toolbox. Climate, Community & Biodiversity Alliance and Forest Trends, with Rainforest Alliance and Fauna & Flora International. Washington, DC.

Fauna & Flora International (2013). Seasonal Calendar. Conservation, Livelihoods and Governance Programme, tools for participatory approaches.

PDF download: <http://www.fauna-flora.org/wp-content/uploads/Seasonal-Calendar.pdf>.



## Factsheet: Community-based Organisational Capacity Assessment



### LIVELIHOODS & GOVERNANCE FACTSHEET

### COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

### STEPS 1 TO 4

#### Introduction

Organisational capacity assessment (OCA) can be used to produce a baseline against which performance of a community-based organisation (CBO) may be tracked and the impact of actions that aim to build their capacity can be assessed. In addition to evaluations, an OCA carried out at the start of a project also helps to identify areas for improvement, and can be used to inform development of an action plan to address key weaknesses in the CBO.

Many different tools for OCA exist and NGOs and CBOs vary widely in purpose, type, location, external context and other factors. It is important, therefore, to target aspects of an organisation for assessment that are relevant. See the [Table 1: CBO Assessment Questionnaire](#) for a simple questionnaire-based tool, which can be adapted to evaluate specific aspects of CBO capacity.

The evaluation design described below uses a before and after scorecard-based assessment of the capacity of the CBO being targeted by the project to show change. This is combined with focus group discussions to identify reasons for change and any attribution to the project.

#### Required steps

- Step 1.** Familiarise yourself with the tool, the aspects of organisational capacity covered and the scoring system outlined in [Table 1: Community Based Organisation Assessment tool](#)
- Step 2.** Meet with the CBO and explain the process at least two weeks before the actual assessment date. Provide the questionnaire ([Table 1](#)) and give an overview of the purpose of the exercise, explaining any terms and identifying whether the CBO will complete the whole questionnaire or focus on specific sections that are relevant to the actions being implemented by the project. It is recommended that one or two of the CBO office-holders should be well versed in the process and should be the ones to lead the group's assessment together with the main (external) assessor.
- Step 3.** Encourage the group to organise a consultative meeting with a few selected members of the group to go through the questionnaire in advance.
- Step 4.** Convene a meeting to conduct the assessment. A participatory approach is encouraged in which not just the members of the CBO are involved but also representatives from other stakeholders such as relevant government personnel, other groups, NGOs, and private sector companies working in the area.





**LIVELIHOODS & GOVERNANCE FACTSHEET**

**COMMUNITY-BASED ORGANISATIONAL CAPACITY ASSESSMENT**

**STEPS 5 & 6**

**Step 5.** Go through the questions one at a time, allowing plenty of time for clarification and discussion. When attaching a score to any of the questions, encourage the participants to write down reasons for their scores – this is very helpful for the analysis and discussions that follow. A space is provided for entering this information. Explain to participants that they should mark the box that is closest to describing the situation at hand: descriptions do not need to be perfect. Consensus must be reached by the participants before the score is recorded.

**Step 6.** When all relevant aspects have been scored, work out the weakest points in the CBO where capacity needs to be built, as well as the strongest aspects which can sustain the CBO. Confirm with the members that the results are a true reflection of the situation in the organisation, and where necessary work out any changes to the assessment through group discussion.

Take the averages of the scores for each of the capacity areas and enter them into the following table in the “scores before column”

CBO ASSESSMENT SCORECARD					
CAPACITY ASPECT	SCORE BEFORE	SCORE AFTER	CHANGE	REASONS FOR CHANGE	EVIDENCE





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

### STEPS 7 TO 10

- Step 7.** If the assessment is being done at the start of the project (to establish a baseline), discuss with participants how they think capacity will be built, what resources will be needed, where they think they could get the resources, and what the role of the project should be.
- Step 8.** Compile all this information (assessment results, explanations, plan of action) into a report and share it with the CBO and other stakeholders.
- Step 9.** At the end of the project carry out the assessment in the same way and enter the average of the scores in the “scores after” column in the CBO assessment scorecard, also complete the remaining columns to show the change in scores, the reasons for change and the evidence to support the scoring. These last two columns are particularly important for assessing attribution (determining whether any change can be attributed to the project). See the example on the following pages for an example of a completed scorecard.

### Example

South Mara Water Users Association is a Local Conservation Group (LCG) working in the Masurura Swamp, Mara, in Tanzania, one of the critical wetlands in the Lake Victoria Basin.

A project aiming to develop the capacity of the LCG held an initial Participatory Meeting with North Mara Water Users Association representatives. Under coordination of 2 project team members 17 participants (4 women and 12 men from the LCG and 1 participant from the Ward Extension Office) completed Organizational Capacity Assessment tool questionnaires.

Capacity areas were rated from 0-4 where: Highly satisfactory = 4 (High level of capacity in place); Satisfactory = 3 (Moderate level of capacity in place); Unsatisfactory with positive signs = 2 (Basic level of capacity in place); Unsatisfactory = 1 (Clear need for increased capacity); Nothing positive = 0 (No capacity, completely urgent action required).

After the project the same individuals were asked to complete the questionnaire again. Scores from before and after the project were compared to show changes in the capacity of the group. The table below shows a summary of the scores from the full assessment based on the different capacity areas.



TABLE 1. SUMMARY OF ORGANISATIONAL CAPACITY ASSESSMENT RESULTS.



CAPACITY ASPECT	SCORE BEFORE	SCORE AFTER	CHANGE	REASONS FOR CHANGE	EVIDENCE
Aspirations and strategy	3	3	0		
Organisation skills	2	3	+1	The project designed and ran a programme of training on organisational management, including budgeting, good governance and leadership. It also led a process, with Board members and senior staff, to put in place a clear strategy with vision and goals. However, as a result of staff turnover, capacity gaps still remain.	<ul style="list-style-type: none"> <li>• Organisational strategy</li> <li>• Meetings of the Board</li> <li>• Records of staff attendance at training courses</li> </ul>
Human resources	3	4	+1	With funding from a local charitable foundation the organisation was able to recruit a communications officer to fill a critical staffing gap. This change cannot be attributed to the project.	<ul style="list-style-type: none"> <li>• Staff list, job description and organigram</li> </ul>
Systems and infrastructure	2	4	+2	The project's focus was on improving systems for financial management (which were poor) and accounting. These are now fully in place.	<ul style="list-style-type: none"> <li>• Financial management handbook</li> <li>• Democratically elected treasurer on the Board</li> <li>• Audited accounts available</li> </ul>
Organisational structure	2	2	0		
Mean score	2.6	3.2			

**Acknowledgements**

BirdLife International (2008). Capacity Assessment Tool for Site Support Groups. Nairobi, Kenya.

[http://www.birdlife.org/sites/default/files/attachments/BirdLife\\_Africa\\_SSG\\_Capacity\\_Assesemen\\_%20Tool\\_v4\\_1.pdf](http://www.birdlife.org/sites/default/files/attachments/BirdLife_Africa_SSG_Capacity_Assesemen_%20Tool_v4_1.pdf)

Bond (undated) Assessing effectiveness in building the capacity of organisations and institutions. Bond, UK.

<https://my.bond.org.uk/sites/default/files/impact-builder/CapacityDevelopment.pdf>



## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

**TABLE 3: COMMUNITY BASED ORGANISATION CAPACITY ASSESSMENT QUESTIONNAIRE**

Name of CBO:		Location:			
Date of assessment:		Name of assessor:			
Number of staff members of CBO:		CBO budget for last 12 months:		Number of CBO members (non-staff):	
<b>(If applicable)</b>					
Total score from any previous assessment		Date of previous assessment:			
<b>Names of participants in assessment meeting and where they are from (external stakeholder participation is encouraged)</b>					
1.		2.			
3.		4.			
5.		6.			
7.		8.			
9.		10.			





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

MAIN CAPACITY AREAS	ASPECTS BEING ASSESSED	SCORE (0-4)*	BRIEFLY EXPLAIN THE REASONS FOR YOUR SCORE
<b>ASPIRATIONS &amp; STRATEGY</b>			
Mission, Vision and Strategic Goals	<b>1. Values and Purpose:</b> the CBO has a clear understanding of the purpose of their mission and strategic goals, and what it aspires to achieve, and adheres to the values of the group.		
	<b>2. Risk assessment:</b> the CBO understands and responds to the risks to which the group is exposed, including likelihood, impacts and potential solutions/mitigation measure.		
	<b>3. Information about CBO:</b> The entire membership is well informed about the group's programmes, to the level that they can contribute effectively in the group's objectives and plans.		
	<b>4. Overarching Goals:</b> CBO's vision translated into clear, bold set of (up to three goals) that the group aims to achieve specified by a well-defined time frame for attaining goals.		
Conservation Goals	<b>5. Involvement in Conservation:</b> the CBO has a demonstrable interest in conservation, has projects and activities that relate to the conservation issues at their IBA site.		
Overall Strategy	<b>6. Strategic Focus:</b> the CBO has a strategic action plan complete with clear objectives, achievable targets and clear focus on environmental conservation.		
Organizational Review	<b>7. Group Review:</b> the CBO leadership periodically reviews the structure and programmes of the group to ensure effectiveness and best use of resource.		
Program Development	<b>8. Projects Development:</b> the CBO understands the project development process, implementation procedures, including work planning, how donors work, reporting and accounting.		
Fundraising and Revenue Generation	<b>9. Sustainability Measures:</b> the CBO has reliable sources of income, and is able to mobilize resources through proposal writing and/or has established (or has the potential of establishing) income generating nature-based enterprises.		
Goals/performance targets	<b>10. Monitoring:</b> The CBO together with the entire membership keeps track of the implementation of plans against the group's objective.		
Total score (Aspirations & Strategy)			
Average score (Aspirations & Strategy)			





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

MAIN CAPACITY AREAS	ASPECTS BEING ASSESSED	SCORE (0-4)*	BRIEFLY EXPLAIN THE REASONS FOR YOUR SCORE
<b>ORGANISATION SKILLS</b>			
Operational Planning	<b>1. Planning Process:</b> The CBO has a clearly documented and well understood process for how it should plan and review its work.		
	<b>2. Resources:</b> planning within the CBO takes into account financial and human resources available.		
Internal Communication	<b>3. Communication within CBO:</b> planning and all other activities within the group are properly communicated. Key information is effectively and timely shared with all the officials and entire CBO membership.		
	<b>4. Meetings:</b> meetings are convened regularly, involving the entire membership (always meeting the quorum regulations). The agenda is circulated well in advance to ensure effective contribution and deliberations are recorded in written minutes available to all members.		
External Relationships	<b>5. Learning from Others/Collaboration and Partnerships:</b> the CBO takes time to learn and draw lessons from other partners and stakeholders who have relevant knowledge and experience before undertaking work. The CBO has agreed guidelines on collaboration.		
	<b>6. External Communication:</b> all communications from outside including letters, e-mails and phone calls are dealt with promptly by the officials.		
Performance Analysis and program adjustments	<b>7. Managing Change:</b> where major changes takes place in the program adjustments group, i.e. in management, projects, partners etc.—the organization's leadership works together as a team to institute necessary management interventions.		
Knowledge/Data Management	<b>8. Filing System:</b> the CBO has a filing system that ensures all documents are well organized making it easy to access and track information.		
	<b>9. Sharing Knowledge:</b> the CBO encourages openness and transparency in sharing of knowledge/data amongst the group members.		
Total score (Organisational skills)			
Average score (Organisational skills)			





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

MAIN CAPACITY AREAS	ASPECTS BEING ASSESSED	SCORE (0-4)*	BRIEFLY EXPLAIN THE REASONS FOR YOUR SCORE
<b>HUMAN RESOURCES</b>			
<b>Membership composition and commitment</b>	<b>1. Commitment and Involvement:</b> CBO membership commitment to conservation, to the needs of the entire membership and widely involves the membership in group's activities, consistent with individual's skills, experience and availability.		
<b>Membership/ Governance</b>	<b>2. Governance:</b> responsibilities are shared amongst officials. Members assist the leader in establishing and articulating the CBO's objectives, plans and in reviewing the CBO's performance.		
	<b>3. Leadership:</b> The CBO's leaders are democratically elected and are answerable to members.		
<b>Professionalism and Skills</b>	<b>4. Members' Skills and Experiences:</b> members of the CBO handling different aspects are properly trained and experienced to deliver effectively and efficiently.		
	<b>5. Knowledge and Expertise on Conservation:</b> the CBO has scientific and technical expertise on biodiversity issues (e.g. botanists, ecologists etc.) and socio-economic issues (lawyers, economists, sociologists etc.).		
	<b>6. Learning Opportunities:</b> the CBO provides opportunities for its membership to increase knowledge, skills and experience.		
<b>Co-ordination Team/Process</b>	<b>7. Delegation and Co-ordination:</b> the CBO leadership delegates wisely, giving other members an opportunity to take responsibility in the running of the group. The leadership ensures co-ordination of activities of the group.		
	<b>8. Conflict Management:</b> the CBO has laid down procedures for conflict management and resolution. Members can appeal in case when they feel they have been treated unfairly.		
<b>Motivation and Rewards</b>	<b>9. Member's Motivation:</b> the CBO leadership understands its membership and takes time to encourage, develop, congratulate, reward and recognize, etc., to ensure the members are motivated at all times.		
<b>Decision Making Framework</b>	<b>10. Decision Making:</b> the CBO leadership takes into account the views of its membership and other stakeholders, the risks, financial situations, etc. before making any decisions on behalf of the group.		
<b>Total score (Human resources)</b>			
<b>Average score (Human resources)</b>			





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY- BASED ORGANISATIONAL CAPACITY ASSESSMENT

MAIN CAPACITY AREAS	ASPECTS BEING ASSESSED	SCORE (0-4)*	BRIEFLY EXPLAIN THE REASONS FOR YOUR SCORE
<b>SYSTEMS, INFRASTRUCTURE AND ORGANISATIONAL STRUCTURE</b>			
<b>Monitoring Systems</b>	<b>1. Monitoring System:</b> A basic monitoring system is in place where information is recorded about projects, inputs and outputs against objectives and activities.		
<b>Financial Operations Management</b>	<b>2. Financial Management:</b> the CBO has a bank account, and a treasurer who is democratically elected, and is responsible for managing the group's finances.		
	<b>3. Accounting Procedures:</b> the CBO keeps books of accounts and has reliable procedures to ensure that resources are managed properly and the records properly kept.		
	<b>4. Financial Transparency:</b> the CBO's financial management and reporting is transparent and the leadership is open to discuss financial matters with the membership as appropriate.		
	<b>5. Budgeting:</b> the CBO members are involved in developing and monitoring the budget annually.		
<b>Infrastructure</b>	<b>6. Building and Office Space:</b> The CBO owns or has access to an office to conduct meetings, carries out group operations and stores the group's resources. The CBO also has access to reliable communication facilities- telephone, computers etc.		
<b>Total score</b> (Systems and infrastructure)			
<b>Average score</b> (Systems and infrastructure)			
<b>ORGANISATIONAL STRUCTURE</b>			
<b>Organisational Structure</b>	<b>1. Participation of Members:</b> the CBO's leadership encourages members to express their opinions about the group's work and operation and is open to different points of view.		
	<b>2. Constitution/Bye Laws:</b> The CBO's meets all legal requirements. A constitution is developed in a participatory manner, which clearly defines the roles and responsibilities of the officials.		
<b>Organisational Design</b>	<b>3. Organizational Design:</b> the CBO has a structure that ensures effective and best use of resources.		
	<b>4. CBO Operational Structure:</b> the CBO structure chart shows the line of responsibility between the different positions in the group.		
<b>Total score</b> (Organisational skills)			
<b>Average score</b> (Organisational skills)			





## LIVELIHOODS & GOVERNANCE FACTSHEET

### COMMUNITY MAPPING

#### STEPS 1 TO 5

### Factsheet: Community mapping

#### Introduction

In many countries, land rights are determined by complex and often overlapping systems of formal law and customary norms. The most accurate information regarding land use, access, resource rights and ownership is often held by local communities. Participatory mapping is therefore an appropriate method for assessing impacts on rights to land and resources, as well as other spatial changes. The method can be used to show information regarding the occurrence, distribution, access to and use of resources; topography; human settlements; land tenure; and livelihoods activities. Cartographic precision is not important, as this tool is not designed for demarcating boundaries or calculating areas under a particular land use. It can however be used to identify ownership of land, and the location, access and use of key natural resources. By repeating the mapping exercise for different time periods it can be used to monitor changes in tenure and resource rights. This tool is most suitable for a geographically limited area. For larger areas it may be appropriate to produce more than one map.

#### Required steps

**Step 1.** Ask participants to select a suitable place in which to draw the map and the medium they will use, which could be on the ground using stones, seeds, sticks and coloured powder; on the floor using chalk; or directly onto a large sheet of paper using pencils and pens.

**Step 2.** Agree with participants exactly what area the map will cover, such as a village a river basin, etc.

**Step 3.** Explain that the quality of the drawing is not important and it does not matter if the map is not entirely accurate or to scale. If any of the participants are illiterate it is important to use symbols and drawings, with a key to interpret the symbols into the local language (and where necessary, into (a) relevant language(s) for other intended users of the information).

**Step 4.** Ask participants to start by preparing the outline or boundary of the map and then identify the central point or an important landmark within the area (such as a mosque, school or market place).

**Step 5.** Other important landmarks can now be drawn.

Participants should develop the content of the map according to what they think is most important. The map does not need to show every individual house, shop, field, etc., but rather the area where they are located. Local landmarks and features might include:

- infrastructure and services (e.g. roads, houses, bridges, schools, health clinics, bus stops, shops and markets);
- special places (e.g. location of medicinal plants, places of worship, sacred sites, cemeteries);
- water sites and sources;





## LIVELIHOODS & GOVERNANCE FACTSHEET

## COMMUNITY MAPPING

## STEPS 6 TO 10

- agricultural land (e.g. crop varieties and locations, grazing areas), soils, slopes, elevations;
- natural resources (e.g. areas of forest, rivers, location of species of specific interest) and areas of eg. predation or crop raiding;
- hazards/areas prone to risk (e.g. floodplains, infrastructure vulnerable to floods, drought-prone areas).

- Step 6.** Although it might take some time to get going, the process should not be rushed. Once the mapping is underway, sit back and observe, and only interrupt if absolutely necessary in order to clarify something or to help participants if they get stuck.
- Step 7.** If the map is being drawn on the ground, once the broad outline has been established, participants can start making a copy on to paper (indicating which direction is north). This process is important because extra information and corrections can often emerge as a result. Also it is important that a copy or permanent record of the map is available if the contributors want it.
- Step 8.** If the focus of your assessment is on tenure and rights to resources, ask relevant information to be entered onto the map.

**Step 9.** Discuss and analyse the map(s). Ask participants to describe what they have produced and ask questions about anything that is unclear. If there are several different groups, each group should present and describe its map to the others for their reactions and comments. Are there major differences? If so, note these and whether a consensus is reached. Note that a consensus is not necessarily a desired outcome – differences in perceptions of land use can be a very useful basis for further discussions

**Step 10.** To assess a project's impact (e.g. land tenure or rights to resources), complete the mapping exercise at the start (baseline) and at the end of the project. If you don't have a baseline then ask participants to draw a series of maps to illustrate changes. Ask questions about the map to help you understand the causes of any changes and about the contribution of your project.

### Acknowledgement

Reproduced with permission (and with minor adaptations only) from: Fauna & Flora International (2013). Guidance sheet on Community Resource Mapping. Conservation, Livelihoods and Governance Programme, Tools for participatory approaches.

Available at: <http://www.fauna-flora.org/wp-content/uploads/Community-Resource-Mapping.pdf>.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

#### STEP 1

#### Factsheet: Basic Necessities Survey (BNS)

##### Introduction

If poverty can be defined broadly as “the lack of basic necessities”, a valid approach to poverty assessment is to check whether a project has resulted in a change in the extent to which people’s “basic necessities” are being met. Unlike income-based approaches to poverty assessment (e.g. numbers of people living on less than US\$2/day), there is no a priori definition of “basic necessities”, partly since what can be considered as a basic necessity is likely to vary both with location (different communities and cultures) and over time.

The Basic Necessities Survey (BNS) method<sup>15</sup> has been adapted to a number of contexts, most comprehensively by the Wildlife Conservation Society (WCS) for social impact monitoring in conservation landscapes<sup>16</sup>. The BNS method measures poverty change over time according to whether community members think they are getting more or less of their basic necessities than before the project, or since the last time that the BNS was carried out.

The BNS method can be implemented in control and treatment (project) communities in order to assess attribution, and is therefore a very useful method when used in conjunction with a quasi-experimental approach, assuming that the project expects to have an impact on the general poverty level of the project communities. Alternatively, and in the absence of any control communities, it could be used in conjunction with [participatory impact assessment methods](#) or the Theory of Change approach (see Factsheet: [Completing a Theory of Change](#)) to assess the causation of any changes in poverty levels.

#### The BNS is undertaken in three main steps:

- Step 1. Identification of possible basic necessities via focus groups;
- Step 2. Application of the survey;
- Step 3. Analysis of the data collected.

#### Required steps

##### Step 1. Identification of possible basic necessities via focus groups

Use focus group discussions to generate an initial list of goods (e.g. TV, bicycle, radio, wheelbarrow, machete) and services (e.g. all school age children attending school; walking distance to a health clinic) that the participants may or may not think are basic necessities. In focus group discussions some individuals may dominate the discussion, e.g. women may not talk much in front of men and minorities may not talk when in

<sup>15</sup>The BNS method was developed in 1998 by Rick Davies (<http://www.mande.co.uk/welcome>), an independent monitoring and evaluation expert working for ActionAid. This description of the BNS method is adapted from a version in: Richards M (2011). Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 2 – Social Impact Assessment Toolbox. Climate, Community & Biodiversity Alliance and Forest Trends, with Rainforest Alliance and Fauna & Flora International. Washington, DC ([http://www.forest-trends.org/documents/files/doc\\_2981.pdf](http://www.forest-trends.org/documents/files/doc_2981.pdf)) which has itself been adapted from a version licensed under the Creative Commons Attribution-Noncommercial-Share Alike 3.0 Licence. To view a copy of this licence, visit: <http://creativecommons.org/licenses/by-nc-sa/3.0/>.

<sup>16</sup>Wilkie D, Wieland M and Detoef D (2015). A guide to the modified Basic Necessities Survey: Why and how to conduct BNS in conservation landscapes. WCS, New York, USA (<http://programs.wcs.org/carbon/Communities/WCS-Resources/Publications.aspx>).



## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

#### STEP 1

a group composed mostly of the ethnic majority. Also women may have different views from those of men about what the basic necessities for life are, and young people may also have different ideas about basic needs compared with those of older people. A mixed age and mixed gender focus group may be adequate to capture these differences, but more often you will need to conduct several groups composed of different community members:

- men-only and women-only groups;
- groups of young people and groups of older people;
- groups of ethnic minorities.

It is important that the list includes items which almost everyone would agree are basic necessities (e.g. enough food each day), and others where there are likely to be different views (e.g. having a TV). The list should include between 20 and 30 village-defined goods and services (about equal numbers of each). This should include some items that only a few people in the group think are current necessities, but which could become necessities in the future. At this point it is a list of possible basic necessities, not a final list of agreed basic necessities.

#### Ensuring your list is clear and easily measurable

- Goods should be durable goods that can be used multiple times. Consumable goods (e.g. food, beverages, petrol) can run out and should not be included in the list. If one of these consumable items is very important, turn it into a service, for example “meal three times a day”.
- The list should not have services that can be easily misinterpreted, those that are difficult to record with a

yes or no answer (e.g. “a healthy family” or “well trained teachers”), or that cannot be reliably observed by different people. Keep in mind that for each element of your final list, people will have to answer two simple questions: “Do you have it?” “Is it really necessary (a basic necessity)?” It is very important for a yes or no answer to be given easily and with confidence.

- If the description of a good or service is too vague, it will take too much time for people to answer the question. For example, asking whether someone has “access to a good school” can be very complicated: the school might be good, but the household may not have the money to send their children to this school. Be very specific about services, e.g. by defining what type of school you are talking about, what is “good”, and how you define having access to it, in order to ensure that your question is understood in the way you intend it to be.

#### WHAT IS ACCESS?

Access to a service is sometimes difficult to define, so it is important to think about what this means. Does it just mean the service is available? Or does it mean that it is available and the household has the ability to purchase/use the service? For example a secondary school may be in a town nearby, but if a household doesn't have the money to pay for accommodation, do they really have access to it? *For the BNS, access means that a household is actually able to use the service, not that the service simply exists in the village.*



**Step 2. Application of the survey****LIVELIHOODS &  
GOVERNANCE  
FACTSHEET****BASIC NECESSITIES  
SURVEY (BNS)****STEP 2****Meet with village leaders**

Before conducting a BNS survey, talk with the village elders and residents to explain the purpose of the study and to ask their permission to conduct surveys in the village. It is extremely important to take the time to explain to the authorities and to the participants why you are conducting the BNS, detailing the process, showing how they can benefit from the results of the survey and ensuring that they completely understand the objective of your presence in the village. For more guidance on conducting surveys, including selecting a sample to survey, see the Factsheet: Questionnaires.

**Define “basic necessity”**

If people don't understand what a basic necessity is, they may answer “yes” to the entire set of questions, making it very difficult for you to analyse the answers. A common mistake is to think that “necessity” is the same as “important”. It is not. Here is the definition of a basic necessity: “Something all families should be able to have and no family should have to live without”.

The interviewee must understand that a basic need is more than just something they would like to have to make their lives better, and it is more than something that is important to have. It is something that you can't live without, something

essential to life. The problem is, in some languages, words like “necessary” or “essential” don't exist. So before going into the field, sit with your team to define “basic necessity” in the local language.

After you finish your explanation, to check whether the person you are interviewing understands the difference between a basic need and something important, you can ask two questions, using goods or services that are not in your list. For example, if in your final list you don't have a pair of shoes and sunglasses, you can ask: “Do you think a pair of shoes is a necessity?” It most likely is, and most people would answer “yes” if they understood the explanation you gave them. If they don't, then you will have to explain it again. If they do, then you can ask another question: “Do you think a pair of sunglasses is a necessity?” It is most likely not, and most people, if they understood the explanation you gave them, should answer “no”. If they don't, you will have to explain the definition of a basic necessity again. If they do, it means you can start your survey.

**Conducting the survey - questions to ask**

Ask each male or female household head (picked randomly) in your survey sample two basic questions:

- Which items on the list do you consider are basic necessities that everyone should have, and no-one should have to do without?
- Which items on the list does your household possess now?





## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

#### INFORMATION IN THE DATA SHEET

##### Survey information

- The date on which the survey was conducted.
- The name of the village.
- The name of the person in the household who participated in the survey.
- The name of the head of the household.
- The unique ID number of the household surveyed (this is vital to keep the surveys separate from each other).

##### Household demography

For each member of the family, record information such as their gender, the number of years they spent in school, their year of birth and ethnicity.





## LIVELIHOODS & GOVERNANCE FACTSHEET

## BASIC NECESSITIES SURVEY (BNS)

### STEP 3

TABLE 1: EXAMPLE OF A COMPLETED HOUSEHOLD BNS FORM.

ASSET OR SERVICE	ITEM	HAVE NOW? YES = 1, NO = 0	ARE BASIC NECESSITIES? YES = 1, NO = 0
Asset	1 hectare of land per person	0	1
Asset	Electric light	1	1
Asset	Bicycle	1	0
Asset	Concrete rice drying yard	1	0
Asset	Wooden rice chest	1	1
Service	3 meals a day	1	1
Asset	Buffalo or cow	0	1
Service	All children studying to level 2	0	1
Asset	Well with well head	0	1
Asset	Stone built house	0	0
Asset	Thick cotton blanket	1	1
Service	Doctor visiting house when sick	1	1
Asset	Electric fan	0	0
Service	A new set of clothes each year	1	1
Service	Livestock vaccination	0	0
Service	Meat once a week	0	1
Asset	Pesticide pump	0	0
Asset	Watch	0	0
Service	Access to loans	0	1
Asset	Radio	0	0
Asset	Toilet - built of stone	0	1
Asset	Table made of good wood	1	1
Asset	Two-compartment wood wardrobe	0	0
Asset	TV	0	0
Asset	Bathroom	0	0
Asset	Motorbike	0	0

The list of items can be read out to respondents or typed on cards which are then sorted in response to the two questions above. Table 1 presents an example of a completed household BNS form.

As well as basic survey information, it is also helpful to collect some demographic information about each household that you interview. This will help you to understand differences in impacts of your project within the communities where you are working (see box).

### Step 3. Analysis of the data collected

Data analysis involves the following steps (see Tables 2 and 3):

- Determine which items are “basic necessities” – these are defined as items which over 50% of the households interviewed think are basic necessities;
- Calculate a weighting (fraction) for each item based on the percentage of households who think it is a basic necessity. For example if 350 out of 420 households interviewed think it is a basic necessity, the weighting is  $350/420 = 0.833$  (Tables 2 and 3);
- Calculate a maximum possible score for a household with all the basic necessities (this is the sum of all the weighting scores for the items in the “basket” of basic necessities – Column A in Table 1);
- For each household, calculate a poverty index (%) by adding up the weighted scores for that household (Column B) and dividing this by the maximum score (Column A), as shown in Table 2.



## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

**TABLE 2. AN EXAMPLE OF A BASIC NECESSITIES WEIGHTING TABLE FROM A BNS DATASET. THOSE ITEMS NOT CONSIDERED TO BE A BASIC NECESSITY BY MORE THAN 50% OF THE 420 PEOPLE SURVEYED ARE HIGHLIGHTED IN RED.**

ITEM	# WHO CONSIDER NECESSITY	% WHO CONSIDER NECESSITY (WEIGHTING)
1 hectare of land per person	418	99.5%
Electric light	418	99.5%
Bicycle	418	99.5%
Concrete rice drying yard	415	98.8%
Wooden rice chest	414	98.6%
3 meals a day	413	98.3%
Buffalo or cow	412	98.1%
All children studying up to level 2	412	98.1%
Well with well head	411	97.9%
Stone built house	410	97.6%
Thick cotton blanket	408	97.1%
Doctor visiting the house when sick	399	95.0%
Electric fan	391	93.1%
A new set of clothes each year	388	92.4%
Livestock vaccination	386	91.9%
Meat once a week	350	83.3%
Pesticide pump	336	80.0%
Watch	325	77.4%
Access to loans	322	76.7%
Radio	312	74.3%
Toilet - built of stone	188	44.8%
Table and chairs made of good wood	175	41.7%
Two-compartment wooden wardrobe	135	32.1%
TV	88	21.0%
Bathroom	78	18.6%
Motorbike	32	7.6%

**TABLE 3: EXAMPLE OF A HOUSEHOLD BNS POVERTY SCORE FOR BASIC NECESSITIES**

ITEM	HAVE NOW? YES = 1, NO = 0	COLUMN A WEIGHTING (FRACTION)	COLUMN B POVERTY SCORE
1 hectare of land per person	0	0.995	0.000
Electric light	1	0.995	0.995
Bicycle	1	0.995	0.995
Concrete rice drying yard	1	0.988	0.988
Wooden rice chest	1	0.986	0.986
3 meals a day	1	0.983	0.983
Buffalo or cow	0	0.981	0.000
All children studying up to level 2	0	0.981	0.000
Well with well head	0	0.979	0.000
Stone built house	0	0.976	0.000
Thick cotton blanket	1	0.971	0.971
Doctor visiting the house when sick	1	0.950	0.950
Electric fan	0	0.931	0.000
A new set of clothes each year	1	0.924	0.924
Livestock vaccination	0	0.919	0.000
Meat once a week	0	0.833	0.000
Pesticide pump	0	0.800	0.000
Watch	0	0.774	0.000
Access to loans	0	0.767	0.000
Radio	0	0.743	0.000
<b>Total</b>		<b>18.471</b>	<b>7.793</b>

Poverty score	7.793
Maximum possible score	18.471
<b>Poverty index</b>	<b>43.29%</b>





## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

#### TO LEAD A GOOD BNS INTERVIEW:

- Take gender into account
- Take 30 minutes maximum
- Use local language
- Interview in private
- Use women to survey women; minorities to survey minorities
- Provide a clear and concise introduction
- Define basic necessity
- Ensure BNS is NOT a wish list
- Don't influence answers
- Look around you
- Estimate ages if they don't know

#### Household demography

For each member of the family, record information such as their gender, the number of years they spent in school, their year of birth and ethnicity.

#### REPEAT SURVEYS AND BASIC NECESSITIES

Perceptions of “basic necessities” can change over time. When conducting a second BNS (with the same households) if significant time has elapsed since the previous survey (e.g. more than 2 years), the focus group exercise should be repeated to see if any additional items need to be added to the list or old ones deleted (since by now nearly all households may have an item on the original list). Scores can be calculated for each household both on the basis of a new extended list and, after excluding the new items, on the basis of the old list.





## LIVELIHOODS & GOVERNANCE FACTSHEET

### BASIC NECESSITIES SURVEY (BNS)

<sup>17</sup>To rank order households by wealth and to differentiate between households that own all goods and have access to all services on the BNS list (i.e. those that are at or above the poverty line), it is necessary to calculate the total value of all the goods they own. To do that, you must record the number of each asset owned by the household and the village price for all the goods in the list. Details on how to do this are contained in the original source document (Wilkie et al., 2015).

The poverty index can range from 0% when the family possesses none of the basic necessities to 100% when it has all of them.

If poverty scores are recalculated using all items (even those not considered basic necessities) and the poverty index recalculated using the maximum score from only the basic necessity items, then a score of greater than or equal to 100% denotes households living at or above the poverty line (i.e. those that have all or more than the basic necessities)<sup>17</sup>.

#### Differentiation

By collecting basic social information about households that you interview it is possible to investigate how your project has impacted on the poverty levels of different groups of stakeholders (based on e.g. female-headed households; ethnicity; age of household head; level of education; ownership of land, etc.).

TABLE 4. HOUSEHOLD BNS FORM - FOLLOW-UP SURVEY.

ASSET OR SERVICE	ITEM	HAVE NOW? YES = 1, NO = 0	ARE BASIC NECESSITIES? YES = 1, NO = 0	HAD IN PREVIOUS SURVEY? YES = 1, NO = 0	REASON GIVEN FOR CHANGE
Asset	1 hectare of land per person	0	1	1	
Asset	Electric light	1	1	1	
Asset	Bicycle	0	0	0	Frame broke, can't afford repairs
Asset	Concrete rice drying yard	1	0	0	
Asset	Wooden rice chest	1	1	1	
Service	3 meals a day	1	1	1	
Asset	Buffalo or cow	1	1	1	Project loan allowed purchase
Service	All children studying to level 2	0	1	1	
Asset	Well with well head	1	1	1	Constructed by local government - not project
Asset	Stone built house	0	0	0	
Asset	Thick cotton blanket	1	1	1	
Service	Doctor visiting house when sick	1	1	1	
Asset	Electric fan	1	0	0	Purchased with earnings from sale of milk
Service	A new set of clothes each year	1	1	1	



## LIVELIHOODS & GOVERNANCE FACTSHEET

## BASIC NECESSITIES SURVEY (BNS)

### Impact and attribution

One approach to assessing the impact of a project, and determine attribution, is to carry out the survey in “matched” control villages. For small and medium sized projects this is unlikely to be possible or cost effective. There are also likely to be problems in matching, as each community may have its own definition of its basic needs.

An alternative is to add columns to the BNS form. This would ask respondents if they think that any change in ownership of a basic necessity was due to the project, and if yes, why they think this (Table 4).

Alternatively, results could be summarised at community level, and any significant changes (e.g. in overall poverty levels, or in the number of households with access to particular assets and services in the list of basic necessities) can be discussed at community or focus group meetings, using PIA methods (see factsheet: Participatory Impact Assessment).

### Further resources

Richards M (2011). Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects: Part 2 – Social Impact Assessment Toolbox. Climate, Community & Biodiversity Alliance and Forest Trends, with Rainforest Alliance and Fauna & Flora International. Washington, DC ([http://www.forest-trends.org/documents/files/doc\\_2981.pdf](http://www.forest-trends.org/documents/files/doc_2981.pdf)).

Wilkie D, Wieland M and Detoef D (2015). A guide to the modified Basic Necessities Survey: Why and how to conduct BNS in conservation landscapes. WCS, New York, USA (<http://programs.wcs.org/carbon/Communities/WCS-Resources/Publications.aspx>).

Wildlife Conservation Society (2007). Household Surveys - a tool for conservation design, action and monitoring. Technical Manual 4. <http://global.wcs.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=5369&PortalId=0&DownloadMethod=attachment>.





## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY GOVERNANCE ASSESSMENT

### Factsheet: Participatory Governance Assessment

#### Introduction

Many factors can play a role in whether or not a group will be able to govern access and use of natural resources sustainably, and thus effectively. The Natural Resource Governance Tool, NRG<sup>18</sup> focuses on three key attributes of governance: authority, capacity, and power. If a governance group lacks authority to govern (i.e. people do not trust them to represent and protect their interests), it will fail to be effective over the long term. If a governance group has insufficient capacity to govern (i.e. to decide what to do and implement those decisions), then, even if it is perceived to be legitimate in the eyes of key resource users and rights holders, it is unlikely to be able to govern access to and use of natural resources. Lastly, even when a governance group is perceived as being the legitimate authority, and even when it has the capacity to plan and to act, if it does not have the political, economic, or policing power to exert its authority, it will be unable to govern effectively.

Participatory Governance Assessment (PGA) can be used to assess good governance practices in local organisations, community groups, etc. The method involves meeting with a group of selected participants who evaluate the extent to which the decision making and management practices in a community group conform to the attributes of good governance.

#### DEFINITIONS OF THE THREE KEY ATTRIBUTES OF EFFECTIVE GOVERNANCE

**Authority** is the perception by natural resource users and rights holders that a governance group genuinely represents their interests and has legal or customary jurisdiction to govern “their” natural resources.

**Capacity** refers to the skills, abilities, or other resources that allow a group to govern natural resources effectively.

**Power** is the ability to influence behaviours or decisions. Aspects of authority (such as legitimacy) and capacity (financial resources) can enhance a group’s power.

<sup>18</sup>Wilkie D, Deteouf D, Wieland M and Cowles P (2015). Guidelines for learning and applying the Natural Resource Governance Tool (NRGT) in landscapes and seascapes. Page 55. USAID, Washington, D.C. and WCS, Bronx NY. USA <https://programs.wcs.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=28641&PortalId=97&DownloadMethod=attachment>.

## Required steps

## Preparatory phase



## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY GOVERNANCE ASSESSMENT

- Step 1.** Initiate preliminary discussions with the local organisation to identify who will take part in the assessment. Ideally, at least 75% of the organisation's members should take part. If the organisation is very diverse in its membership then different categories of member should be proportionally represented. Make sure that women, marginalised groups and disadvantaged caste and ethnic groups take part.
- Step 2.** External stakeholders from government (e.g. District Forest Officers), NGOs, local representatives from political parties, and members of other community groups could also be invited.
- Step 3.** Agree a time and date for the assessment meeting and send out invitations.
- Step 4.** Prepare the necessary documentation/forms.

### THE IMPORTANCE OF LOCAL LANGUAGE

Governance involves some complex issues. The interviewer should speak in the local language to make it easier for local people to understand the questions and the concepts of governance. Before going into the field, the team needs to work together to translate the questionnaire into the local language and to ensure that all interviewers present the questions in the same way.





## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY GOVERNANCE ASSESSMENT

### The assessment phase

**Step 5.** At the start of the meeting, explain very carefully the purpose of the Participatory Governance Assessment, how the tool works and that it aims to help them improve their natural resources governance. Make sure that everyone understands.

**Step 6.** Using the list of questions, (Table 1) facilitate a discussion among the participants, leading to an evaluation of the group's governance performance.

**Step 7.** Make detailed notes of the discussion and responses, taking particular note of the views of women, the poor and marginalised, and people from disadvantaged caste and ethnic groups. Final scores should be agreed by consensus.

**Step 8.** It is extremely important that the scores are supported by a narrative analysis, to help explain the ratings for each governance attribute. This allows a more nuanced evaluation of opportunities for strengthening the ability of the group to govern the conservation and sustainable use of natural resources within the landscape or seascape, and lays the foundation for evaluating whether such actions resulted in strengthened governance.

**Step 9.** Once all the questions are completed, transfer the results to a spider-web diagram and display it for all to see. Spider (or radar) diagrams help people to visualise and interpret the results (See example below).

**Step 10.** If the PGA is carried out at the start of the project, this forms your baseline against which impacts on governance can be assessed. To assess the impact of your project on an organisation's governance, repeat the steps above at the end of the project, and compare the "before" and "after" spider diagrams. As governance gets better, the triangles/cobwebs get bigger. Discuss the reasons for any changes in order to identify those which can be attributed to your project.

**Step 11.** If you don't have a "before project" baseline then you could add extra columns to your Assessment Scoring Sheet. Ask respondents to recall the "before project" situation (and the reasons for any changes compared with the current ("after project") situation. Ask whether they can be attributed to the project. See example in Table 1.





## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY GOVERNANCE ASSESSMENT

TABLE 1: ASSESSMENT SCORING SHEET ADAPTED FOR BEFORE AND AFTER IMPACT ASSESSMENT.

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE (CURRENT - AFTER PROJECT)	COMMENTS/ EXPLANATION FOR CURRENT SCORE	ASSESSMENT SCORE BEFORE PROJECT	REASONS FOR CHANGE (BEFORE-AFTER PROJECT)
Legitimacy	The group has no legal or traditional authority	-2	When the project started the group was an informal assemblage of households using the forest. Their status was not formally recognised by government although they had legitimacy in the community. The project has supported their legal registration as a Forest User Group.	X	When the project started the group was an informal assemblage of households using the forest. Their status was not formally recognised by government although they had legitimacy in the community. The project has supported their legal registration as a Forest User Group.
	The process of legal or traditional recognition of the group is underway	-1			
	The group has a legal or traditional recognition but its role is not accepted by all stakeholders	0			
	The group has legal or traditional recognition only to determine what resource and land use is permitted	1			
	The group is officially recognised by a legal act of traditionally as having jurisdiction	2			
Responsibility					





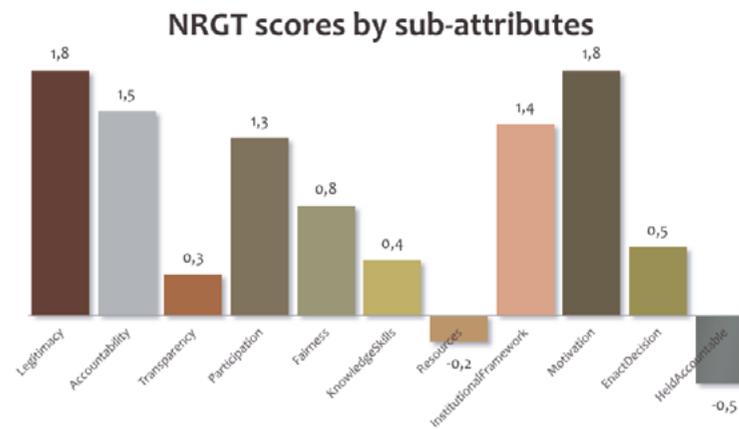
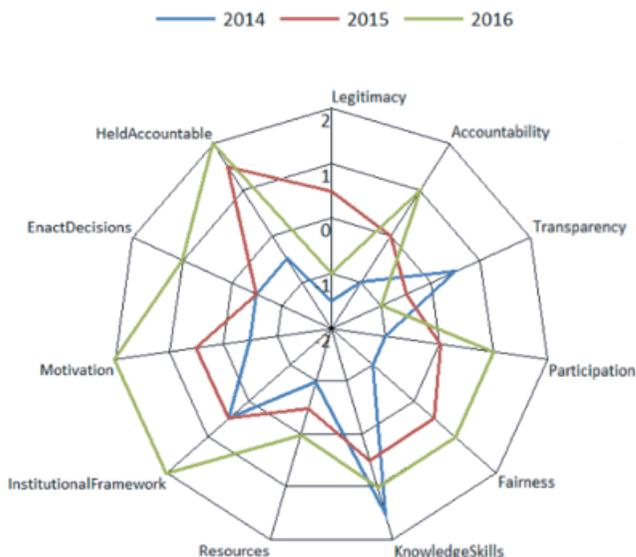
## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY GOVERNANCE ASSESSMENT

### PARTICIPATORY GOVERNANCE ASSESSMENT AS A PLANNING TOOL

Note that a PGA can also be used as a planning tool. Following an initial assessment, participants go on to identify what the group must do in order to improve performance against each indicator, and agreed actions are recorded in a Governance Improvement Plan.

#### Example



#### Acknowledgement

The method described here is a modified version that comprises elements of the Natural Resource Governance Tool (structure of attributes, questions, scoring sheet) and the PGA method developed by the WWF Hariyo Ban Program in Nepal<sup>19</sup> (which has a focus on assessing the governance of individual community-based organisations, rather than on governance within a landscape).

<sup>19</sup>WWF-Nepal (2013). Internal Governance Tool 3. Participatory Governance Assessment (PGA). WWF-Nepal, Hariyo Ban Program. [http://pdf.usaid.gov/pdf\\_docs/PA00K352.pdf](http://pdf.usaid.gov/pdf_docs/PA00K352.pdf).



## LIVELIHOODS & GOVERNANCE FACTSHEET

## PARTICIPATORY PHOTO EVALUATION

### STEPS 1 TO 3

#### Factsheet: Participatory photo evaluation

##### Introduction

In some cases, photographs can be used to find out how a project has affected livelihoods and well-being within a community.

This photographic method can be used as an impact assessment exercise in its own right or can be used to identify key well-being indicators for longer term monitoring and assessment.

##### Required steps

- Step 1.** Provide members of the community with one or more digital cameras, and leave the cameras with them for a week or more. Ask them to take photographs that illustrate how the project has affected them – positively or negatively.
- Step 2.** Collect the photos and show them to participants, asking them to discuss the pictures collectively.

- Step 3.** Compare images taken by different people – men, women, elders, youth, farmers, fishermen – to see how different groups of people have been affected, and what they consider to be key indicators of change brought about by the project. Comparison of the pictures taken will allow differences and similarities to be observed. The photographs also provide a useful starting point for discussion – what changes/impacts do the pictures symbolise, do others agree or disagree with the opinion of whoever took the picture, how widespread is the impact, what was the pathway to that particular impact etc? Also, do the impacts recorded by the community correspond to your expectations and assumptions according to your Theory of Change?

##### Further reading

<http://www.participatorymethods.org/method/participatory-visual-methods-case-study>.





## LIVELIHOODS & GOVERNANCE ANNEX

### QUESTIONS FOR ASSESSMENT MEETING

#### Annex: Questions for assessment meeting

##### 1. Legitimacy

- 1.1 What does the group do? What is its job?
- 1.2 Does it have the right to do this job? (De facto community authority or de jure governmental authority).
- 1.3 If yes, where did the right come from? (From the community, from the State, etc.).
- 1.4 If no, who does have the right to do this job? Who should be doing it?

##### 2. Accountability

- 2.1 Who does the group answer to?
- 2.2 If it makes a mistake, or does not do its job the way that it is supposed to, who can tell the group to change?

##### 3. Transparency

- 3.1 Does the group do a good job of letting people know what it does? (Does the group communicate what it is doing?) Do most people feel like they know what the group is doing?
- 3.2 If yes, how does it keep people informed of its activities? What does the group do to make sure that people know what they are doing?
- 3.3 If no, what are the weaknesses and what should the group be doing to make sure that people are well informed about what it is doing?

##### 4. Participation

- 4.1 Are people living around here able to tell the group when they have a suggestion about how it could do its job better, or more fairly? Can people complain if they feel that the group is not doing a good job and expect that someone will pay attention?
- 4.2 If yes, what does it do to make sure people have a chance to make suggestions and proposals or complain about problems?
- 4.3 If no, what could or should it do to make sure that people have a chance to make suggestions, proposals and complaints?

##### 5. Fairness

- 5.1 Does the group treat everyone in a fair way? Or does it seem to favour some people over others?
- 5.2 If fair, what is it about how the group works that makes it seem fair to you?
- 5.3 If not fair, what is not fair about how the group works?
- 5.4 What could it do to be more fair in the way it does its job?

##### 6. Knowledge/skills

- 6.1 Do people who work for the group know how to do their jobs well? Do they have the technical knowledge to manage resource use or monitor natural resources, for example? Do they know the policies? Examples?





## LIVELIHOODS & GOVERNANCE ANNEX

### QUESTIONS FOR ASSESSMENT MEETING

#### 7. Resources

- 7.1 Does the group have the equipment it needs to do a good job? Examples?
- 7.2 Does the group have the personnel it needs to do its job? Examples?
- 7.3 Does the group have the finances it needs to do its job? Examples?

#### 8. Institutional framework

- 8.1 Are there laws or rules that are written down so that the people who work for the group and local people all know what it is supposed to be doing and why?

#### 9. Motivation

- 9.1 Do you think the group tries to do a good job? What makes you say that?

#### 10. Enacting decisions

- 10.1 When the group makes a decision to adopt a rule, do authorities (for example chiefs, mayors, governors, civil servants) respect the decision? Or do they just do what they want to anyway? Why do you think that is?
- 10.2 Can the group protect, more or less, resources from illegal use (for example from military poachers, neighbouring jurisdictions or the population themselves)? Explain.

#### 11. Being held accountable

- 11.1 If people whose resource use is managed think that the group is doing a bad job, is there anything the people themselves can do to make it do better?

- 11.2 If yes, what can they do?

- 11.3 If no, what should people be able to do if the group is doing a bad job?

#### 12. Diversity

- 12.1 Are women represented equally in the group?

- 12.2 If yes, are their ideas listened to and adopted by the group?

- 12.3 If no, why is this?

- 12.4 Are minority peoples represented equally in the group?

- 12.5 If yes, are their ideas listened to and adopted by the group?

- 12.6 If no, why is this?

#### Resources

Wilkie D, Detoef D, Wieland M and Cowles P (2015). Guidelines for learning and applying the Natural Resource Governance Tool (NRGT) in Landscapes and Seascapes. Page 55. USAID, Washington, D.C. and WCS, Bronx NY. USA <https://programs.wcs.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=28641&PortalId=97&DownloadMethod=attachment> .

WWF-Nepal (2013). Internal Governance Tool 3. Participatory Governance Assessment (PGA). WWF-Nepal, Hariyo Ban Program. [http://pdf.usaid.gov/pdf\\_docs/PA00K352.pdf](http://pdf.usaid.gov/pdf_docs/PA00K352.pdf) .



**Annex: Governance Assessment scoring sheet**

Tool (NRGT) in Landscapes and Seascapes. Page 55. USAID, Washington, D.C. and WCS, Bronx NY. USA <https://programs.wcs.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=28641&PortalId=97&DownloadMethod=attachment>.

Reproduced with permission from:

Wilkie D, Detoef D, Wieland M and Cowles P (2015). Guidelines for learning and applying the Natural Resource Governance



## LIVELIHOODS & GOVERNANCE ANNEX

## GOVERNANCE ASSESSMENT SCORING SHEET

Developed by:  
African Wildlife Foundation  
World Wildlife Fund Wildlife  
Conservation Society  
Wildlife Conservation Society

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE	COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
<b>AUTHORITY</b>				
<b>Legitimacy</b>	The group has no legal or traditional authority to define rules or the ability to follow through with implementation of plans.	-2		
	The process of legal or traditional recognition of the group to define the rules and implement procedures is underway but not yet completed.	-1		
	The group has no legal or official recognition to participate in the process of creating rules and monitoring procedures to ensure enforcement, but its role is not accepted by all local stakeholders (if customary) or there are disagreements over attribution (in the case of the government).	0		
	The group has legal or traditional recognition only to determine what resource and land use is permitted, to define who has access to certain resources, or can implement certain land use practices. Its legitimacy in relation to enforcement, however, is not recognized.	+1		
	The group is officially recognised by a legal act or traditionally as having jurisdiction to determine what resources or land use is permitted, to determine resource access. It can also decide what penalties will be imposed for violation of these rules.	+2		





## LIVELIHOODS & GOVERNANCE ANNEX

## GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE		COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
Responsibility	The group has no set specifications or clearly defined structure and no action is taken to guide the management of natural resources on behalf of the communities it is supposed to represent.	-2			
	The group has no specifications, no structure and takes no active responsibility in decision-making (they are just there in name and do not operate in practice.).	-1			
	The group has a clearly defined set of specifications and a clearly defined structure, but its members do not take any initiative in decision-making related to the management.	0			
	The group has a set of specifications and a clearly defined structure and is actively involved in the management, and decision-making, but ignores the interest of the communities they represent.	+1			
	The group has a set of specifications and a clearly defined structure, and is actively involved in management decisions while taking into account the interested of the communities they represent.	+2			
Participation	Indigenous and traditional peoples have no impact on the process of developing policies that limit access and use of resources, or in deciding penalties for those who do fail to meet the standards sets.	-2			
	Indigenous and traditional people have little impact on decisions regarding the management of the area, and play no role in management.	-1			
	The participation of indigenous and traditional people in decision-making and management of the area is random and on an ad hoc basis.	0			
	Indigenous and traditional people directly contribute to some important decisions related to management but their involvement should be improved.	+1			
	Indigenous and traditional people directly participate in all relevant decisions concerning the management and suggestions, proposals and complaints are considered (continuous and constant interaction).	+2			





## LIVELIHOODS & GOVERNANCE ANNEX

### GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE		COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
Transparency	People have no information on the group's activities and decisions. Authorities are using the system for their own interest.	-2			
	People receive information that is filtered, from a small number of sources, and is of little use to different member of the governance group.	-1			
	People receive scattered, irregular, information from the governance group.	0			
	The group shares decisions and informs the population about their activities through regular forums without giving them the opportunity to access all the information. There is less possibility for the authorities to abuse the system for their own interests.	+1			
	The meetings of the governance group are open to the press and the public, budgets can be found easily, and the laws and decisions made are open for discussion.	+2			
Equity	Rules and enforcement standards set by the group do not provide fair management standards in defining rules, their application, and the sharing of benefits arising from the management of natural resources	-2			
	The group blatantly discriminates against stakeholders in defining rules, their application, and the sharing of benefits arising from the management of natural resources	-1			
	Standards of fairness are provided in the rules put in place, but are never enforced or applied to the "client's head".	0			
	Standards of fairness are provided in the rules put in place but are only partially implemented.	+1			
	The rules governing access and use of natural resources are fair in terms of who benefits and who bears the costs and are applied equally to all individuals and groups. ie the costs and benefits are evenly distributed, equal rights under the law and equal application of the law.	+2			





## LIVELIHOODS & GOVERNANCE ANNEX

## GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE	COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
<b>CAPACITY</b>				
<b>Knowledge and Skills</b>	The group has no competence and knowledge of a) factors biological, economic, historical, socio-political and know what could jeopardize long-term viability of the use of natural resources; b) policies and practices that would be needed to remedy the situation so that the resources of value are kept and used in a sustainable manner; and c) means of a group to monitor the effectiveness of the implementation of their conservation plans.	-2		
	The group has low skills and knowledge of a) factors- biological, economic, historical, sociopolitical and know what could jeopardize the long-term viability of the use of natural resources; b) policies and practices that would be needed to remedy the situation so that the resources of value are kept and used in a sustainable manner; and c) a means of monitoring the effectiveness of the implementation of their conservation plans.	-1		
	The group has good skills and knowledge of a) factors- biological, economic, historical, sociopolitical and know what could jeopardize the long-term viability of the use of the natural resources, but not b) policies and practices that would be needed to remedy the situation so that the resources of value are kept and used in a sustainable manner.	0		
	The group has good skills and knowledge of a) factors biological, economic, historical, sociopolitical and know what could jeopardize the long-term viability of the use of natural resources and b) policies and practices that would be needed to remedy the situation so that the resources of value are kept and used in a sustainable manner, but not c) means a group can monitor the effectiveness of the implementation of their conservation plans.	+1		
	The group has good skills and knowledge of a) factors-biological, economic, historical, sociopolitical and what could jeopardize the long-term viability of the use of natural resources, b) policies and practices that would be needed to remedy the situation so that resources of value are kept so that the resources of value are kept and used and used in a sustainable manner; and c) the means to monitor the effectiveness of the implementation of their conservation plans.	+2		





## LIVELIHOODS & GOVERNANCE ANNEX

## GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE	COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
Resources	There is no material or financial means, staff numbers are not sufficient	-2		
	The budget, material and the staff available are inadequate to meet the needs of the group.	-1		
	The budget and the material are inappropriate but the staff is adequate to respond to the basic needs of the group's mission.	0		
	The budget, the material, and the staff available are acceptable to meet the basic needs of the group's mission, but it is not able to meet all the basic needed.	+1		
	The budget, material and personnel available is sufficient to cover all the needs of the group and to measure the plans that they put into place and to evaluate and communicate the results and the impacts of their efforts.	+2		
Regulatory Framework	There are no laws or traditional customs that define the rules of management	-2		
	There is a profusion of laws with often-contradictory rules for management	-1		
	There are national laws and regulations or customary principles, which are not adapted to the context managed by the governance group resources	0		
	There are specific rules and management standards, which are not used to drive the management by governance group.	+1		
	The actions of the governance group are based on a set of rules and regulations that explicitly engage the informal or customary law on who has access to what resources and to what these resources are and how these resources can be used, though their actions are unlikely to be effective in the long term.	+2		





## LIVELIHOODS & GOVERNANCE ANNEX

## GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE	COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
<b>Motivation</b>	Members of the group have no initiative and spontaneity. The group exists in name only and even when support is given the expected outcome is not obtained.	-2		
	Members of the group perform their duties sporadically because they do not receive financial, material and technical assistance. Once they have this support in the future, they will be able to act more effectively.	-1		
	More than 20% of group members are willing to give their all in the work duties without external input (material, financial, technical)	0		
	More than half of the group members have taken initiatives to give body and soul and engage personally and unwavering commit to do whatever is necessary to accomplish their mission with or without external input (material, financial or other).	+1		
	With or without external input (material, financial, technical), the group and its members give body and soul and engage personally with unwavering commitment to do whatever is necessary to accomplish their mission.	+2		
<b>POWER</b>				
<b>Implementa- tion of group decisions</b>	The group cannot make and enforce decisions.	-2		
	The group takes management decisions theoretically but never implements them.	-1		
	The group has the power to make decision and implement them on a portion of the species that exist on the resources it governs.	0		
	The group makes management decisions and implements and enforces them in harmony with the users and rights holders.	+1		
	The group makes management decisions, has the authority and autonomy to enforce and apply all the rules in harmony with users and right holders.	+2		





## LIVELIHOODS & GOVERNANCE ANNEX

### GOVERNANCE ASSESSMENT SCORING SHEET

ATTRIBUTES	CRITERIA	ASSESSMENT SCORE	COMMENTS/ EXPLANATIONS	RECOMMENDATIONS
Accountability	Users and rights holders of the resources under control of the governance group do not have access to management have no opportunity to access management information, make requests or demand accountability.	-2		
	A platform for public access to information and formulation of questions to governance groups was planned but was never made operational.	-1		
	A public platform for information and formulation of questions to the governance group exists, but users and resource rights holders do not have the knowledge, time or financial resources to exploit and vice versa.	0		
	A public platform for information and formulation of questions to the governance groups exists, users and rights holders have the knowledge, time and financial resources to operate, but are not informed of the opportunity.	+1		
	There is a statutory or customary framework in place to facilitate public access to information about the group's work, to make requests and to get answers in response.	+2		



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## Policy factsheets and annexes



## POLICY FACTSHEETS AND ANNEXES

[Media tracking](#)

[Media scorecards](#)

[Observation checklist for documenting meetings](#)

[Policymaker ratings](#)

[Bellwether methodology](#)

[Civil society tracking tool](#)



## POLICY FACTSHEET

### MEDIA TRACKING

#### STEPS 1 TO 5

#### Factsheet: Media tracking

##### Summary

Used to evaluate media strategies that often are part of advocacy efforts, this method examines whether media coverage of an issue changes over time. Basic media tracking reveals whether advocacy issues or messages are mentioned more often but says little else about their coverage. This method could also be used where media strategies are not expressly employed – to evaluate/gauge the level of media and public awareness and attention raised for the policy area/campaign. This need not be done as an isolated event or evaluation, but could provide a system/methodology for ongoing monitoring of media coverage.

#### Required steps

- Step 1.** Identify the types of sources to track (print, broadcast or electronic).
- Step 2.** Choose the specific media outlets to track.
- Step 3.** Select the relevant time periods to search.
- Step 4.** Select the specific search terms (the advocacy messages). All of these must be carefully chosen and tested. Search terms, for example, must be broad enough to uncover relevant articles but specific enough to have value and be manageable.
- Step 5.** Count the number of times the search terms or phrases appear.

#### Acknowledgement

Based on guidance in Annie E Casey Handbook of data collection tools (pages 21-23).

[http://dmeforpeace.org/sites/default/files/AEF\\_Data%20Collection%20Tools.pdf](http://dmeforpeace.org/sites/default/files/AEF_Data%20Collection%20Tools.pdf)





## POLICY FACTSHEET

## MEDIA SCORECARDS

### STEPS 1 & 2

#### Factsheet: Media scorecards

##### Summary

Media scorecards are a method for comparing the media coverage generated by different issues or organisations over time. Combined with traditional media tracking that searches media outlets for key words or phrases, media scorecards help to assess very quickly the extent to which particular issues or organisations are referenced in specific outlets, compared with the extent to which other issues or organisations (allies or opponents) are also referenced in those outlets. The “scorecard” in the title refers to these comparisons.

##### Introduction

Many tools and services are available to access news content rapidly via the internet. They range from free to expensive, and from quick to time-intensive. Some evaluators use a paid subscription service offered by the online news database LexisNexis ([www.lexisnexis.com/en-us/gateway.page](http://www.lexisnexis.com/en-us/gateway.page)), which allows easy searching of hundreds of local, regional, national and international media sources. Another option is to use free search tools such as Google News Search ([news.google.com](http://news.google.com)), which makes it possible to search for specific terms from a specific online news source. Searches can be set up for multiple sources and used to create ‘Google Alerts’, which automatically email updated results on a pre-set basis. Although online media databases and search engines return results very quickly, they are not instantaneous. Depending on the source, there may be slight delays; it may take a day or two for news databases to upload new articles from certain sources. Really Simple Syndication (RSS) readers do not receive instant updates, and even Google can take a few hours to index new web pages. Delays, however, are usually not significant

in terms of the requirements and timeframes for overall project monitoring and evaluation.

##### Required steps

- Step 1.** Identify the types of sources to track (web-pages, broadcasts), the specific media outlets to track, the relevant time periods to search and the specific search terms to use.
- Step 2.** Identify the issues or organisations to track as a comparison. The sources, outlets and timeframe remain the same. Patterns and trends for the issue or organisation of interest are then examined alongside the comparison, to identify for example who or what is generating more coverage, who is generating it first and where the coverage is located.

##### Examples include:

- total number of stories;
- total area or time allotted to each story;
- total number of news stories above average length;
- total stories with pictures and graphics;
- total stories on the front page or in the local TV news programme.

##### Acknowledgements

Based on guidance in UNICEF Monitoring and Evaluating Advocacy Toolkit (page 26) [http://www.unicef.org/evaluation/files/Advocacy\\_Toolkit\\_Companion.pdf](http://www.unicef.org/evaluation/files/Advocacy_Toolkit_Companion.pdf).



## Factsheet: Observation checklist for documenting meetings

### Summary

This method can be used to gauge the degree to which community members, key individuals or groups change their beliefs or priorities about a particular issue. A simple observation checklist can help to capture how often a particular issue is on a meeting agenda, whether the issue was discussed, what the main content or emphasis was, the length or depth of the discussion and perceptions of seriousness. See the example of a meeting observation checklist below. It could also be used to record whether or not a particular policy issue, organisations/network or campaign was referenced or discussed. Checklists should then be entered into an observation database, perhaps shared between network partners, to track changes and influence over time.

### Acknowledgement

Based on guidance in Annie E Casey Handbook of data collection tools (pages 21-23). [http://dmeforpeace.org/sites/default/files/AEF\\_Data%20Collection%20Tools.pdf](http://dmeforpeace.org/sites/default/files/AEF_Data%20Collection%20Tools.pdf)



## POLICY FACTSHEET

## OBSERVATION CHECKLIST FOR DOCUMENTING MEETINGS

### Observation Checklist

#### For meetings

Date: \_\_\_\_\_ Length of meeting: \_\_\_\_\_

Setting: \_\_\_\_\_ # of male attendees: \_\_\_\_\_ # of female attendees: \_\_\_\_\_

1. What were the main issues discussed during this meeting (e.g. resource use, species conservation, climate change, etc.)?  
\_\_\_\_\_

2. Was conservation on the agenda? YES NO

3. Was conservation discussed? YES NO

*(If answered "yes" for question 3, please continue; if answered "no" for question 3, please skip to question 8.)*

4. What was the main content of the policy discussion?  
\_\_\_\_\_

5. Was agreement reached in this discussion? YES NO  
What was the length of the discussion? \_\_\_\_\_

6. Would you say that the issue(s) discussed were taken seriously by the attendees?  
YES NO

Please explain: \_\_\_\_\_

7. Was any action planned related to conservation? YES NO

Please explain:  
\_\_\_\_\_

8. Additional notes or comments:  
\_\_\_\_\_



## Factsheet: Policymaker ratings

### Summary

This is a method for gauging political will or support for a particular advocacy issue or proposal amongst a defined group of policymakers (e.g. legislature, council). The approach was developed in response to the perceived inadequacy of indicators commonly used to gauge policymaker support on issues (e.g. number of new policies introduced on the issue; number of votes for or against a specific policy). This method takes a different approach to measuring such support, and capitalises on advocates' insider knowledge about individual policymakers' stances on policy issues. It does not create extra work for advocates, but instead usefully transfers what they already know through their regular intelligence-gathering and outreach. This method thus contains an element of subjectivity, as it relies on individual advocate knowledge, experience and judgement (although the "confidence ratings" do go some way to ameliorating this); hence why it is advised that a minimum of three project team members/advocates should make an input to the rating process.



## POLICY FACTSHEET

## POLICYMAKER RATINGS

### STEPS 1, 2 & 3

### Required steps

- Step 1. Identify the issue.**
- Step 2. Select specific policymakers/policymaking body for analysis.**  
For example parliament, council, organisation, etc.
- Step 3. Familiarise yourself with the scoring system and criteria.**  
Policymakers are rated according to three criteria.

**Policymaker level of support** – Individual policymaker support for an issue based on his or her public behaviours or actions in relation to the issue.

**Policymaker level of influence** – Policymaker influence on the policy issue of interest (similar to the idea of a power analysis). Ratings are based on criteria that research shows relate to policymaker influence (see table below).

**Rater level of confidence** – Confidence in the accuracy of ratings on the first two scales.





## POLICY FACTSHEET

## POLICYMAKER RATINGS

### POLICYMAKER RATINGS SCORING CRITERIA

SCALE	RATING	DEFINITION
<b>Support</b>	1 Not at all supportive	No evidence that this person has spoken or taken any action in support of the policy issue (includes opposition)
	2 Somewhat supportive	Has indicated being favourably disposed to the policy issue (e.g. expresses support for the issue or mentions it in one-to-one or small group conversations)
	3 Supportive	Occasionally takes action either publicly or behind the scenes beyond voting in support of the policy issue (e.g. speaks out at public hearings, gets quoted in the media, includes it in speeches, assigns bills to a power legislator, encourages colleagues to support policies, plays a role in budget negotiations)
	4 Extremely supportive	Has a well-known reputation for being a champion of the policy issue and regularly takes leadership in advancing it (e.g. makes it a key part of their platform or agenda)
<b>Influence</b> Criteria: 1. Majority party member 2. Relevant content expertise 3. Seniority/experience (record of public service) 4. Reputation/respect (e.g. has been able to exercise some power/ leadership in the legislature) 5. Key committee member 6. Formal leadership position (chairs a key committee or is a Senate or Assembly leader)	1 Not very influential	Meets none or only one criterion
	2 Somewhat influential	Meets at least two criteria
	3 Influential	Meets three or four criteria and/or is on a key committee
	4 Extremely influential	Meets five or six criteria and/or holds a formal leadership position in the legislature or and/or chairs a key committee
<b>Confidence</b>	1 Not very confident	Ratings are a guess, based on third-hand, unverifiable or unreliable information about the policymaker and their related interest or lack of interest (e.g. the policymaker or their staff saying they "love the issue" in a small meeting where they feel pressure to speak positively)
	2 Somewhat confident	Ratings are a fairly well informed guess (e.g. advocates have picked up consistent information from more than one source, but sources may not be 100% verifiable or reliable, or the information collected is somewhat vague)
	3 Confident	Ratings are based on advocates' direct contact with the individual or information from a trusted and reliable source





## POLICY FACTSHEET

### POLICYMAKER RATINGS

#### STEPS 4, 5 & 6

**Step 4.** Rate targeted policymakers on the three scales that assess support, influence and confidence using the scorecard and criteria above. Brief notes as to the reason/evidence behind the ratings would be useful.

At least three project team members (the more the better, to increase robustness of the assessment) should participate in the rating process. Advocates either undertake the ratings as a group (arriving at a consensus group rating), or do it independently and then average their ratings.

**Step 5.** Discuss and provide some justification for the reasons behind the scores given in each completed scorecard. It would be useful to note briefly the main points of evidence used to inform this rating.

**Step 6.** Once ratings are complete, composite ratings are calculated and aggregated across policymakers. Data, such as individual policymakers' party affiliation, district representation or community membership, can be added to enable different ways of looking at the analysis. This method is repeatable over time to determine whether and how indicators shift.

#### POLICYMAKER RATINGS SCORECARD.

##### POLICYMAKER RATINGS SCORECARD

**Policymaker/policymaking body:**

Issue:

Scale	Rating	Definition
Support		
Influence		
Confidence		
<b>Total</b>		

**Notes/justification**

#### Acknowledgement:

Based on guidance in Innovation Network Unique Methods in Advocacy Evaluation Brief. Examples on pages 5-6. [http://www.innonet.org/resources/files/Unique\\_Methods\\_Brief.pdf](http://www.innonet.org/resources/files/Unique_Methods_Brief.pdf).



**Factsheet: Bellwether methodology****POLICY  
FACTSHEET****BELLWEATHER  
METHODOLOGY****STEPS 1 & 2****Introduction**

This method was developed specifically for the evaluation of policy advocacy efforts. It determines where a policy issue or proposal is positioned on the policy agenda, how decision makers and other influential actors are thinking and talking about it, and how likely policymakers are to act on it.

The method involves structured interviews with “bellwethers”: influential people in the public and private sectors whose positions require that they be politically informed and that they track a broad range of policy issues. Bellwethers are knowledgeable and innovative thought leaders, and political insiders whose opinions about policy issues carry substantial weight and predictive value.

The bellwether methodology returns data that indicate how effective advocates have been in communicating their messages, and whether they have been successful in moving their issue onto the policy agenda or in increasing its importance. Bellwether data also informs advocates about specific gaps in bellwether knowledge.

**Required steps**

- Step 1. Select the types of bellwethers to interview. Categories might include: policymakers; media; donors; UN agencies; other NGOs/CBOs; researchers; and business and trade experts. Categories should represent the types of individuals whose opinions are important or influential on the policy issue of interest.**
- Step 2. Selecting the bellwether sample requires the development of criteria for selecting individual bellwethers.**

At least half of the sample should include bellwethers who do not have a specific connection to the policy issue being explored. This increases the probability that issue awareness or knowledge detected during interviews can be linked to advocacy efforts, rather than being the result of personal experiences or other extraneous variables. Other selection criteria might include gender, cultural and geographical diversity. Once selection criteria are developed, subject matter experts nominate bellwethers who fit the criteria.





## POLICY FACTSHEET

## BELLWEATHER METHODOLOGY

### STEPS 3 & 4

**Step 3.** Set up the interviews. Bellwethers must be unaware before the interview begins that the interview will focus on the specific policy issue. They are informed about what the interview will generally cover but they do not receive specific details. This helps to ensure that bellwethers' responses are authentic and unprompted.

**Step 4.** Conduct interviews with questions that determine what bellwethers know and think about the policy of interest. The interview might start by asking bellwethers what issues they think are at the top of the policy agenda.

Their responses (which will be unprompted because they do not know beforehand which specific policy issue you are exploring) indicate whether the advocacy issue of interest shows up in that agenda, and if so where, and along with what other issues. Later questions can get more specific and ask about bellwethers' familiarity with the issue of interest and probe what they know, allowing later content analysis to determine whether advocates' messages surface in bellwether discourse about the issue. Bellwethers might also be asked to predict whether they think the issue will advance in the near future or in the longer term.

#### Acknowledgement:

Based on guidance in UNICEF Monitoring and Evaluating Advocacy Toolkit (page 26). [http://www.unicef.org/evaluation/files/Advocacy\\_Toolkit\\_Companion.pdf](http://www.unicef.org/evaluation/files/Advocacy_Toolkit_Companion.pdf).



## Annex: Civil society tracking tool

### Goal

Local and national civil society groups dedicated to global conservation priorities collectively possess sufficient organisational and technical capacity to be effective advocates for, and agents of, conservation and sustainable development for at least the next 10 years.



## POLICY ANNEX

## CIVIL SOCIETY TRACKING TOOL

### Criteria

- i. **Human resources.** Local and national civil society groups collectively possess technical competencies of critical importance to conservation, on topics that include protected areas management; conservation monitoring and analysis; sustainable financing; policy analysis and influence; environmental education and media outreach; and threat mitigation and adaptation.
- ii. **Management systems and strategic planning.** Local and national civil society groups collectively possess sufficient institutional and operational capacity and structures to raise funds for conservation and to ensure the efficient management of conservation projects and strategies.
- iii. **Partnerships.** Effective mechanisms (e.g. discussion forums, round tables, mutual support networks, alliances, etc.) exist for conservation-focused civil society groups to work in partnership with one another and through networks with local communities,

governments, the private sector, donors and other important stakeholders, in pursuit of common conservation and development objectives.

- iv. **Financial resources.** Local civil society organisations have access to long-term funding sources to maintain the conservation results achieved via funding grants and/or other initiatives, through access to new donor funds, conservation enterprises, memberships, endowments, and/or other funding mechanisms.
- v. **Transboundary cooperation.** In multi-country situations, mechanisms exist for collaboration across political boundaries at site, corridor and/or national scales.





## POLICY ANNEX

### CIVIL SOCIETY TRACKING TOOL

#### Indicators

- Criterion (i) will be considered to have been **partially met** if knowledge and capacity within local civil society organisations is rated as satisfactory or above in at least 50% of the technical competencies considered as priorities.
- Criterion (i) will be considered to have been **fully met** if knowledge and capacity within local civil society organisations is rated as satisfactory or above in at least 90% of the technical competencies considered as priorities.
- Criterion (ii) will be considered to have been **partially met** if at least 50% of the priority areas concerned have at least one local, national, or international civil society organisation dedicated to their conservation with at least satisfactory institutional and operational capacity.
- Criterion (ii) will be considered to have been **fully met** if at least 90% of the priority areas concerned have at least one local, national, or international civil society organisation dedicated to their conservation with at least satisfactory institutional and operational capacity.
- Criterion (iii) will be considered to have been **partially met** if fully institutionalised and sustainable partnerships are dedicated to coordinating conservation and development actions among key stakeholder groups in at least 50% of the priority areas concerned.
- Criterion (iii) will be considered to have been **fully met** if fully institutionalised and sustainable partnerships are dedicated to coordinating conservation and development actions among key stakeholder groups in at least 90% of the priority areas concerned.
- Criterion (iv) will be considered to have been **partially met** if 50% of the priority areas concerned have access to stable and diversified long-term funding sources for conservation through support to local civil society organisations.
- Criterion (iv) will be considered to have been **fully met** if 90% of the priority areas concerned have access to stable and diversified long-term funding sources for conservation through support to local civil society organisations.
- Criterion (v) will be considered to have been **partially met** if effective mechanisms for transboundary collaboration exist in at least 50% of the countries concerned.
- Criterion (v) will be considered to have been **fully met** if effective mechanisms for transboundary collaboration exist in at least 90% of the countries concerned.

#### Acknowledgement:

Based on CEPF “tracking tool” for use in systematically monitoring the impact of CEPF on civil society development. Available from: [http://www.cepf.net/resources/publications/Pages/monitoring\\_and\\_evaluation.aspx](http://www.cepf.net/resources/publications/Pages/monitoring_and_evaluation.aspx)





## POLICY ANNEX

## CIVIL SOCIETY TRACKING TOOL

### CIVIL SOCIETY TRACKING TOOL WORKSHEET

CRITERION	BASELINE (YEAR)	MID TERM (YEAR)	FINAL (YEAR)	COMMENTS
i. Human resources. Local and national civil society groups collectively possess technical competencies of critical importance to conservation, on topics that include protected areas management; conservation monitoring and analysis; sustainable financing; policy analysis and influence; environmental education and media outreach; and threat mitigation and adaptation..	Not met	Not met	Not met	
	Partially met	Partially met	Partially met	
	Fully met	Fully met	Fully met	
ii. Management systems and strategic planning. Local and national civil society groups collectively possess sufficient institutional and operational capacity and structures to raise funds for conservation and to ensure the efficient management of conservation projects and strategies.	Not met	Not met	Not met	
	Partially met	Partially met	Partially met	
	Fully met	Fully met	Fully met	
iii. Partnerships. Effective mechanisms exist for conservation-focused civil society groups to work in partnership with one another, and through networks with local communities, governments, the private sector, donors, and other important stakeholders, in pursuit of common objectives.	Not met	Not met	Not met	
	Partially met	Partially met	Partially met	
	Fully met	Fully met	Fully met	
iv. Financial resources. Local civil society organisations have access to long-term funding sources to maintain the conservation results achieved via funding grants and/or other initiatives, through access to new donor funds, conservation enterprises, memberships, endowments, and/or other funding mechanisms.	Not met	Not met	Not met	
	Partially met	Partially met	Partially met	
	Fully met	Fully met	Fully met	
v. Transboundary cooperation. In multi-country situations, mechanisms exist for collaboration across political boundaries at site, corridor and/or national scales.	Not met	Not met	Not met	
	Partially met	Partially met	Partially met	
	Fully met	Fully met	Fully met	





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**Method factsheets****SPECIES AND  
HABITAT  
MANAGEMENT  
FACTSHEETS AND  
ANNEXES**

[Scorecard for evaluating changes in knowledge gaps](#)

[Scorecard for evaluating action plan completion](#)

[Scorecard for evaluating action plan adequacy](#)

[Threat reduction scoring](#)

[Scorecard for evaluating changes in species' status](#)

[Scorecard for evaluating changes in habitat status](#)

[Using field assessment methods for evaluating changes in species' status](#)

[Using remote assessment methods evaluating changes in habitat status](#)

[Using field assessment methods for evaluating changes in habitat status](#)

**Annexes**

[Field methods for species monitoring](#)

[Sampling approaches for monitoring different species to assess their status](#)

[Analytical issues when estimating abundance, distribution, survival and reproduction](#)

[Field methods for habitat monitoring](#)

[Sampling approaches for monitoring habitat status](#)



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING KNOWLEDGE GAPS

#### STEP 1

#### Factsheet: Scorecard for evaluating knowledge gaps

##### Summary

This factsheet describes a simple method for assessing the outcomes and impacts of project actions on knowledge gaps. This involves first identifying the knowledge gaps relating to different aspects of species/habitat status that the project actions aim to address, and then scoring the level of knowledge. The change in scores during the course of a project can be compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions.

##### Required steps

##### Step 1. Identify knowledge gaps.

The main components of knowledge that project actions may address can be summarised as follows:

- **Distribution** (including locations of populations, distribution limits, altitudinal preferences, occupancy patterns, habitat extent). This is fundamental to identifying the locations where conservation action may benefit particular species or habitats, as well as helping to prioritise where conservation action may best be targeted.
- **Population size** (including global/national/local population size, relative abundance, population density and territory/home range size). Variation in the

abundance of populations at particular sites can be used to identify the most important locations for particular species or habitats, and to help prioritise which actions to implement at which locations.

- **Trends** (trends over time in population size/distribution/habitat extent, etc.). Trends in the distribution or abundance of species, or in the extent of particular habitat-types, provides important context to inform conservation action, for example by prioritising locations where populations are suffering the greatest rate of decline, or by identifying core areas of stability for protection.
- **Threats** (types of threats and their scope/area, severity/intensity, timing/urgency, and hence impact/magnitude). Identifying the cause of species population or range decline is a key precursor to effective conservation action.
- **Ecology** (habitat requirements, resource needs e.g. diet, nest-sites, etc., predators, social structure, reproductive behaviour, movement patterns, phenology). A good understanding of the ecology of a species can inform conservation action, by identifying limiting factors and the ways in which management may be used to counter the impact of constraints. An assessment of habitat requirements may be used to test whether changes in habitat availability or quality may be limiting. Ecological understanding is particularly important where species are being actively managed, or to inform the creation of new habitats or reintroductions of species.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING KNOWLEDGE GAPS

#### STEP 2

- **Extinction risk** (typically assessed using the IUCN Red List categories and criteria (IUCN 2014), although other systems are also used in different national contexts). Quantifying extinction risk is an important component of conservation prioritisation and a means of tracking conservation success. It involves collating information on distribution, population size, trends and ecology (life-history parameters) in particular.
- **Solutions** (effectiveness of conservation action, management, etc.). The most successful conservation actions are based on interventions which are known to work. This often requires research to test effectiveness, for example through experimental or monitoring approaches.

#### Step 2. Score the degree to which project actions improved the knowledge base.

Once knowledge gaps have been identified, each should be scored using Table 1 and following the scoring criteria in Table 2. Scores should reflect:

- the knowledge base at the beginning of the project (scored retrospectively if not assessed at the beginning);
- the knowledge base at the end of the project; and
- an estimate of what the knowledge base would have been if the project had not taken place (the counterfactual scenario).

Ideally the scoring should be carried out both by the project team and by certain key informants who have relevant knowledge of the project's conservation target (e.g. experts on the species/site being targeted). See the factsheet [Key informant interviews](#) for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible, and justify the scores selected.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING KNOWLEDGE GAPS

**TABLE 1. KNOWLEDGE GAPS SCORECARD.**

ASPECT OF KNOWLEDGE	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATE WITHOUT THE PROJECT
Distribution			
Abundance			
Trend			
Threats			
Actions/interventions			
Extinction risk			
<b>Justification:</b>			

Table 1. Knowledge gaps scorecard. The criteria for scoring each knowledge aspect are given in Table 2.

The difference between (a) the change over time in the actual project scores and (b) the hypothetical scores demonstrates the outcome/impact of the project's actions. The estimate without the project is important to account for the fact that knowledge may have improved due to external factors (e.g. work by other individuals/organisations that may have increased the knowledge base for the species or ecosystem), rather than through the project. Note that most projects do not address all of the knowledge gaps outlined in the table, and many only address one or two (see examples below).



TABLE 2. SCORES FOR THE LEVEL OF KNOWLEDGE ABOUT DIFFERENT ASPECTS OF INFORMATION ABOUT SPECIES/HABITATS.

ASPECT OF KNOWLEDGE	SCORE
<b>Distribution</b>	<p>1 – species/habitat distribution is unknown or based upon a small number of historical (&gt;25 years old) records.</p> <p>2 – some recent (&lt;25 years old) location records or confirmed absences, or a large amount of historical data.</p> <p>3 – large number of recent location records or confirmed absences, or an expert-based description of likely distribution is available.</p> <p>4 – sample surveys from across a species or habitat’s potential range provide a good indication of the extent and spread of recent location records or absences within the project area.</p> <p>5 – published distribution model with good model fit covering entire project area, or extensive data across the project area produce robust distribution information.</p>
<b>Abundance</b>	<p>1 – population size unknown.</p> <p>2 – some abundance records exist but these are partial, unvalidated or old (&gt;25 years).</p> <p>3 – large number of recent (&lt;25 years) abundance records exist from unstructured surveys, or unvalidated expert-based assessments of population size within the project area.</p> <p>4 – abundance quantified, but based on potentially biased methods (non-random locations, failing to account for detectability, etc.).</p> <p>5 – Robust population estimate exists based on high quality methods (random sample locations, detectability accounted for, etc.).</p>
<b>Trend</b>	<p>1 – population/range trend/habitat extent unknown (i.e. data from one period only).</p> <p>2 – some time-series of records or counts exists, but insufficient to infer more than anecdotal trend information, or data span 25 years or less.</p> <p>3 – large number of comparable records/counts exist from the project area, sufficient for at least some analysis of occurrence/abundance between two time-periods to assess change through time over at least 25 years.</p> <p>4 – monitoring scheme established and able to produce trends or change between at least two time-periods of 25 years or more, but associated with some methodological biases (e.g. non-random locations, changes in methods, variation in effort).</p> <p>5 – robust population and/or range change estimates over 25 or more years, derived from high quality methods.</p>
<b>Threats (for studies of a single threat, or of a species/habitat to examine a range of threats)</b>	<p>1 – threats unknown.</p> <p>2 – some ad hoc data or expert judgement about the importance of potential threat(s) is available.</p> <p>3 – limited analysis of a single threat is available, but from a limited sample or a small proportion of the project area (i.e. may not be representative) or large-scale expert-based assessment of key threats (e.g. IUCN Red List assessment).</p> <p>4 – robust analysis of threats undertaken but key threat(s) still not identified.</p> <p>5 – published analysis has identified key threats to species/habitat with high confidence.</p>
<b>Actions/interventions</b>	<p>1 – solutions untested.</p> <p>2 – some anecdotal information about responses to interventions at one or a small number of locations.</p> <p>3 – some quantitative information or expert-based assessment on the effectiveness of action.</p> <p>4 – some formal analytical tests undertaken on the success of intervention from at least one location.</p> <p>5 – analysis of the impact of intervention and solutions upon populations and distributions at multiple locations, which may be synthesised using meta-analyses.</p>
<b>Extinction risk</b>	<p>1 – extinction risk unknown.</p> <p>2 – some information gathered to assess extinction risk.</p> <p>3 – complete set of information available for extinction risk assessment.</p> <p>4 – IUCN Red List assessment or equivalent categorical approach undertaken.</p> <p>5 – quantitative assessment of extinction risk undertaken (e.g. Population Viability Analysis).</p>



## SPECIES & HABITAT MANAGEMENT FACTSHEET

## SCORECARD FOR EVALUATING KNOWLEDGE GAPS

**Step 3. Discuss and provide justification for the scores given.**

Discuss and record reasons for the scores given. This is just as important as the scoring itself, and provides useful insights into how the project brought about (or in some cases did not bring about) the observed change.

**SPECIES & HABITAT  
MANAGEMENT  
FACTSHEET****SCORECARD FOR  
EVALUATING  
KNOWLEDGE GAPS****STEP 3**



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING KNOWLEDGE GAPS

#### EXAMPLE 1

**Project:** A threatened species was known to occur within a protected area from one or two historical records only. In order to inform the future development of an action plan for the area, a project to re-survey the protected area for the species was carried out. The specific aim of the project was to confirm the continued persistence or absence of the species. By using a robust sampling approach, the project confirmed the species persistence, and, using modelling of widely-available remote-sensing data, successfully predicted

the occurrence and abundance of the species across the protected area, with the results being subsequently published in a local journal.

**Evaluation:** In order to evaluate this, the project team asked key informants with experience of the species and the target site to use the criteria in the PRISM knowledge gaps factsheet to score the level of knowledge on the species distribution and abundance before and after the project, and to estimate what the level of knowledge would have been without the project (see table below).

ASPECT OF KNOWLEDGE	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATE WITHOUT THE PROJECT
<b>Distribution</b>	1 – species/habitat distribution is unknown or based upon a small number of historical (>25 years old) records.	5 – published distribution model with good model fit covering entire project area, or extensive data across the project area produce robust distribution information.	1 – species/habitat distribution is unknown or based upon a small number of historical (>25 years old) records.
<b>Abundance</b>	1 – population size unknown.	5 – robust population estimate exists, based on high quality methods.	1 – population size unknown.

**Justification:** Key informants scored the level of knowledge after the project as 5, highlighting the project's publication of a model predicting occurrence and abundance. They also scored the level of knowledge before the project and the estimate of what would have happened without the project as 1, as no other projects or studies had looked at the target area or species in that time. Given that the original project goal was to improve the score for distribution from 1 to 2 this represents a greater impact than originally anticipated, and it would not have been achieved without the project.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING KNOWLEDGE GAPS

#### EXAMPLE 2

**Project:** A conservation project converted some historically farmed land to re-create wetland habitat adjacent to a small protected area supporting a population of critically endangered frogs. It was not known whether the approach produced habitat of sufficient quality for the frogs to colonise, although the approach had been shown to work for other species in other contexts.

**Evaluation:** To evaluate the success of this action the project team monitored habitat quality on the re-created habitat,

comparing it to the quality within the protected area, and checked for the occurrence of the frogs within the re-created habitat, assuming that in the absence of habitat restoration, the target species would not occur on farmland.

The project team undertook an evaluation both to assess the project results and to assess whether they had been able to fill the knowledge gap concerning whether or not the approach worked for encouraging frogs to re-colonise a restored area.

ASPECT OF KNOWLEDGE	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATE WITHOUT THE PROJECT
<b>Actions/interventions</b>	2 – some anecdotal information about responses to interventions at one or a small number of locations.	4 – formal analytical tests, including of counterfactuals, of the success of intervention undertaken at least one location.	2 – some anecdotal information about responses to interventions at one or a small number of locations.

**Justification:** The restored habitat differed in water quality from habitat in the protected area, and the restored area was not colonised by frogs. The conservation element of the project was therefore unsuccessful, but the research to fill the knowledge gap was successful, achieving an actions/interventions score of 4. In the absence of the project, the level of information about the quality of the re-created habitat and about the occurrence of the amphibians would have remained the same.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR DEGREE OF COMPLETION OF AN ACTION PLAN

#### STEP 1

#### Factsheet: Scorecard for degree of completion of an action plan

##### Summary

This factsheet describes a simple method for evaluating project actions that aim to develop or contribute to the compilation of species action plans or habitat conservation plans. It presents a 1-10 scale for scoring the degree of completion of a plan. The change in scores during the course of a project is compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions.

##### Required steps

#### Step 1. Familiarise yourself with the scoring criteria.

Typically, compiling an action plan involves the ten steps outlined in Table 1 (note that in some cases, action plans may be compiled by soliciting stakeholder input remotely, rather than in person at a workshop).

**TABLE 1: SCORES FOR EACH STAGE IN CREATING A SPECIES ACTION PLAN.**

STAGE OF COMPLETION	SCORE
No existing action plan	0
Stakeholders identified	1
Background information compiled	2
Workshop conducted with key stakeholders reviewing background information, agreeing status, threats and actions	3
Action plan drafted	4
Action plan reviewed by workshop participants	5
Action plan reviewed by wider stakeholder network	6
Action plan finalised	7
Action plan published, launched, and distributed	8
Action plan officially recognised e.g. by IUCN-SSC, government, multi-lateral environmental agreement, other stakeholder groups	9
Action plan implemented (confirmed by monitoring & evaluation)	10



**Step 2. Score the degree to which project actions contributed towards the completion of the action plan.**



Following the scoring criteria in Table 1, fill in the scorecard in Table 2 to categorise the degree to which the project contributed to the completion of the species/site action plan. Scores should reflect:

- the degree of completion at the beginning of the project (scored retrospectively if not assessed at the beginning);
- the degree of completion at the end of the project; and
- the estimated degree of completion if the project had not taken place (the counterfactual scenario).

Ideally the scoring should be carried out both by the project team and by certain key informants who have relevant knowledge of the project's conservation target (e.g. experts on the species/site being targeted). See the factsheet [Key informant interviews](#) for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible and justify the scores selected.

## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR DEGREE OF COMPLETION OF AN ACTION PLAN

#### STEP 2

**TABLE 2. ACTION PLAN COMPLETION SCORECARD.**

ACTION PLAN	DEGREE OF COMPLETION		
	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
Insert name of action plan here			
<b>Justification:</b>			



**Step 3. Discuss and provide justification for the scores given.**

Discuss and record reasons for the scores given: this is just as important as the scoring, and it provides useful insights into how the project brought about (or in some cases did not bring about) the observed change.

Note that many small/medium-sized projects, rather than completing a full action plan themselves, will instead generate new information on a species population size and distribution, and feed this into the action plan. In such cases, the scoring criteria remain the same, with the difference between the scores given for the situation after the project and those given for the estimate of what would have happened without the project reflecting the degree to which the project contributed towards the action plan's completion (see example 2 below). In these cases it is particularly important to provide justification and explain in as much detail as possible how the project's actions contributed to the production of the wider plan.

**Step 4. Present the results.**

The final difference between the actual scores and the hypothetical scenario can be presented to stakeholders either as a narrative or as quantitative scores (see example 1) in a table or diagram.

## SPECIES & HABITAT MANAGEMENT FACTSHEET

## SCORECARD FOR DEGREE OF COMPLETION OF AN ACTION PLAN

### STEPS 3 & 4





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR DEGREE OF COMPLETION OF AN ACTION PLAN

#### EXAMPLE 1

**Project:** A project aimed to produce a species action plan for a rare plant.

**Scoring and justification:** This can either be stated as a narrative or scored as follows: score at start of project = 0, score at end = 8, score in the absence of the project = 0; outcome of project is 8-0 = 8.

#### EXAMPLE 1.

ACTION PLAN	DEGREE OF COMPLETION		
	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
Species action plan for rare plant	0 – No existing action plan	8 – Action plan published, launched, and distributed	0 – No existing action plan

**Justification:** No action plan existed at the start of a project. The project implemented actions that resulted in publication of the plan and its distribution, but no official recognition or implementation happened within the project timeframe. No other efforts by non-project actors to produce an action plan occurred during the project timeframe.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR DEGREE OF COMPLETION OF AN ACTION PLAN

#### EXAMPLE 2

**Project:** An action planning process was already underway to produce a species action plan for a critically endangered shorebird along a migratory flyway. To support this process, a project carried out shorebird surveys at an important staging point on the flyway. This generated new information on the species' population size and distribution, which was then fed into the action plan.

#### Scoring and justification:

EXAMPLE 2.			
ACTION PLAN	DEGREE OF COMPLETION		
	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
Species action plan for shorebird	0 – No existing action plan	6 – Action plan reviewed from wider stakeholder network	5 – Action plan reviewed by workshop participants
<p><b>Justification:</b> While the action plan had successfully completed its initial stages without the input of the project, the information gathered by the project played an important role in allowing the action plan to progress to the next stages of development. This is reflected by the difference in scores between those given after the project and for the estimate of what would have happened without the project.</p>			





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR ADEQUACY OF AN ACTION PLAN

#### STEP 1

#### Factsheet: Scorecard for adequacy of an action plan

##### Summary

This factsheet describes a simple method for evaluating project actions that aim to develop or contribute to the development of species action plans or habitat conservation plans. It presents a 1-9 scale for scoring the adequacy of a plan. The change in scores during the course of a project is compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions.

##### Required steps

#### Step 1. Familiarise yourself with the scoring criteria.

The adequacy of an action plan can be judged in three ways:

1. How comprehensively does it assess the status, threats and actions needed?
2. Does it have wide stakeholder buy-in and/or official endorsement?
3. Is it being used?

Each of these parameters can be scored as low (1), medium (2) or high (3) using the criteria in Table 1, with the sum of the scores giving a maximum of 9 across all three parameters.

TABLE 1. SCORES FOR THE ADEQUACY OF AN ACTION PLAN.

ADEQUACY OF ACTION PLAN	SCORING CRITERIA
<b>Comprehensiveness of assessment of the status, threats and actions needed</b>	1 - Based only on a single source or missing many key sources of information. 2 - Missing some key sources of information. 3 - Fully comprehensive.
<b>Breadth of stakeholder buy-in and official endorsement</b>	1 - Based on limited stakeholder inputs. Some key stakeholder groups not consulted. 2 - At least one key stakeholder group not consulted or endorsement lacking by at least one key authority. 3 - Based on wide stakeholder inputs. Endorsed by relevant authorities (e.g. local/national government, international bodies).
<b>Degree of application to coordinate actions being implemented</b>	1 - Action plan not being used. No actions being implemented, or those that are being implemented are done without reference to the action plan. 2 - Action plan being partly used to define, prioritise and coordinate actions that are being implemented, but some actions or actors operating without reference to the action plan. 3 - Action plan being explicitly used to define, prioritise and coordinate actions that are being implemented.

## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR ADEQUACY OF AN ACTION PLAN

#### STEP 2



#### Step 2. Using the scoring criteria in Table 1, score the adequacy of the action plan.

Ideally the scoring should be carried out both by the project team and by certain key informants who have relevant knowledge of the project's conservation target (e.g. experts on the species/site being targeted). See the factsheet [Key informant interviews](#) for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible and justify the scores selected.

Fill in the scorecard in Table 2 following the scoring criteria in Table 1 to categorise the degree to which the project contributed to the completion of the species/site action plan. Score the situation:

- (1) at the beginning of a project (this can be done retrospectively if necessary);
- (2) at the end of the project; and
- (3) for a hypothetical scenario in which the project did not take place (i.e. a counterfactual scenario).

TABLE 2. ACTION ADEQUACY SCORECARD.

ADEQUACY OF ACTION PLAN	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
Comprehensiveness of assessment of the status, threats and actions needed			
Breadth of stakeholder buy-in and official endorsement			
Degree of application to coordinate actions being implemented			
<b>Total</b>			
<b>Justification:</b>			



**Step 3. Compare the difference between (a) the actual change over time in scores and (b) the change in scores for the hypothetical scenario, to represent the outcome and impact of project actions.**



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR ADEQUACY OF AN ACTION PLAN

#### STEP 3

This third step is to account for the fact that scores may have increased during the period of the project owing to external factors (e.g. work by other individuals/organisations may have increased the knowledge base for the species or ecosystem). Justification notes should be provided for all scores given, in order to support the assessment and to make it as objective as possible.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR ADEQUACY OF AN ACTION PLAN

#### EXAMPLE

**Project:** A project aimed to support the implementation of a site action plan for a small nature reserve. The action plan had been developed as part of a previous project, but reports from conservationists working at the site indicated that it was not being implemented. The aim of the new project was therefore to review the action plan and make suggestions for its improvement and to promote uptake.

The project found the action plan to be sufficiently comprehensive, having been reviewed and accepted by experts on the target site. The action plan was also found to have significant buy-in from the reserve authorities. However the project identified that local communities were either unaware of the plan or were unsure about

its implementation. The project worked with this key stakeholder group to find ways of improving the plan and to promote its uptake. As a result, the action plan came to be implemented at several of the target communities within the reserve, although logistical issues meant that not all target communities could be reached.

Scoring and justification: Reserve managers and conservationists working at the site were asked to use the criteria in the scorecard to rate the adequacy of the action plan before and after the project and for a hypothetical scenario where the project did not take place. Scoring showed an increase in total score for action plan adequacy from 5 to 8. If the project hadn't happened, the score was likely to have remained at 5.

ADEQUACY OF ACTION PLAN	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
<b>Comprehensiveness of assessment of the status, threats and actions needed</b>	3 - Fully comprehensive.	3 - Fully comprehensive.	3 - Fully comprehensive.
<b>Breadth of stakeholder buy-in and official endorsement</b>	2 - At least one key stakeholder group not consulted or endorsement lacking from at least one key authority.	3 - Based on wide stakeholder inputs. Endorsed by relevant authorities.	2 - At least one key stakeholder group not consulted or endorsement lacking from at least one key authority.
<b>Degree of application to coordinate actions being implemented</b>	1 - Action plan not being used. No actions being implemented, or those that are being implemented are done without reference to the action plan.	2 - Action plan being partly used to define, prioritise and coordinate actions that are being implemented, but some actions or actors operating without reference to the action plan.	1 - Action plan not being used. No actions being implemented, or those that are being implemented are done without reference to the action plan.
<b>Total</b>	<b>5</b>	<b>8</b>	<b>5</b>
<b>Justification:</b> Increase in stakeholder buy-in and the fact that the action plan is now being implemented at some of the target communities are the main reasons for the increase in score.			



## SPECIES & HABITAT MANAGEMENT FACTSHEET



### THREAT REDUCTION SCORING

#### STEPS 1 & 2

#### Factsheet: Threat reduction scoring

##### Summary

This factsheet describes a simple method for assessing the magnitude of threats to species or habitats. It involves identifying the relevant threats, scoring the timing, scope and severity of each threat, and summing these to calculate threat magnitude. The change in the magnitude of threats during the course of a project is compared to a hypothetical scenario in which the project did not take place, in order to estimate the outcome and impact of project actions.

#### Required steps

**Step 1.** Classify which types of threats affect the species or habitat, preferably using the [IUCN/CMP Threats classification scheme](#).

**Step 2.** Familiarise yourself with the scoring criteria.

The impact of a threat can be scored using the following criteria:

- a. **Scope** - the estimated proportion of the population of the species in the project area or the proportion of the habitat in the project area that the threat affects.
- b. **Severity** - the rate of population decline of the species or the rate of degradation of the habitat, **within the area of the project that is affected by the threat**, over ten years (or for species, three generations, if this is longer).
- c. **Timing** - whether the threat is happening currently, has happened in the past or may happen in the future.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### THREAT REDUCTION SCORING

#### STEP 3

TABLE 1. SCORES FOR THE SCOPE, SEVERITY' AND TIMING OF THREATS AFFECTING A SPECIES OR HABITAT.

THREAT PARAMETER	SCORING CRITERIA
<b>Scope of threat (% of population or area)</b>	0 - Few individuals/small area (<10%) 1 - Some of population/area (10-49%) 2 - Most of population/area (50-90%) 3 - Whole population/area (>90%)
<b>Severity of threat (% decline over 10 years or 3 generations)</b>	0 - No or imperceptible deterioration (<1%) 1 - Slow deterioration (1-9.9%) 2 - Moderate deterioration (10-30%) 3 - Rapid deterioration (>30%)
<b>Timing/risk of threat</b>	0 - Past (and unlikely to return) and no longer limiting 1 - Likely in long term (beyond 4 years) 2 - Likely in short term (within 4 years) 3 - Happening now

**Table 1. Scores for the scope, severity' and timing of threats affecting a species or habitat.** (Figures given in brackets are for guidance, rather than implying that quantitative data are essential for applying this method).

**Step 3. Score the scope, severity and timing of each threat at the beginning of the project.**

Ideally the scoring should be carried out both by the project team and by certain key informants who have relevant knowledge of the project's conservation target (e.g. experts on the species/site being targeted). See the factsheet Key informant interviews for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible and justify the scores selected.

Use the scorecard in Table 2 and the scoring criteria in Table 1. Scores can be assigned retrospectively if they were not assessed at the beginning of the project.



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### THREAT REDUCTION SCORING

#### STEPS 4, 5 & 6

TABLE 2. THREAT ASSESSMENT SCORECARD.

THREAT	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
Scope of threat (% of population or area)			
Severity of threat (% decline over 10 years or 3 generations)			
Timing/risk of threat			
<b>Total</b>			
<b>Justification:</b>			

Sum the scores to produce an overall “impact score” for each threat at the beginning of the project (note that if any of the scores for scope, severity or timing for a given threat = 0, then the impact score for that threat is set to 0, regardless of the scores for either of the other two parameters for that threat).

**Step 4. Score the scope, severity and timing of the threat at the end of the project.**

The change (if any) in the scores indicates whether the project had a positive or negative impact (and its magnitude) or alternatively that there was no impact that is quantifiable.

**Step 5. Estimate a score for what the scope, severity and timing of each threat would have been if the project had not taken place (the counterfactual scenario).**

**Step 6. Compare and discuss the differences between the scores to identify whether there has been a change in threat level and whether the change can be attributed to project actions. Justification notes should be provided for all scores given, in order to support the assessment and to make it as objective as possible.**





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### THREAT REDUCTION SCORING

#### EXAMPLE

**Project:** A forest dwelling ungulate was known to be threatened by hunting, primarily with snares (IUCN threat class 5.1.1: “Hunting and collecting terrestrial animals (intentional use)”). The project targeted a national park where the species was estimated to be declining rapidly. The park contains several communities, and poor relations between communities and park rangers mean that rangers were unable to patrol effectively >90% of the park. The project aimed to reduce the threat by working to build relationships between rangers and communities to allow rangers to conduct patrols. This was largely successful, allowing patrols to resume over 75% of the park area.

Subsequently the number of snares found by patrols reduced from an average of six per patrol to two.

**Evaluation:** At the beginning of the project the team asked key informants familiar with the species and the site to rate the scope, severity and timing of the threat from hunting at the beginning of the project, and this gave a threat score of 9. They were asked to repeat this scoring at the end of the project and also for a hypothetical scenario where the project had not taken place.

Informants rated the scope and severity of the threat as being lower after the project, while timing remained unchanged; giving a total threat score of 6. This contrasted with the estimate for the “no-project” scenario where scope, severity and timing remained the same.

THREAT HUNTING AND COLLECTING TERRESTRIAL ANIMALS (INTENTIONAL USE)	BEFORE THE PROJECT	AFTER THE PROJECT	ESTIMATED SITUATION IF THE PROJECT HAD NOT HAPPENED
<b>Scope of threat (% of population or area)</b>	3 - Whole population/area (>90%)	1 - Some of population/area (10-49%)	3 - Whole population/area (>90%)
<b>Severity of threat (% decline over 10 years or 3 generations)</b>	3 - Rapid deterioration (>30%)	2 - Moderate deterioration (10-30%)	3 - Rapid deterioration (>30%)
<b>Timing/risk of threat</b>	3 - Happening now	3 - Happening now	3 - Happening now
<b>Total</b>	9	6	9

**Justification:** Hunting is probably still occurring in some areas so the timing of the threat remains the same. The fact that rangers are able to patrol a much larger area, and the fact that snares are being identified and removed, means that both the scope and severity of the threat from hunting could be scored lower after the project.



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING CHANGES IN SPECIES STATUS

#### STEPS 1, 2 & 3



#### Factsheet: Scorecard for evaluating changes in species status

##### Summary

This factsheet describes a simple method that can be used to categorise a change in species status (a) that is estimated or inferred to have occurred during the course of a project designed to conserve the species, and (b) that would have occurred in a hypothetical scenario in which the project did not take place. Comparing these provides a simple assessment of the project's outcomes and impacts and their magnitude. The scoring method can be applied using information from observed data and/or from information obtained from interviews with key informants. Justification notes should be provided for the categories chosen, in order to demonstrate objectivity.

#### Required steps

- Step 1.** Identify the species whose status you want to evaluate. You should only evaluate one species at a time using this method.
- Step 2.** Familiarise yourself with the scoring criteria in Table 1.
- Step 3.** Using the criteria outlined in Table 1 and the scorecard shown in Table 2, score the change in the abundance of the species since the project began and for a hypothetical scenario in which the project did not take place (and in which all other factors remained the same). Species distribution extent or occupancy can be used as proxies for abundance.

Ideally the scoring should be carried out both by the project team and by key informants who have relevant knowledge of the species population being assessed. See the factsheet Key informant interviews for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible and justify the scores selected.





**SPECIES & HABITAT MANAGEMENT FACTSHEET**

**SCORECARD FOR EVALUATING CHANGES IN SPECIES STATUS**

**TABLE 1: SCORING CRITERIA FOR EVALUATING CHANGES IN SPECIES STATUS.**

		HOW DID THE SPECIES' ABUNDANCE CHANGE DURING THE COURSE OF THE PROJECT?				
		LARGE DECREASE (>30%)	MODERATE DECREASE (10-30%)	STABLE (<10% CHANGE)	MODERATE INCREASE (10-30%)	LARGE INCREASE (>30%)
How would the species' abundance have changed in the absence of the project?	Large decrease (>30%)	Project action had little or no impact and failed to combat a large decrease in abundance	Project action had a minor positive impact by changing a large decrease in abundance into a moderate decrease in abundance	Project action had a moderately positive impact by halting a large decrease in abundance, resulting in stable trends in abundance	Project action had a substantial positive impact by reversing a large decrease in abundance, resulting in a moderate increase in abundance	Project action had a very substantial positive impact by reversing a large decrease in abundance, resulting in a large increase in abundance
	Moderate decrease (10-30%)	Project action had a minor negative impact by changing a moderate decrease in abundance into a large decrease in abundance	Project action had little or no impact and failed to combat a large decrease in abundance	Project action had a moderately positive impact by halting a moderate decrease in abundance, resulting in a stable trend	Project action had a moderately positive impact by reversing a moderate decrease in abundance resulting in a moderate increase in abundance	Project action had a substantial positive impact by reversing a moderate decrease in abundance, resulting in a large increase in abundance
	Stable (<10% change)	Project action had a moderately negative impact by causing a large decrease in abundance	Project action Had a moderately negative impact by causing a moderate decline in abundance	Project action had little or no impact and the species continued in a stable trend	Project action had a moderately positive impact by causing a moderate increase in abundance	Project action had a moderately positive impact by causing a large increase in abundance
	Moderate increase (10-30%)	Project action had a substantial negative impact by reversing a moderate increase in abundance, resulting in a large decrease in abundance	Project action Had a moderately negative impact by reversing a moderate increase in abundance, resulting in a moderate decline in abundance	Project action Had a moderately negative impact by halting a moderate increase in abundance, resulting in a stable trend	Project action had little or no impact and the species continued to undergo a moderate increase in abundance	Project action had a moderately positive impact by increasing the observed rate of change from a moderate to a large increase in abundance
	Large increase (>30%)	Project action had a very substantial negative impact by reversing a large increase in abundance, resulting in a large decrease in abundance	Project action had a substantial negative impact by reversing a large increase in abundance, resulting in a moderate decline in abundance	Project action Had a moderately negative impact by halting a large increase in abundance, resulting in a stable trend	Project action had a moderately negative impact by reducing the observed rate of change from a large to moderate increase in abundance	Project action had little or no impact and the species continued to undergo a large increase in abundance





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING CHANGES IN SPECIES STATUS

#### STEPS 4 & 5

TABLE 2. SPECIES STATUS SCORECARD.

SPECIES	HOW DID THE SPECIES' ABUNDANCE CHANGE DURING THE COURSE OF THE PROJECT?	HOW WOULD THE SPECIES' ABUNDANCE HAVE CHANGED IN THE ABSENCE OF THE PROJECT?	PROJECT IMPACT
<i>Insert species name</i>			
<b>Justification:</b>			

**Step 4.** Use the values in Table 1 to score for the impact of project actions on species status based on comparing the observed change with the estimate for a hypothetical scenario in which the project did not take place.

**Dark green cells** Cases where project actions had a substantial or very substantial positive impact.

**Light green cells** Cases where project actions had a minor or moderately positive impact.

**Amber cells** Cases where project actions had a minor or moderately negative impact.

**Red cells** Cases where project actions had a substantial or very substantial negative impact.

Note that you would not normally carry out a project where it is known in advance that the species targeted by the project will increase in the absence of the project (lower two rows in Table 1), but a species may increase for reasons unrelated to the project once the project has started.

**Step 5.** Compare the scores given by the different experts engaged, and develop conclusions and recommendations. When asking your chosen experts to score you should also ask for and record their justifications for the answers given.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING CHANGES IN HABITAT STATUS

STEPS 1, 2, 3 & 4

#### Factsheet: Scorecard for evaluating changes in habitat status

##### Summary

This method should be used to categorise a change in habitat status (a) that is estimated or inferred to have occurred during the course of a project designed to conserve the habitat, and (b) that would have occurred in a hypothetical scenario in which the project did not take place. Comparing these provides a simple assessment of the project's outcomes and impacts and their magnitude. The scoring method can be applied using information from observed data and/or expert opinion. Justification notes should be provided for the categories chosen, in order to demonstrate objectivity.

##### Required steps

- Step 1.** Identify the habitat you want to evaluate. You should only evaluate one type of habitat at a time using this method.
- Step 2.** Familiarise yourself with the scoring criteria in Table 1.
- Step 3.** Using the criteria outlined in Table 1 and the scorecard shown in table 2, score the change in habitat quality since the project began and for a hypothetical scenario in which the project did not take place (and in which all other factors remained the same).

Ideally the scoring should be carried out both by the project team and by certain key informants who have relevant knowledge of the habitat being assessed. See the factsheet Key informant interviews for more information on this approach. If scoring is only being carried out by the project team you should attempt to do this as objectively as possible and justify the scores selected.

- Step 4.** Use the values in Table 1 to score the impact of project actions on habitat status, based on comparing the observed change with the estimate for a hypothetical scenario in which the project did not take place.

<b>Dark green cells</b>	Cases where project actions had a substantial or very substantial positive impact.
<b>Light green cells</b>	Cases where project actions had a minor or moderately positive impact.
<b>Amber cells</b>	Cases where project actions had a minor or moderately negative impact.
<b>Red cells</b>	Cases where project actions had a substantial or very substantial negative impact.





**SPECIES & HABITAT MANAGEMENT FACTSHEET**

**SCORECARD FOR EVALUATING CHANGES IN HABITAT STATUS**

**TABLE 1: SCORING TABLE FOR EVALUATING CHANGES IN HABITAT STATUS**

		HOW DID THE HABITAT QUALITY OF THE PROJECT SITE(S) CHANGE DURING THE COURSE OF THE PROJECT?				
		LARGE DETERIORATION (>30%)	MODERATE DETERIORATION (10-30%)	STABLE (<10% CHANGE)	MODERATE IMPROVEMENT (10-30%)	LARGE IMPROVEMENT (>30%)
How would the habitat status of the project site(s) have changed in the absence of the project?	Large deterioration (>30%)	Project action had little or no impact and failed to combat a large deterioration in habitat quality	Project action had a minor positive impact by changing a large deterioration in habitat quality into a moderate deterioration in habitat quality	Project action had a moderately positive impact by halting a large deterioration in habitat quality, resulting in a stable trend in habitat quality	Project action had a substantial positive impact by reversing a large deterioration in habitat quality, resulting in a moderate improvement in habitat quality	Project action had a very substantial positive impact by reversing a large deterioration in habitat quality, resulting in a large improvement in habitat quality
	Moderate deterioration (10-30%)	Project action had a minor negative impact by changing a moderate deterioration in habitat quality into a large deterioration in habitat quality	Project action had little or no impact and failed to combat a large deterioration in habitat quality	Project action Had a moderately positive impact by halting a moderate deterioration in habitat quality, resulting in a stable trend in habitat quality	Project action had a moderately positive impact by reversing a moderate deterioration in habitat quality, resulting in a moderate improvement in habitat quality	Project action had a substantial positive impact by reversing a moderate deterioration in habitat quality, resulting in a large improvement in habitat quality
	Stable (<10% change)	Project action had a moderately negative impact by causing a large deterioration in habitat quality	Project action Had a moderately negative impact by causing a moderate deterioration in habitat quality	Project action had little or no impact and stable trends in habitat quality continued	Project action Had a moderately positive impact by causing a moderate improvement in habitat quality	Project action had a moderately positive impact by causing a large increase in habitat quality
	Moderate improvement (10-30%)	Project action had a substantial negative impact by reversing a moderate improvement in habitat quality, resulting in a large deterioration in habitat quality	Project action had a moderately negative impact by reversing a moderate improvement in habitat quality, resulting in a moderate deterioration in habitat quality	Project action had a moderately negative impact by halting a moderate improvement in habitat quality, resulting in a stable trend in habitat quality.	Project action had little or no impact and habitat continued to undergo a moderate improvement in quality	Project action Had a moderately positive impact by increasing the observed rate of change from a moderate to large improvement in habitat quality
	Large improvement (>30%)	Project action had a very substantial negative impact by reversing a large improvement in habitat quality, resulting in a large deterioration in habitat quality	Project action had a substantial negative impact by reversing a large improvement in habitat quality, resulting in a moderate deterioration in habitat quality	Project action had a moderately negative impact by halting a large improvement in habitat quality, resulting in a stable trend in habitat quality	Project action had a moderately negative impact by reducing the observed rate of change from a large to moderate improvement in habitat quality	Project action had little or no impact and habitat continued to undergo a large improvement in quality





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### SCORECARD FOR EVALUATING CHANGES IN HABITAT STATUS

#### STEP 5

**TABLE 2. HABITAT STATUS SCORECARD.**

HABITAT	HOW DID THE HABITAT QUALITY OF THE PROJECT SITE(S) CHANGE DURING THE COURSE OF THE PROJECT?	HOW WOULD THE HABITAT STATUS OF THE PROJECT SITE(S) HAVE CHANGED IN THE ABSENCE OF THE PROJECT?	PROJECT IMPACT
<i>Insert details of habitat here (site/habitat type etc.)</i>			
<b>Justification:</b>			

Note that you would not normally carry out a project where it is known in advance that the habitat targeted by the project will improve in the absence of the project (lower two rows in Table 1), but a habitat may improve for reasons unrelated to the project once the project had started.

**Step 5. Compare the scores given by the different experts engaged, and develop conclusions and recommendations. When asking your chosen experts to score, you should also ask for and record their justifications for the answers given.**



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### FIELD SURVEYS FOR EVALUATING CHANGES IN SPECIES STATUS

#### STEP 1



#### Factsheet: Field surveys for evaluating changes in species status

##### Summary

To evaluate changes in species status directly, robust and repeatable field surveys are typically required. Deciding on an appropriate field survey method will depend on the taxonomic group being surveyed, for example surveying birds requires a very different approach to that for monitoring aquatic insects. Note that it often takes a long time for changes in species status to become measurable, so you must be confident that enough time has passed to allow you to measure such changes.

#### Required steps

##### Step 1. Identify the species/taxonomic group(s) you want to measure

The species you want to measure will typically fall into one of the following categories:

- The species being targeted by the project (e.g. surveying the number of Snow Leopards in a particular area where the conservation of this species is a priority).
- Species important to the species being targeted by the project (e.g. surveying species preyed upon by Snow Leopards).
- Species whose presence/abundance acts as an indicator of habitat quality (e.g. sampling freshwater invertebrates to indicate water quality).



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### FIELD SURVEYS FOR EVALUATING CHANGES IN SPECIES STATUS

#### STEPS 2, 3 & 4



#### Step 2. Define the species attributes you want to measure

Examples of species attributes that could be measured in a field survey include<sup>20</sup>:

**Occurrence** – Which species occur (e.g. presence/absence).

**Distribution** – Where the species occur (e.g. area, physical attributes).

**Abundance** – How many individuals/pairs of a species occur in a given area (e.g. frequency, density).

**Population structure** – Composition of the species population being targeted (e.g. age, sex ratio, fragmentation or isolation).

**Population dynamics** – Recruitment, mortality, emigration, immigration, seasonal factors.

Always think back to the main aims of the project and the question you are trying to answer. For example if you want to know whether a species is recolonising an area it had disappeared from, you may wish to focus on its distribution. If the project involves eradicating an invasive species that preys on the juveniles of a species of conservation concern, you may wish to know whether successful breeding of the target species is occurring (e.g. evidence of hatchling success in albatross chicks).

<sup>20</sup>Further details of these characteristics can be found on pages 10-13 of the Cambridge Handbook of Biodiversity Methods: <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>.

#### Step 3. Define the sample area.

If you are not able to measure change across the whole population of interest, then you should select a sampling approach (see below) that will give you a representative measure.

If you are using a [matching evaluation design](#) which compares changes in the species population being targeted by the project with a control population, then you need to ensure that the populations are similar enough to allow you to draw useful comparisons, or that you have sufficient samples from across a range of sites that are likely to be representative.

#### Step 4. Select data collection methods.

The methods available to you will depend on the species and the species attributes you are attempting to measure.

While it is not possible to cover all the available methods for monitoring and evaluating species status in this Toolkit, the Annex [Field methods for species monitoring](#) describes some of the most commonly used methods and sampling approaches for different taxonomic groups.

When selecting methods remember to consider potential sources of bias and how these could be reduced or minimised.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### FIELD SURVEYS FOR EVALUATING CHANGES IN SPECIES STATUS

#### STEP 5

**TABLE 1. POTENTIAL SOURCES OF BIAS DURING FIELD SURVEYS, AND POTENTIAL STRATEGIES FOR MINIMISING/REDUCING THESE**

POTENTIAL SOURCE OF BIAS	STRATEGIES FOR MINIMISING/REDUCING THE BIAS
<b>Observers have different levels of expertise</b>	<p>Use standard methodologies across years, surveys and sites.</p> <p>Ensure all observers are trained to a certain standard.</p> <p>Calibrate observers against each other before and during data collection</p> <p>Record observer identity, allowing subsequent correction of bias analytically.</p>
<b>Variation in observer effort between surveys</b>	<p>Use standard methodologies across years, surveys and sites.</p> <p>Record observer effort during sampling periods, allowing analytical correlation of bias.</p>
<b>Certain species/habitats may be more difficult to survey than others</b>	<p>Consider approaches that account for variation in detectability between species.</p> <p>Stratify samples across habitats to increase coverage in difficult habitats.</p>
<b>Local conditions may affect data collection (weather, political events, etc.)</b>	<p>Record as much detail on local conditions as possible during surveys, allowing analytical correction.</p>
<b>Lack of standardisation between sites/observers</b>	<p>Agree and record definitions (e.g. sample size, type population unit) beforehand.</p> <p>Ensure all observers are trained to a certain standard.</p>

#### Step 5. Select the sampling approach.

As well as the method by which individuals are detected and counted, it is also important to consider the sampling approach. Although it may be possible to undertake a complete survey in which all individuals in the area of interest are counted, changes

in population size or range extent will typically be estimated from sample surveys in which only a proportion of the population is recorded. Table 2 outlines several different approaches to this. The Annex [Sampling approaches for evaluating changes in species status](#) provides further details on each of these and sources of more detailed methods for them.



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### FIELD SURVEYS FOR EVALUATING CHANGES IN SPECIES STATUS

TABLE 2. SUMMARY OF SAMPLING APPROACHES FOR ASSESSING THE STATUS OF SPECIES.

SAMPLING APPROACH	NOTES AND CAVEATS
<b>Complete counts</b>	Rarely feasible unless individuals are easily detected and are concentrated within a relatively small area. May use field counts or photos. Consider the most appropriate life stage.
<b>Area-based sampling</b>	Sample defined area and extrapolate to unsurveyed areas. Methods include point counts, line transects and counts from fixed points. May need to correct for imperfect detectability. Samples should be randomly distributed or appropriately stratified.
<b>Timed sampling</b>	Record numbers per unit time (e.g counts of migrating individuals, camera traps, passive acoustic recording devices). Most appropriate for species that have low detectability, are widely dispersed, or require methods that are difficult to standardise. More appropriate for estimating relative abundance than population size.
<b>Live trapping</b>	Mist nets (for birds/bats), mammal traps, fish nets, moth traps, invertebrate pitfall traps etc. to estimate relative abundance in a similar manner to timed sampling. Rings/bands (birds), microchips (vertebrates), colour marks (invertebrates) or unique appearance can be used to identify individuals for demographic monitoring, and to estimate population size from the ratio of the number of individuals caught and marked to those recaptured in a subsequent sample.
<b>Removal trapping<sup>21</sup></b>	A wide range of trapping approaches can be used if individuals must be killed for identification purposes (e.g. pitfall, malaise or water traps for insects, netting for fish, snap traps for small mammals), to estimate relative abundance in a similar manner to live trapping. Data can also be used to estimate initial abundance from the decay in numbers of individuals trapped through time, although this depletes the target population and needs to standardise survey effort over time.
<b>Sampling eDNA</b>	A developing technique for detecting occurrence or (with considerable caveats) abundance of species, from DNA extracted from environmental or biological samples. May be particularly useful for taxa that are difficult to survey using other approaches, such as amphibians or fish in freshwater environments, cryptic mammals or micorrhizal fungi in soil. May be more relevant for small and medium-sized conservation projects in future as technology develops.

<sup>21</sup>These approaches may raise ethical issues. See Factsheet: [Developing ethical protocols for an evaluation](#) for more details

**Step 6. Plan for data management and analysis.**

As a final step before you begin collecting data you should consider how you will manage and analyse the data you collect.



To prepare for data analysis and presentation, think about the following questions:

- Do you need datasheets and databases, and how should they be designed?
- Who will carry out the analysis, and when?
- How will the data be analysed?
- What other data are required prior to analysis?
- What statistical tests are appropriate for analysing the data?
- What statistical packages are available for the analysis of data?
- When should data analysis and presentation take place?

Refer to the PRISM section [Analyse data](#) (in Step 3) for more information.

Refer to the Species/Habitat Annex: [Analytical issues when estimating abundance, distribution, survival and reproduction](#) for specific guidance on analysis in relation to estimating species abundance, distribution, survival and reproduction.

## SPECIES & HABITAT MANAGEMENT FACTSHEET

## FIELD SURVEYS FOR EVALUATING CHANGES IN SPECIES STATUS

### STEP 6



## SPECIES & HABITAT MANAGEMENT FACTSHEET



### REMOTE ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

#### STEPS 1 & 2

#### Factsheet: Remote assessment methods for evaluating changes in habitat status

##### Summary

Remote sensing data can be used to assess changes in land cover extent and fragmentation, and in some cases, condition (e.g. % canopy cover, vegetation structure). These measures can be used as indicators of habitat status. (Remote sensing is also useful for detecting some threats, so may be relevant to evaluation of threat-related issues)

##### Required Steps

#### Step 1. Identify the area(s) you want to evaluate.

If you are not able to measure change across the whole area of interest then you need to adopt a sampling approach (see below) that will give you a representative measure of change across the area of interest.

If you are using a [matching evaluation design](#) which compares changes at the project site with a control site, then ensure that the sites are similar enough to allow you to draw useful comparisons between them.

#### Step 2. Identify the habitat characteristics you want to measure.

Examples of habitat characteristics that could be measured using remote sensing include:

**Extent** – Area, physical attributes.

**Composition** – Extent, cover.

**Structure** – Vertical (e.g. tree layer topography).

**Dynamics** – e.g. regeneration, succession, cyclic change, patch dynamics.

**Threats/stresses** – e.g. evidence of grazing, burning, erosion.



**Step 3. Select data source.**

There are three main sources of remote sensing assessment data:



## SPECIES & HABITAT MANAGEMENT FACTSHEET

### REMOTE ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

#### STEP 3

#### STEP 3. SELECT DATA SOURCE.

DATA SOURCE	NOTES AND CAVEATS
<b>Satellite imagery</b>	This is the most readily available form of remote sensing data. Many USGS LANDSAT images are freely available to download and range in date back to the 1970s. ESA's Copernicus programme provides data every 3-4 days and started in 2015: it includes radar data which means for example that forest under cloud can be monitored. Other potential sources include images from France's SPOT satellites, and commercial satellites IKONOS, Quickbird and Orbview; although these may require purchase. NASA has produced a detailed introduction to the use of satellite remote sensing data, available at <a href="http://arset.gsfc.nasa.gov/">http://arset.gsfc.nasa.gov/</a> . The section of this at <a href="http://arset.gsfc.nasa.gov/land">http://arset.gsfc.nasa.gov/land</a> explains how to obtain images, process them in an appropriate way before classification and undertake some basic classifications. Analysing satellite images can be time-consuming and requires considerable GIS expertise, so it may be worth considering academic collaboration with a university or research organisation to achieve this efficiently.
<b>Aerial photography</b>	Small and medium-sized conservation projects are unlikely to have the funds to carry out an aerial survey. There may however be sources of existing data that can be used, for example from relevant government agencies or Google Earth.
<b>Unmanned aerial surveys using "drones"</b>	Unmanned aerial vehicles are increasingly used in monitoring for conservation. These tools are becoming cheaper and may represent an efficient way to survey the impact of small/medium-sized conservation projects, especially if the cost can be shared across a number of projects. See <a href="https://conservationdrones.org/">https://conservationdrones.org/</a> for further information.



## SPECIES & HABITAT MANAGEMENT FACTSHEET



## REMOTE ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

### STEPS 4 & 5

#### Step 4. Collect/download data.

Remote sensing assessment data can be used to measure change in the extent of a particular land cover type which is representative of a habitat (e.g. forest), or to compare rates of land cover loss/gain before and after project interventions.

For satellite imagery and aerial photography this typically involves downloading images from two or more points in time over the period for which you wish to evaluate change, for example a point before the project, one during the project and one after the project. For an unmanned aerial survey this will involve carrying out a drone survey of the required area.

In addition to measuring change before and after the project, it is also important to consider what the land-cover extent or rate of change would have been in the absence of project actions (the counterfactual). To estimate this typically requires matching the project location to suitable comparison sites selected to be as similar as possible to the target site (similarity is based on all available data and is tested by comparing average values of covariates). Once selected, the comparison sites will be compared with the project target sites to give a measurement of the project's outcomes and impacts.

<sup>22</sup>Palumbo I, Rose, RA, Headley RMK, Nackoney J, Vodacek A and Wegmann M (2016). Building capacity in remote sensing for conservation: present and future challenges. *Remote Sens Ecol Conserv.* doi:10.1002/rse2.31.

#### Step 5. Identify the parameters you want to measure, and analyse data.

All three of the data sources listed in the previous step require some post-collection processing to assess changes in habitat. At a minimum they require visual assessment to determine the extent of each land-cover type and changes in them. A range of increasingly complicated methods can be used on these data to classify them into land-cover types, to quantify land-cover change, and to assess vegetation structure. Some knowledge of remote sensing is required for many of these analyses, but most are straightforward.

There are open source software packages in which images can be manipulated and analysed. These include QGIS <http://www.qgis.org/en/site/> (which has a wide range of free tutorials available and an active online community to help new users). In addition, R (<https://cran.r-project.org/>) has spatial analysis functionality, and many of the functions are described, with code, by Wegman et al. (2016)<sup>22</sup>. The European Commission's Joint Research Centre (EC-JRC) has developed a simple, semi automated land-cover and land-cover change mapping tool which is open source and is targeted towards protected areas and important sites for biodiversity (such as Important Bird and Biodiversity Areas and other Key Biodiversity Areas (<http://onlinelibrary.wiley.com/doi/10.1002/rse2.14/full>)). A mostly automated system for classification of forest cover and change is available through <http://claslite.carnegiescience.edu/en/index.html>.





## SPECIES & HABITAT MANAGEMENT FACTSHEET

## REMOTE ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

There is an increasing number of post-processing products derived from remote sensing which could also be useful to small- and medium-sized projects. For example, the Global Forest Watch website: <http://www.globalforestwatch.org/> presents data on tree cover at 30 m resolution globally at annual intervals from 2000 onwards. The dataset is updated annually. Users can carry out basic online analyses of tree cover and change in this over time at a project site (either by uploading their own site boundary or, for projects implementing actions within a protected area, using the relevant boundary which is available within the tool); or they can download data to carry out more detailed analyses. Other products are in development, including a water bodies dataset which will be presented online, and an urban extent layer.

Fragmentation of habitat can be inferred from fragmentation indices derived from categorical land-cover maps. Multiple measures of fragmentation (and its inverse, connectivity), exist and can be implemented in QGIS, R, or Arcmap.

For QGIS, <http://conefor.org> can be used as a plugin. This software can undertake the majority of calculations needed.

Aerial photographs can be treated in a similar way to satellite images. In addition to processing in dedicated software, both types of data can be interpreted visually. Polygons can be digitised around areas of land cover of interest by the user, rather than having to classify images. This approach is valid if the focal land cover type is distinct, or can be easily recognised by the human eye and is comparable between images. The easiest way to do this is using on-screen digitations, which can be carried out in QGIS.

### Comparing results between sites

Simple t-tests on difference in means and cross-sectional regression are two of the most common statistical methods for comparing results between sites.

Jones and Lewis (2015) describe in more detail the steps to take in selecting a comparison site using remote sensing data, and how to build this into an evaluation design - see <http://journals.plos.org/plosone/article/asset?id=10.1371%2Fjournal.pone.0141380.PDF>.

### Further reading

Vihervarra et al. (2015) – combining remote and field assessment data.: <https://link.springer.com/article/10.1007/s10980-014-0137-5>

Gottingen Forest Inventory Wiki (an excellent source of information regarding forest plot design and monitoring): [http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/AWF-Wiki:Community\\_Portal](http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/AWF-Wiki:Community_Portal)





## SPECIES & HABITAT MANAGEMENT FACTSHEET

### FIELD ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

#### STEPS 1 & 2

#### Factsheet: Field assessment methods for evaluating changes in habitat status

##### Summary

Field assessment methods can be used to confirm observations made through remote sensing or to evaluate change in their own right. They can generate a highly effective measure of project impact, but note that there is often a trade-off between reliability of results and the amount of time and resources required.

##### Required Steps

#### Step 1. Identify the habitat characteristics that you want to measure.

There are often multiple habitat characteristics that could be looked at, but it is typically most useful to focus on those that are being targeted by the project.

First, think carefully about the question you are trying to answer. For example if you want to know whether restoring habitat by planting trees is working, you may wish to focus your evaluation on whether the trees are growing as expected. If the project has involved dealing with an invasive species, you may wish to know whether the habitat is showing a decrease in characteristics relating to the impact of the species (e.g. evidence of browsing by introduced goats).

You should also think carefully about what the defining characteristics/attributes of the habitat are, try to determine what

the target habitat should look like when in good condition, and its status when the project began.

Examples of habitat characteristics:

**Extent** – Area, physical attributes.

**Composition** – e.g. communities, richness or diversity, indicator species, cover, biomass.

**Structure** – Horizontal (e.g. plant community mosaics, patches of short/tall vegetation), vertical (ground, shrub and tree layer topography).

**Dynamics** – e.g. regeneration, succession, reproduction, cyclical change, patch dynamics.

**Threats/stresses** – e.g. evidence of grazing, burning, erosion.

Taking these factors into account, identify the habitat characteristic(s) that you want to measure.

#### Step 2. Define the sample area.

If you are not able to measure change across the whole area of interest then you should select a sampling approach (see below) that will give you a representative measure of change across the area or habitat of interest.

If you are using a [matching evaluation design](#) which compares changes at the project site with a control site, then ensure that the sites are similar enough to allow you to draw useful comparisons between them.



<sup>23</sup>Further details of these characteristics can be found on pages 10-13 of the Cambridge Handbook of Biodiversity Methods - <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>.

## SPECIES & HABITAT MANAGEMENT FACTSHEET

## FIELD ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

### STEPS 3, 4 & 5



#### Step 3. Select data collection methods.

The methods you choose will depend on the habitat and the specific characteristics you are attempting to measure.

While it is not possible to cover all the possible methods for monitoring and evaluating habitat status in this Toolkit, the Annex: [Field methods for habitat monitoring](#) describes some of the most commonly used methods and sampling approaches for different habitats and habitat characteristics.

#### Step 4. Select a sampling approach.

In some cases it may be possible to measure change across an entire habitat (for example in an isolated stand of woodland). However in most cases the project will require an appropriate sampling strategy, where measurements are taken for a subset of the entire area potentially affected by project actions. The Annex [Sampling approaches for habitat monitoring](#) outlines some of the most commonly used sampling strategies for habitat monitoring.

#### Step 5. Plan for data management and analysis.

As a final step before you begin collecting data, you should consider how you will manage and analyse the data you collect.

To prepare for data analysis and presentation, think about the following questions:

- Do you need datasheets and databases?
- Who will carry out the analysis, and when?
- How will the data be analysed?
- What statistical tests are appropriate for analysing the data?
- Is transformation of the data necessary before statistical analysis can take place?
- What statistical packages are available for the analysis of data?
- When should data analysis and presentation take place?

Refer to the PRISM section [Analyse data](#) (in Step 3) for more information





## SPECIES & HABITAT MANAGEMENT FACTSHEET

## FIELD ASSESSMENT METHODS FOR EVALUATING CHANGES IN HABITAT STATUS

### EXAMPLE

**Example:** A matched sites, before-and-after trial in 1995-2001 in a Mediterranean Black Pine (*Pinus nigra*) forest in the Pyrenees, Spain (Casasús et al. 2007) found that grazing exclusion increased the biomass of herbaceous plants and shrubs. Six years after treatment, herbaceous plant and shrub biomasses (kg dry matter/ha) had increased in fenced areas (herbaceous plant: 501 to 1,730; shrub: 1,902 to 5,073) but not in grazed areas (herbaceous plant: 417 to 679; shrub: 1,120 to 1,207). At the beginning of the study herbaceous plant and shrub biomasses were similar in the grazed and fenced areas, while six years later, both parameters were higher in fenced areas.

Casasús I, Bernués A, Sanz A, Villalba D, Riedel J and Revilla R (2007). Vegetation dynamics in Mediterranean forest pastures as affected by beef cattle grazing. *Agriculture, Ecosystems & Environment* 121: 365-370.



### Annex: Field methods for species monitoring



## SPECIES & HABITAT MANAGEMENT ANNEX

## FIELD METHODS FOR SPECIES MONITORING

This annex gives a very brief summary of field methods for monitoring different taxa that are relevant for small and medium-sized conservation projects. To indicate the level of expertise and equipment required, each method is categorised as: ① (method fairly simple to use i.e. does not require formal training or specialist equipment), ② (method requires some training and/or specialist equipment), or ③ (method requires highly-specialised training and equipment).

More information on the methods in this annex can be found in the Cambridge handbook of ecological survey methods

<https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>





## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Fungi	Mapping or counting of fruiting bodies within study area during peak fruiting period. ①	Occurrence or counts of fruiting bodies within quadrats or strip transects. Distance-sampling along transects allows greater coverage, useful for rarer species. Fixed-point photos may help assess abundance. ①	Searches for fruiting bodies within a defined period may be useful for rarer species. ①			Important new approach for recording occurrence without requiring fruiting. ①
Lichens	Mapping or counting individuals possible where species occupies small area. Fixed-point photos may be used to monitor changes in % cover. ①	Counts or occurrence within cells of quadrat. Line-transects with distance sampling allows greater coverage and estimates density / true abundance. Fixed-point photos may be used to monitor changes in % cover. ①	Searches for individuals within a defined period may be useful for rarer species. ①			
Bryophytes	Mapping or counting individuals possible where species occupies small area. Fixed point photos can be used to assess changes in % cover or the number of colonies. ①	Visual estimates of cover or abundance possible within defined areas, quadrats or strip transects. Fixed point photos can be used to assess changes in % cover or the number of colonies. ①				
Aquatic plants	Mapping extent of particular species may be possible, for example using fixed-point photos. ①	Visual estimates of cover or abundance possible within defined areas, quadrats or strip transects. This can be visual assessment, fixed-point photos or from substrate samples of known area. ①	Timed water samples can provide estimates of phytoplankton abundance. ②		Colonisation of artificial substrates left in the water used to identify occurrence. ②	Samples of water can be used to identify occurrence of species. ③



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Vascular plants	Mapping or counting individuals only possible for small populations. Fixed point photos monitor changes in cover of the growth and survival of individual large plants. ①	Selected colonies could be monitored. Quadrats, strip-transects widely used to estimate abundance and cover. Line transects can be used to count individual plants. Fixed point photos monitor changes in cover of the growth and survival of individual large plants. ① Quadrats with pin frames provide more robust information on cover and structure. ②	Searches for individuals within a defined period may be useful for rarer species. ①	Marking individual plants can be used to monitor recruitment and mortality. ①		
Trees	Mapping or counting entire populations may only be feasible for small populations. Fixed point photos monitor changes in cover of the growth and survival of individual large plants. ①  Remote techniques such as LiDAR and aerial photography may allow all individuals within large areas to be counted, although it may be difficult to separate species in the majority of circumstances. ② ③	Populations can be monitored using quadrats, strip and line transects which are widely used to estimate localised abundance. Aerial or fixed-point photography can be used to count emergent canopy species (or those readily identified when flowering/fruitlet) and through time, to monitor the survival and recruitment of individual trees within a study area. Accompanying this with measurements of individual trees (such as the diameter at breast height), can provide information about population age structure. ①  Techniques using drones to survey canopy trees are in development. ③	Searches for individuals within a defined period may be useful for rarer species. ①	Trees can easily be measured and marked, allowing age-structure, survival rates and recruitment to be monitored. ①	Repeated monitoring of areas of ground of known area can be useful for seed predation/dispersal studies. ①	



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Corals	Aerial photography or satellite imagery can be used to map large-scale reef geomorphology. ②	Mapping techniques can be used to map cover of different species along transects (e.g. manta tow) or in quadrats (although physical quadrats can be challenging given vertical coral structure), whilst both video and still photography have been used to map coral along transects or in quadrats respectively. Alternatively, the line-point intercept method allows divers to record species occurrence at intervals along line-transects. Various scoring systems have been developed to score condition along transects. ②				
Odonata		Counts of exuviae provide index of adult abundance that can be linked to the quality of a site for supporting a viable population. Counts of adults within strip transects surveyed in good conditions, particularly along the waters' edge, can be used to monitor trends, and may work better for rare species, but may not separate source/sink populations. ①	Timed aquatic sampling (sweep netting or kick sampling) for larvae, and timed counts for adults surveyed in good conditions, where strip transects not possible. ①			
Butterflies		Quadrats or strip transects give egg or larval density. 5m wide strip transect surveyed in good conditions used as standard Butterfly Monitoring Scheme method in UK. ①	Timed counts for eggs / larvae can identify presence / give index of abundance. ①	Live-trapped adults, for example by searching for adults in suitable habitats with a hand-net, can be marked, and survival and dispersal monitored from recaptures. ②		



## SPECIES & HABITAT MANAGEMENT ANNEX

## FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Moths		Quadrats or strip transects give egg or larval density. 5m wide strip transect surveyed in good conditions used as standard Butterfly Monitoring Scheme method in UK. ①		Light trapping provides quantitative information on species abundance, and occurrence for rare species. Abundances between species not necessarily comparable depending on attraction to light. Pheromone traps can be used for specific species. Scented lures (sugaring and wine ropes) can also attract species. Live-trapped adults of larger species can be marked, and survival and dispersal monitored from recaptures. ②		
Other terrestrial invertebrates		Quadrats may be used for searches for specialist species where habitats can be identified. Some trapping devices are area-based, such as emergence traps. Strip transects may be used to monitor pollinating insects on flowers. Sweep nets can be used to infer relative abundance within a particular area. ①	Provides index of abundance for many species groups with complex or non-standard protocols. ①  Passive sound recording may detect insects with auditory displays, such as crickets and cicadas. ②	Artificial refugia can be used to attract individuals to count them e.g. for slugs and snails. Where appropriate, individuals may be marked allowing mark-recapture studies. ①	A wide range of lethal trapping approaches exist for different insect groups e.g. pitfall traps, water traps, malaise traps etc. and may be used to estimate abundance as the number of individuals caught per period of sampling. ① ②	
Other aquatic invertebrates		Vegetation samples may be taken and the number of individuals per unit of vegetation assessed. Counts of adults of some emergent insects within strip transects surveyed in good conditions, particularly along the waters' edge, can provide estimates of abundance e.g. for mayflies and stoneflies. ①	Timed aquatic sampling (sweep netting or kick sampling) can provide estimates of relative abundance. ①	Artificial refugia can be used to attract individuals to count them, and for some species, mark-recapture studies may be possible. Light traps may attract certain emergent insect groups, e.g. caddis flies. ②	Colonisation of artificial substrates left in the water used to identify occurrence. ②	Samples of water can be used to identify occurrence of species. ③



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Marine invertebrates		Line transects or quadrats can be used to count the abundance of large and detectable marine invertebrates, using distance sampling to estimate density. ②	Timed sampling can provide estimates of relative abundance or occurrence for less detectable species. ②	Artificial refugia can be used to attract individuals to count them, and for some species, mark-recapture studies may be possible. ②	Colonisation of artificial substrates left in the water used to identify occurrence. ②	
Fish in slow-flowing or still waters		Underwater counts can be made along transects or using point counts, allowing for distance sampling to correct for detectability. ②  Hydroacoustic sampling (sonar) estimates abundance of shoaling fish. Electrofishing can be used to estimate total population size using multiple catches between stop nets across a river and analysis using the removal method, or to provide an index of abundance based on a single catch. Note it is highly dangerous and requires training. ③	Counts from banks in shallow waters may provide a crude index of abundance, underestimated for most species. ①  Timed counts underwater will provide better estimates of relative abundance. ②	Wide range of fish-trapping methods available for mark-recapture studies or to index abundance. ① ②	Gill, seine and trawl netting, and angling, can be used to provide catch returns (fish caught per unit effort) as an index of population size. This may vary with season, conditions and migratory status. Effort may be difficult to record if from commercial fishing / angling data. ② ③	Techniques to identify species occurrence from water samples are being developed. ③
Fish in running waters		Underwater counts can be made along transects or using point counts, allowing for distance sampling to correct for detectability. ②  Hydroacoustic sampling (sonar) estimates abundance of shoaling fish. ③	Counts from banks in shallow waters may provide a crude index of abundance, underestimated for most species. ①  Timed counts underwater will provide better estimates of relative abundance. ②  Electronic counters can provide effective estimates for migratory fish through narrow channels / passes. ③	Wide range of fish-trapping methods available for mark-recapture studies, (dye or tagging) or to index abundance. Traps on weirs or fish ladders catch migrating individuals. ②	Angling can be used to provide catch returns (fish caught per unit effort) as an index of population size. This may vary with season, conditions and migratory status. Effort may be difficult to record. ②	Techniques to identify species occurrence from water samples are being developed. ③



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Marine fish		<p>Underwater counts can be made along transects or using point counts, allowing for distance sampling to correct for detectability. ②</p> <p>Hydroacoustic sampling (sonar) estimates abundance of shoaling fish. ③</p>	<p>Counts of large species from boats or shore (e.g. basking sharks) may provide an index of abundance. ①</p>	<p>Wide range of fish-trapping methods available for mark-recapture studies (dye or tagging), or to index abundance. ②</p>	<p>Gill, seine and trawl netting can be used to provide catch returns (fish caught per unit effort) as an index of population size. This may vary with season, conditions and migratory status. Effort may be difficult to record if from commercial fishing / angling data. ② ③</p>	
Amphibians		<p>Distance-sampling may be used to correct counts along transects to produce densities, although individuals hiding in refugia may be undetectable. ①</p>	<p>Many amphibians are active at night, so searching for individuals by torchlight in suitable habitat can provide an index of abundance, particularly of breeding individuals (on land or underwater). Given their sensitivity to environmental conditions and date, surveys should be conducted on ideal nights, or under a range of conditions. Searching of refuges during the day may also work. Underwater sweep netting may provide an index of adult and larval abundance, depending on time of year. Occurrence or an index of breeding abundance may be obtained from egg searches. ①</p> <p>Passive sound recording may detect species with auditory displays, such as many frogs and toads. ②</p>	<p>Fences and pitfall traps may be used to trap and intercept individuals traveling to or from a breeding site, and should be checked at least daily. Estimates of dispersing juvenile abundance from breeding ponds, or of egg abundance, may be used to estimate productivity / fecundity. Artificial refugia can be used to attract individuals to count them, either during hibernation or during the day. ①</p> <p>Underwater traps (e.g. funnel traps) can be submerged or partially submerged in marginal habitat, and used to catch individuals. They should be checked regularly (at least every 6 hrs) in warm weather. Live-caught amphibians may be suitable for mark-recapture studies to estimate abundance or survival, by photographing unique markings (e.g. belly marks), using skin stains (safe in some toads), or PIT tagging, (although this may increase the risk of disease transmission). ②</p>		<p>Techniques to identify species occurrence from water samples are being developed. ③</p>



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Reptiles		Transects of known length can be walked to count individuals, e.g. basking individuals. For some species it may be possible to correct for detection. ①	Timed transects can be walked to count individuals, e.g. basking individuals. ①	Artificial refugia can be used to attract individuals to count them. The precise nature of the refugia will vary with the environment. Refugia should be visited frequently during the main period of activity (7 times to determine occurrence and 15-20 times to estimate abundance). Fences and pitfall traps, or baited funnel traps, or baited funnel traps, may be used to trap and intercept individuals, and should be checked at least daily. ①  Mark-recapture studies may be undertaken to estimate abundance. Live-caught individuals may be suitable for mark-recapture studies by photographing unique markings (e.g. head marks on snakes), using nail polish / paint on scales, or PIT tags. ②		
Marine reptiles	Nests can be counted along breeding beaches. ①	Early morning transects along breeding beaches can be used to count turtle tracks, and those which end in nests give greater accuracy. ①				



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Birds	<p>Possible where individuals are concentrated (e.g. at breeding colony or non-breeding aggregation) and counted or photographed. ①</p>	<p>Territory mapping from repeat visits (usually 5-10) within known areas used to estimate the abundance of breeding birds based upon the interpretation of multiple maps. This doesn't work for non-territorial species. Indices of abundance can be derived from a smaller number of visits. Line-transects with distance sampling allow coverage of a greater area than area-based samples and work well in open habitats. Point-counts work better in closed habitats (e.g. woodland). ①</p> <p>High-definition aerial photography can be used for strip-transect surveys of larger species in open habitats (sea, freshwater, grassland). ②</p>	<p>Estimates of abundance using timed counts can be useful for rapid assessment of relative abundance. ①</p> <p>Passive sound-recording may be used to detect singing or calling birds. Researchers are developing algorithms for automatic identification from sound recording. Individuals of some species can be recognised from their song, enabling accurate estimates of abundance. ②</p>	<p>A range of methods exist for catching birds, ranging from mist-netting to trapping individuals on nests. Techniques require training and in many cases, licensing. Some of these can be standardised (e.g. constant effort site (CES) mist netting), allowing robust estimates of abundance to be derived. Ringing (banding) schemes are widely used for demographic studies in birds, allowing estimation of survival and recruitment. Some countries also run nest record schemes to monitor breeding success. ③</p>		
Bats	<p>Complete surveys of roosts possible when individuals emerge at dusk. ①</p> <p>Automatic devices may be used. Counts may also be undertaken at hibernation sites, although as usage varies with temperature and the availability of other sites, rarely can such counts be regarded as complete. ②</p>	<p>Line-transects may be used to record flying and foraging bats at night, using a bat detector to aid identification. Data will provide an index of relative abundance, but counts are highly variable depending upon date and conditions. ②</p>	<p>Passive sound recording may be used to detect and estimate relative abundance of many species, depending on the extent to which their sonograms are known. Algorithms are continually being developed to allow automated recognition. ②</p>	<p>Bat boxes may be installed and used to estimate relative abundance. Repeat visits are required as abundance may vary with conditions and date. Mist-netting may also be used with care to estimate occurrence and relative abundance. Techniques require training and in many cases, licensing. Ringing can be used to estimate abundance from mark-recapture techniques. ③</p>		



## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR SPECIES MONITORING



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Large diurnal mammals	Possible where individuals are concentrated (e.g. at breeding colony or non-breeding aggregation) and counted or photographed. ①	Line-transects with distance sampling allow coverage of a greater area than area-based samples and work well in open habitats and for low-density populations. ① For large species, aerial photography can be used for strip-transect surveys.	Estimates of abundance using timed counts can be useful for rapid assessment of relative abundance for common species. ① Camera traps can be deployed widely to estimate the frequency of occurrence and provide an index of abundance. ②	Individuals may be captured and marked using a range of techniques including recording unique marks, fur clipping (which only lasts a few weeks), using dyes and tagging. PIT tags and microchips are increasingly being used. ③	Mortality data from hunting or other lethal methods can be used to estimate trends in population size, or removal techniques analysis can be applied. ④	
Arboreal mammals		Breeding sites or other signs (e.g. nests or roost sites) may be counted within particular areas. Other signs, such as droppings, feeding signs, tracks and hairs may all be counted to infer an index of abundance. Line-transects with distance sampling allow coverage of a greater area than area-based samples but this is challenging in forest conditions. ①	Estimates of abundance using timed counts can be useful for rapid assessment of relative abundance for common species. ①  Passive sound recording has the potential to be used to detect and estimate relative abundance of vocal species. ②	Individuals may be marked using a range of techniques including recording unique marks, fur clipping (which only lasts a few weeks), using dyes and tagging. PIT tags and microchips are increasingly being used. ③	Mortality data from hunting or other lethal methods can be used to estimate trends in population size, or removal techniques analysis can be applied. ④	
Cryptic or nocturnal mammals	Possible where individuals are concentrated (e.g. at breeding colony or non-breeding aggregation) and counted or photographed. ①	Breeding sites (e.g. burrows) may be counted within particular areas. Other signs, such as droppings, feeding signs, tracks and hairs may all be counted to infer an index of abundance. Line-transects with distance sampling allow coverage of a greater area than area-based samples and work well in open habitats and for low-density populations. ① Spotlight counts at night can be effective for nocturnal or crepuscular species. ②	Estimates of abundance using timed counts can be useful for rapid assessment of relative abundance for common species. ①  Passive sound recording has the potential to be used to detect and estimate relative abundance of vocal species. Camera traps can be deployed widely to estimate the frequency of occurrence and provide an index of abundance. ②	Live trapping using a range of traps provide quantitative information on species abundance, and occurrence for rare species. Individuals may be marked using a range of techniques including recording unique marks, fur clipping (which only lasts a few weeks), using dyes and tagging. PIT tags and microchips are increasingly being used. ③	Mortality data from hunting or other lethal methods can be used to estimate trends in population size, or removal techniques analysis can be applied. ④	



TAXA	COMPLETE SURVEY	AREA-BASED SAMPLING	TIMED SAMPLING	LIVE TRAPPING	REMOVAL TRAPPING	EDNA
Marine mammals	Where individuals are concentrated (e.g. at breeding colony or non-breeding aggregation), they may be counted or photographed. ①	Aerial photography can be used for strip-transect surveys to provide estimates of relative abundance. ②	Counts of cetaceans from boats or shore may provide an index of abundance. ②  Acoustic recording may detect cetaceans over large distances, and may be used to identify individuals. ③	In species with individual markings, photography may be used to monitor abundance and demographic parameters. ②		

## SPECIES & HABITAT MANAGEMENT ANNEX

## FIELD METHODS FOR SPECIES MONITORING





## SPECIES & HABITAT MANAGEMENT ANNEX

### SAMPLING APPROACHES FOR EVALUATING CHANGES IN SPECIES STATUS

**Complete counts** - In some cases it will be possible to count accurately all the individuals within a population. This is most likely to be achievable where the individuals are easily detected and concentrated within a relatively small area. Complete surveys can be undertaken using counts in the field (although even counting by an observer can be subject to a degree of error), or from images, such as fixed-point photographs or aerial photographs, providing a more repeatable approach. When undertaking complete surveys for a mobile species, it is important to do so at a time when the individuals will be concentrated within the count location, such as at breeding colonies or roost sites; otherwise counts will have to be corrected for the likely proportion of the population present. For species with multiple life-stages, it is important to identify the most effective life-stage to count, which is often the adult stage.

**Area-based sampling** - (e.g. quadrats, fixed transects). Area-based sampling approaches involve sampling or surveying defined areas, from which the results are extrapolated to unsurveyed areas. Areas may be surveyed using a variety of techniques from sample-based approaches such as point counts and line-transects, mapping methods such as common bird census techniques, and complete counts using fixed-point photography. To identify true abundance it may be necessary to correct for imperfect detectability, such as using distance sampling or using data from repeat visits for occupancy modelling. It is important that the locations of the samples are randomly distributed across the area of interest, or are appropriately stratified, in order to generate robust results. If species abundance is highly variable between locations, it is important to ensure that there are sufficient samples to produce robust population estimates. Correctly delimiting the sampling

area is also important to ensure that all potentially suitable areas are covered. To assist with design, it may be helpful to conduct some initial trials to estimate mean abundance and variance across a range of sites, before determining the sample size and power of any final approach. Modelling the results appropriately will also be important in order to estimate uncertainty correctly.

**Timed sampling** - The abundance of species with low detectability, that are widely dispersed, that require searching using methods that are difficult to standardise, or for which abundance cannot be easily related to a particular area, may be best estimated using timed counts. Here the number of individuals is recorded per unit of time, rather than per unit area. This makes it difficult to use this approach to estimate true population size, but it can be used to estimate relative abundances. Examples include counting migratory individuals moving through particular bottlenecks, or recording encounters using passive devices such as camera traps and listening devices. Passive devices may be particularly valuable for detecting the occurrence of rare and difficult to detect (particularly nocturnal) species. As there is likely to be temporal variation in the numbers of individuals recorded, either within a day, or across a season, it is important to ensure that any samples are appropriately timed within that range, and that this is done in a comparable way between sites or visits. If an entire population passes through a location during a particular period, then an appropriate sample of timed counts may estimate true population size.

**Live trapping** - (trapping, netting etc.). It is possible to live-trap individuals of many species using a wide range of different methods, including mist-netting birds, trapping small mammals,





## SPECIES & HABITAT MANAGEMENT ANNEX

### SAMPLING APPROACHES FOR EVALUATING CHANGES IN SPECIES STATUS

netting fish, and light-trapping nocturnal insects. Trapping sessions can be used to provide estimates of relative abundance in much the same way as the timed samples discussed above. As with all trapping techniques, care has to be taken that the efficacy of the trap does not vary between habitats or locations, and therefore that such estimates of abundance are not subject to bias as a result of other factors. Where it is possible to mark individuals, for example by using rings (bands) on birds, PIT tags, microchips in other vertebrates or colour marks on some invertebrates, or to recognise individuals from their appearance, then mark-recapture techniques can be used to estimate the size of the population from the ratio of the number of individuals caught and marked which are then recaptured in a subsequent sample. There can be challenges in defining the area which the population of sampled individuals is from, and the extent to which a particular population is “open” or “closed”, or includes transient or mobile individuals, and the extent to which the “trappability” of individuals varies between then, or even after capture. However, analytical solutions exist for at least some of these issues, allowing this approach to provide relatively robust estimates of abundance that should exclude many potential biases. It can be the most effective way of estimating the abundance of cryptic species, although it is resource-intensive relative to other survey methods. Care needs to be taken that trapping does not adversely affect the survival or behaviour of the individuals that are caught.

**Removal trapping** - A greater range of trapping approaches is available if individuals do not have to be caught alive. These can be used to provide estimates of relative abundance in much the same way as live-trapping samples or timed samples as outlined

above, based purely on the number of individuals caught. Thus, invertebrate sampling techniques such as pitfall traps or water traps, which generally involve the death of the individuals caught, or snap traps for small mammals, are widely used to estimate the relative abundance of groups such as these. If such trapping approaches are carefully planned, or specific methodologies are adopted, then the data can be used to estimate abundance more robustly, for example from the decay in the numbers of individuals trapped through time.

**eDNA** - The field of documenting the occurrence or even the abundance of species within particular areas by means of the extraction of DNA from environmental or biological samples is currently expanding rapidly. Broadly speaking, samples from the environment, such as water or soil, are collected and then processed to extract the DNA, which is then multiplied and replicated sufficiently for processing. The resulting DNA profiles can then be compared with databases of known species in order to identify the occurrence of those species within the environment. This can prove particularly effective for monitoring taxa that are difficult to survey, such as amphibians and fish in freshwater environments, or micorrhizal fungi in the soil. Alternatively, these approaches can be used for rapid processing of biodiversity samples, such as those obtained by destructive sampling, including invertebrate samples: samples can be homogenised and processed to identify the species present. This is an emerging technology which may become more relevant for small and medium-sized conservation projects as it develops further.



### Annex: Analytical issues when estimating abundance, distribution, survival and reproduction



## SPECIES & HABITAT MANAGEMENT ANNEX

## ANALYTICAL ISSUES WHEN ESTIMATING ABUNDANCE, DISTRIBUTION, SURVIVAL AND REPRODUCTION

**Estimating distribution** - Information about species distribution may be gained from a range of sources, from unstructured species records to the results of standardised surveys. There are particular problems associated with the interpretation of unstructured records, as the distribution of these may be as much a function of where people have looked for the species as its actual distribution. Qualitatively, the location of records can be used to estimate a species range, and where it has particular habitat or elevation associations, to describe likely occurrence within that range from maps of suitable habitat extent. Where possible, it will be preferable to use statistical modelling approaches (e.g. species distribution models, occupancy models) to develop quantitative predictions from these records, which can be extrapolated across the remainder of the project area, although in cases where survey effort is non-random, care needs to be taken to ensure that this is done robustly.

If at all possible, it is advisable to make use of information about the absence or inferred absence of a species to improve model predictions. This can be done using the occurrence of other species likely to be recorded at the same time as the focal species, to identify null records or to indicate survey effort. A range of statistical techniques exists for modelling species distributions from a series of occurrences and from underlying environmental and spatial data. These techniques will produce the most robust predictions when based upon a well-structured survey, where effort is standardised or is well measured so it can be accounted for.

Ultimately, a rigorous survey across an entire project area (e.g. an atlas approach) will provide the best distribution data without the need for statistical inference.

**Estimating abundance** - Abundance is more challenging to estimate than occurrence. For many species, imperfect detectability will reduce the number of individuals counted relative to the true number present (see Borchers et al. 2001 for a consideration of these issues). A range of potential approaches exists to account for this potential for under-estimation, ranging from distance sampling to mark-recapture, each of which is accompanied by its own assumptions and challenges. Providing that comparable methods are used to compare variation in abundance in space and time, these issues should have a limited impact on the ability to monitor project outcomes compared to a situation where the monitoring methods vary, either through time or between sites.

Often extrapolation will have to be made from sample data to unsurveyed locations. Final estimates should be associated with an estimate of error (uncertainty) in order to identify whether changes observed between repeat surveys are likely to be meaningful. Any such extrapolation should take account of potential biases in the location of samples.

**Estimating change** - Changes in the occurrence or abundance of a species may be inferred from unstructured data, or measured more accurately from the collection of specific monitoring data. The approaches described above for estimating distribution and abundance may be used separately to assess occurrence and population size in two or more time periods, and to quantify change; or this may be more elegantly achieved in a single model





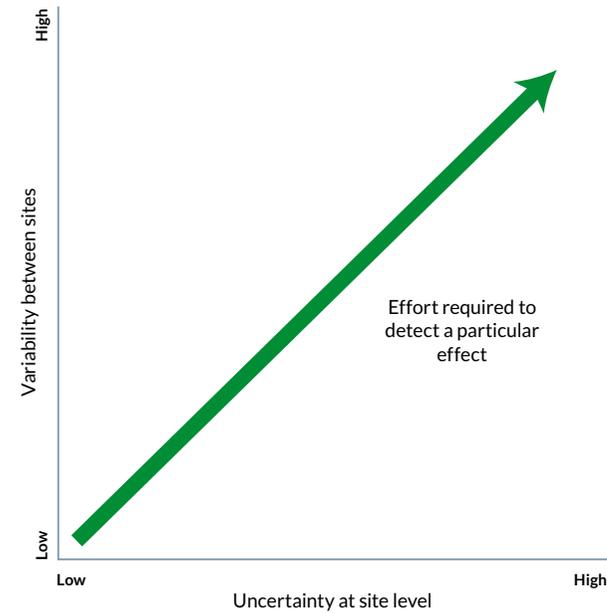
## SPECIES & HABITAT MANAGEMENT ANNEX

### ANALYTICAL ISSUES WHEN ESTIMATING ABUNDANCE, DISTRIBUTION, SURVIVAL AND REPRODUCTION

to test for statistical differences between time-periods. In order to attribute any observed changes to conservation intervention, it will be necessary to examine differences in trend between site(s) subject to conservation intervention and control site(s).

Formal analysis of change should take account of the likely power of such monitoring to detect significant change. This will be a function of count accuracy, natural variability and the magnitude of impact of the conservation intervention. In general, a larger sample of data is required where count accuracy is low, natural variability is high, or the magnitude of impact is low. In order to assess this, we would recommend conducting a pilot study to identify the most effective monitoring regime for a given resource, in order to detect a particular magnitude of effect.

Figure 1. The sampling effort required to detect a particular effect increases with both uncertainty / error at the site level (where samples are taken from) and the degree of variability between sites.





## SPECIES & HABITAT MANAGEMENT ANNEX

## FIELD METHODS FOR HABITAT MONITORING

### Annex: Field methods for habitat monitoring

This annex gives a very brief summary of field methods for monitoring different habitat types that are relevant for small and medium-sized conservation projects. To indicate the level of expertise and equipment required, each method is categorised as: **1** (method fairly simple to use i.e. does not require formal training or specialist equipment), **2** (method requires some training and/or specialist equipment), or **3** (method requires highly-specialised training and equipment).

More information on the methods in this annex can be found in the Cambridge handbook of ecological survey methods <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf>





## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR HABITAT MONITORING

HABITAT TYPE	HABITAT CHARACTERISTIC				
	EXTENT	COMPOSITION	STRUCTURE	REGENERATION	EFFECTS OF EXTERNAL PRESSURE
Forest, woodland and scrub	<p>Satellite imagery to measure area of individual forest stand and boundaries. ②</p> <p>Aerial photography/drones to measure extent and location of open spaces. ③</p>	<p>Plots, transects or plotless sampling to measure changes in species composition, richness and diversity. ①</p> <p>Use distance sampling to monitor specific indicator species or trees in more open habitats. ②</p>	<p>Plots or plotless sampling to measure horizontal and vertical structural diversity, thinning extent and deadwood. ①</p>	<p>Aerial photography/drones measure extent and location of open spaces. ③</p> <p>Measure seedling regeneration and composition using ground survey methods. ①</p>	<p>Use plots to measure effects of harvesting timber and non-timber forest products (NTFPs). Measure height, condition etc. before &amp; after harvesting and within/outside areas of harvesting. ③</p> <p>Measure grazing pressure by comparing difference in tree mortality/condition between grazed and ungrazed areas. ②</p>
Grassland	<p>Satellite imagery to measure extent of area. ②</p> <p>Aerial photography or drone imagery. ③</p> <p>Quadrat surveys for specific vegetation types. ①</p>	<p>Use line transects or quadrats to measure species richness, diversity and/or presence/absence of indicator species. ①</p>	<p>Quadrats/point samples to measure height, density and percentage cover in different height categories. ①</p>		<p>Use vegetation height/condition to monitor grazing intensity. ①</p>
Mountain habitats	<p>Satellite imagery to measure extent of area. ②</p> <p>Aerial photography/drones to measure extent and location of area. ③</p> <p>Quadrats/transects to measure exposed rock, scree, bare soil or snow cover. ①</p>	<p>Quadrats or transects to measure species/species communities characteristic of the habitat, species composition and/or richness. ①</p> <p>Total counts, quadrats or transects to measure presence/absence of indicator species. ①</p>	<p>Quadrats/point samples to measure height, density and percentage cover in different height categories. ①</p>		<p>Use vegetation height/condition to monitor grazing intensity. ①</p> <p>Use occurrence/indicator species to monitor changes in nutrient status. ②</p>





## SPECIES & HABITAT MANAGEMENT ANNEX

### FIELD METHODS FOR HABITAT MONITORING

HABITAT TYPE	HABITAT CHARACTERISTIC				
	EXTENT	COMPOSITION	STRUCTURE	REGENERATION	EFFECTS OF EXTERNAL PRESSURE
Still/slow-flowing wetlands	<p>Satellite imagery to measure extent of area. ②</p> <p>Aerial photography/drones measure extent and location of area. ③</p>	<p>Quadrats or transects to measure species/species communities characteristic of the habitat, species richness, diversity and/or presence/absence of indicator species. ①</p>	<p>Fixed point survey to measure vegetation height and/or invasion by non-wetland species. ①</p>		<p>Use macroinvertebrate indicator species to measure pollution. ②</p>
Rivers & streams	<p>Satellite imagery to measure extent of individual area. ②</p> <p>Aerial photography/drones to measure extent and location of area. ③</p>	<p>Use macroinvertebrate indicator species to measure water chemistry. ②</p> <p>Quadrats or transects to measure bankside and emergent vegetation species richness, and abundance of vegetation and macrophytes. ①</p>	<p>General surveys, quadrats or transects to measure features of river morphology: channel width, shape, pools etc. ①</p> <p>Fixed point survey, transect or quadrat methods to measure vegetation height and/or coverage of banks. ①</p>		<p>Use macroinvertebrate indicator species to measure pollution. ②</p>
Coral reefs		<p>Belt transects or long swim method to survey indicator species. ②</p>	<p>Point intercept transects to measure cover of sessile benthic invertebrates. ②</p>	<p>Before/after or Before-After Control-Impact (BACI) belt transects or long swim method to survey cover/indicator species. ③</p>	



## SPECIES & HABITAT MANAGEMENT ANNEX



### SAMPLING APPROACHES FOR HABITAT MONITORING

#### Annex: Sampling approaches for habitat monitoring

##### Plots

Plots are pre-defined square, rectangular or circular areas that are used to delineate an area of interest. These plots are then sampled at one or more subsequent time points to provide data on changes taking place. Care must be taken when using permanent plots to estimate wider-scale changes. Unrepresentative plots, or too few plots, will give unreliable estimates of compositional and structural change, so it is important to define the locations of plots in a way that minimises bias (preferably by locating them randomly). This can be challenging in remote areas, but it is important that less accessible areas are sampled sufficiently, as habitat quality will typically decline with ease of access.

Larger plots (>0.25 ha) are (1) better for validating satellite imagery, (2) associated with lower variance between plots, (3) produce more representative estimates of vegetation parameters, (4) are better for measuring small-scale ecological processes, and (5) suffer less from “edge effects” (because they have a lower perimeter : area ratio).

Smaller plots (<0.25 ha) provide (1) better landscape-level representation, but suffer from (2) higher random variation between plots, (3) less representative vegetation parameters, and (4) greater edge-effects.

For further information, see Condit R (1996) <http://www.stri.si.edu/sites/publications/PDFs/Condit.TREE1995.pdf>.

##### Plotless sampling

This is generally a much faster method for estimating attributes than using permanent or temporary plots. However serious bias can result if the distribution of species is not random (i.e. if it is either clumped or uniformly distributed).

Types of plotless sampling include:

“Bitterlich sampling” - Most commonly used for estimating tree density, but any other information that can be recorded about individual trees can be measured and averaged. It is rapid and unbiased, provided that the correct Basal Area Factor prism is selected. Too many trees counted systematically underestimates the basal area; too few counted generates too much error.

For full details see [http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/Bitterlich\\_sampling](http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/Bitterlich_sampling).

Other plotless methods include the Nearest Individual method, the Point-centred Quarter method and the T-square sample method. (Full details of these methods can be found in pages 233-234 of the Cambridge Handbook of Biodiversity Methods).





## SPECIES & HABITAT MANAGEMENT ANNEX

### SAMPLING APPROACHES FOR HABITAT MONITORING

#### Transects

Transects are linear plots that are usually straight, but may follow a natural course such as an existing footpath or river. They can be treated as a long thin plot, e.g. 1 km long by 20 metres wide, and only features within the transect boundary are counted and measured. Distance sampling is a form of transect which is useful for assessing features of high quality habitat that are too rare to be effectively sampled using plot methods, e.g. frequency of large trees, or particular non-timber forest products. The method involves measuring the distance of observed trees or other features from a straight transect line. Formulae, or the software DISTANCE™, are used to calculate density.

#### Monitoring indicator species

This involves monitoring species that are characteristic of particular habitats. Their abundance (or in some cases, presence/absence) can act as an indicator of habitat condition, for example the perennial plants *Mercurialis perennis* and *Anemone nemorosa* are indicators of ancient woodland in a European context, while the abundance of “disturbance-responsive species” (such as grasses, herbs, ferns, bamboo, lianas and pioneer tree species) can be useful for quantifying forest degradation. The Annex [Sampling approaches for evaluating changes in species status](#) provides specific guidance on monitoring species abundance.

#### Dominance indices

These can be used to provide a statistical measure for tracking change over time and/or to make comparisons between sites. Dominance indices are very quick to assess but they rely on having staff who really understand the underlying principle and have good experience with the range of different abundances of disturbance-responsive species.

Typically, habitat condition in forests is assessed by quantifying the number of trees within particular size classes of “Diameter at Breast Height” (DBH). The thresholds for these classes must be calibrated to the forest type and condition in order to optimise sensitivity and to be able to detect change over time: if they are too high, few trees will be recorded in the class; if they are too low, the effort required to count all the trees within the size class will be excessively time-consuming.

#### References

The Cambridge Handbook of Biodiversity Methods - Survey, Evaluation & Monitoring provides an overview of methods for all taxa - <https://sunsetridgemsbiology.wikispaces.com/file/view/Biodiversity+Handbook.pdf> .

Swinfield T and Harrison RD (2016). Optimising forest resource assessments for ecosystem restoration: [ftp://ftp.biotrop.org/International\\_Conference\\_on\\_Tropical\\_Biology\\_2015/ORAL\\_PRESENTATION/SUB%20TEMA%201/S1ST1-O-02\\_Tom%20Swinfield\\_lowres.pdf](ftp://ftp.biotrop.org/International_Conference_on_Tropical_Biology_2015/ORAL_PRESENTATION/SUB%20TEMA%201/S1ST1-O-02_Tom%20Swinfield_lowres.pdf)

The Gottingen Forest Inventory Wiki is an excellent source of information regarding forest plot design and monitoring - [http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/Main\\_Page](http://wiki.awf.forst.uni-goettingen.de/wiki/index.php/Main_Page) .

Gill D and Daltry J (2014). Brief 3: How to make a monitoring plan for threatened tree species. Global Trees Campaign <http://globaltrees.org/wp-content/uploads/2015/03/GTC-Brief-3-monitoring-plan-lo-res.pdf> .



## GLOSSARY

TERM	DEFINITION
Action	A specific activity or process undertaken over a specific period of time by a project in order to bring about change.
Assumption	Expression of the logic underpinning the links between different stages of a project (e.g. why a particular output could be expected to result in a subsequent outcome) or the external factors which could positively or negatively influence project results.
Attribution	Ascribing a causal link between observed changes and project actions, taking into account the effects of other actions and possible confounding factors.
Baseline	Information collected before or at the start of a project that provides a basis for planning and/or assessing subsequent progress and outcomes/impacts.
Control group/site	A group or site that is not targeted by the actions of the project being evaluated.
Counterfactual	A hypothetical estimate of what would have happened (or not) had the project not been implemented.
Evaluation	The systemic assessment of an ongoing or completed project or project action. This involves looking at specific elements of the project to see what difference the project has made and what lessons have been learnt.
Evaluation design	The methodology selected for collecting and analysing data in order to reach conclusions about project results.
Impact	The long-term change(s) brought about by the project's action(s).
Indicator	Quantitative or qualitative variable that provides a reliable means of measuring a particular outcome or impact.
Logic model	Often a visual representation, this provides a "road map" showing the sequence of related events connecting the need for a planned project with the project's desired outcomes and results.
Logical framework (Logframe)	A management tool used to improve the design and evaluation of actions that is widely used by development agencies. It is a type of logic model that identifies strategic project elements (inputs, outputs, outcomes, impact) and their causal relationships, indicators, and the assumptions or risks that may influence success and failure.
Monitoring	The performance and analysis of routine measurements to detect changes in project status. Used to inform the project team about the progress of an ongoing action or project, and to detect problems that may be addressed through corrective actions.
Outcome	The change(s) brought about by the project's actions.
Output	What is directly produced by the project's actions.

## GLOSSARY

TERM	DEFINITION
Qualitative data	Observations or information expressed using non-numerical terms rather than numerical terms (e.g. observations, answers to open questions, written, audio, video or other visual evidence).
Quantitative data	Information that can be expressed in numerical terms, counted, or compared on a scale.
Recommendations	Proposals based on findings and conclusions that are aimed at enhancing the effectiveness, quality or efficiency of an action.
Theory of Change	A management tool that presents the logic of a project or programme in a diagrammatic form. It links impacts and higher-level objectives to intermediate and lower-level objectives. The diagram (and related description) may also indicate main actions, indicators, and strategies used to achieve the objectives. It may also outline the main assumptions that must remain true in order for the project to work, and the potential risks to success.
Threat reduction outcome	Outcome relating to the reduction or mitigation of a threat. Typically it is the final change that needs to happen in order to impact a conservation target.
Stakeholders	Entities (governments, agencies, companies, organisations, communities, individuals, etc.) that have a direct or indirect interest in the project and any related evaluation.
Target(s)	The specific individuals, groups, species, sites or organisations for whose benefit the project/project action is being undertaken.



**prism**

PRISM - TOOLKIT FOR EVALUATING THE OUTCOMES & IMPACTS OF SMALL/MEDIUM-SIZED CONSERVATION PROJECTS

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