Evaluating an Evaluation Method

Testing the Ranked Outcomes Framework using a community conservation case study in Tanzania

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Contents
List of Tables ........................................................................................................................................ iii
Abbreviations ........................................................................................................................................ v
Abstract ................................................................................................................................................ vi
Acknowledgements .............................................................................................................................. vii
1. Introduction ....................................................................................................................................... 1
   1.1 Aims and objectives ...................................................................................................................... 2
      1.1.1 Overall aim .......................................................................................................................... 2
      1.1.2 Research objectives .............................................................................................................. 2
2.0 Background ...................................................................................................................................... 4
   2.1 The Role of Evaluation in Conservation ....................................................................................... 4
      2.1.1 What makes a good evaluation? ............................................................................................ 7
   2.2 Integrated conservation and development projects ....................................................................... 8
   2.3 Introducing the case study .......................................................................................................... 11
      2.3.1 The Eastern Arc Mountains of Tanzania .......................................................................... 11
      2.3.2 Livelihoods initiatives in Tanzania ..................................................................................... 12
      2.3.3 Eastern Arc Mountains Conservation Endowment Fund (EAMCEF) .................................. 13
      2.3.4 Study area ........................................................................................................................... 13
      2.3.5 Study villages ....................................................................................................................... 14
      2.3.6 Projects for evaluation ......................................................................................................... 15
3.0 Methods .......................................................................................................................................... 17
   3.1 Applying the Ranked Outcomes framework ............................................................................... 17
   3.2 Procedures .................................................................................................................................. 18
      3.2.1 Village procedures ................................................................................................................ 18
      3.2.2 Pilot activities ........................................................................................................................ 19
      3.2.3 Statistical analyses ............................................................................................................... 19
   3.3 Independent Evaluation (IE) ...................................................................................................... 19
      3.3.1 Outcome selection and prioritisation .................................................................................... 19
      3.3.2 Kappa Statistic of inter-rater agreement .............................................................................. 19
      3.3.3 Independent Evaluation: outcome assessment .................................................................... 20
   3.4 Villager Evaluation (VE) ........................................................................................................... 21
      3.4.1 Statistical analysis to test three aspects of the method ....................................................... 23
   3.5 Constraints and uncertainties .................................................................................................... 24
4.0 Results ............................................................................................................................................ 25
# 4.1 Independent Evaluation

- **4.1.1 Independent Evaluation: outcome prioritisation** ........................................... 25
- **4.1.2 Independent Evaluation: overview of interviews and observations** ............... 26
- **4.1.3 Independent Evaluation: project scores** ..................................................... 31

# 4.2 Villager Evaluation (VE)

- **4.2.1 Villager Evaluation: outcome prioritisation exercise and Kappa agreement** ........ 32
- **4.2.2 Villager Evaluation: survey respondent backgrounds** .................................. 33
- **4.2.3 Villager Evaluation: project results** ............................................................ 34
- **4.2.4 Villager Evaluation: statistical analysis to validate three aspects of the method** ... 35

# 4.3 Comparing the results of the two approaches

- ............................................................................................................................... 37

# 5.0 Discussion

- .................................................................................................................................. 38

# 5.1 Evaluating the Evaluation method: how did RO perform?

- **5.1.1 Breadth of outcomes** .................................................................................. 38
- **5.1.2 Incorporating experimental / quasi-experimental analysis into the RO framework** .... 39
- **5.1.3 Fit with adaptive management** ...................................................................... 40

# 5.2 Considerations for EAMCEF

- .................................................................................................................................. 40

# 5.3 Recommendations

- **5.3.1 Ranked Outcomes: future application and research** ....................................... 43
- **5.3.2 EAMCEF recommendations** ......................................................................... 44
- **5.3.3 Concluding remarks** .................................................................................... 44

# References

- .................................................................................................................................. 46

# Bibliography

- .................................................................................................................................. 51

# Appendices

- .................................................................................................................................. 53
List of Figures

Figure 2.1 Based on Guba and Lincoln’s (1989) “Fourth Generation Evaluation”, this illustration paraphrases the four facets of evaluation: measurement, description, judgement, participation… 4

Figure 2.2 IUCN’s Framework for Assessing the Management Effectiveness of Protected Areas (Hockings et al., 2006) ……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………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Table 3.2 Socio-demographic characteristics of focus group participants .......................... 21

Table 3.3 Table showing numbers of survey respondents in each village in four ways: as a total (n=132), as a percentage of total population (EAMCEF, February 2012) and numbers of each gender ........................................................................................................................................ 22

Table 3.4 Questions and statistical tests to be applied to VE data set to establish parameters for inclusion in future research .................................................................................................................................................... 23

Table 3.5 Summary of results for Villager Evaluation Outcomes Kappa statistic of agreement analysis. Fleiss Kappa (1981) is shown for the individual categories and overall ........................................................................................................... 31

Table 4.1 Kappa statistic of random agreement for IE prioritisation activity. Kappa statistic is applied to each outcome category and overall ........................................................................................................................................ 25

Table 4.2 Independent Evaluation results, ordering projects by best to worst achievement. Each category can score maximum 55 points. Theoretical maximum score of 275 (due to 275 positive points and zero negative ones). Numbers in brackets show the number of outcomes achieved per category. ........................................................................................................................................ 31

Table 4.3 Summary of results for Villager Evaluation Outcomes Kappa statistic of agreement analysis. Fleiss Kappa (1981) is shown for the individual categories and overall ........................................................................................................... 32

Table 4.4 Table showing the frequency with which respondents were aware of numbers of projects in their village. Number of projects known could be between 0 and 5 (n = 132, mean = 3.88, SD = 1.15). ......................................................................................................................................................... 33

Table 4.5 Respondent awareness and involvement in specific projects. Overall numbers reflect the total number of participants and number involved. Project numbers do not add up to the overall total as respondents can be aware and involved in multiple projects. Overall numbers involved calculated based on involvement in at least one project. ........................................................................................................... 34

Table 4.6 Comparison of project results between Independent Evaluation and Villager Evaluation using project rank order (1-6) ........................................................................................................................................ 37

Table 5.1 Table showing Return on Investment of EAMCEF projects in terms of IE points achieved per pound spent. Expenditure per village is achieved by dividing the amount spent by the number of villages who received the programme. The cost of each point is calculated by dividing the amount spent by the number of Independent Evaluation points scored by a project. ........................................ 42
**Abbreviations**

Bees – Beekeeping project  
Boundary – Boundary management project  
Goats – Dairy Goat husbandry project  
EAM – Eastern Arc Mountains  
EAMCEF – Eastern Arc Mountains Conservation Endowment Fund  
FBD – Forestry and Beekeeping Division. Part of the Tanzanian Ministry of Natural Resources and Tourism  
Fish – Fish farming project  
Fuel – Fuel efficient stove project  
FG – Focus group  
ICDP – Integrated Conservation and Development Project  
IE – Independent Evaluation  
MEA – Millennium Ecosystem Report  
PA – Protected area  
Rabbits – Rabbit farming project  
RO – Ranked Outcomes methodology  
Trees – Tree planting project  
TZS – Tanzanian Shillings  
UNDP – United Nations Development Fund  
VE – Villager Evaluation
Abstract
Evaluation of conservation is critical to meeting the challenge posed by the biodiversity crisis. Conservationists need to understand which interventions work and how to improve them in order to invest limited funds wisely.

This thesis tests a recently published evaluation methodology called “Ranked Outcomes” using a set of integrated conservation and development projects (ICDPs) implemented in communities adjacent to the Uzungwa Scarp Forest Reserve (USFR), in the Tanzanian Eastern Arc Mountains. ICDPs, popularised by a moral and practical need to collaborate with local communities, have long been debated due to their unproven conservation benefits.

By testing the method in two ways, this study finds that it is a flexible framework that defines the terms of the evaluation for all stakeholders from the outset. It can be scaled to be used for more rigorous impact assessments, or where real world issues present themselves such as low quantities of data, it is structured enough to inform an adaptive management approach as well as future monitoring and evaluation agendas. It has identified opportunities for improvement within the projects reviewed, which include: imposing conditionality, adjusting scale and scope of projects and a need for rigorous monitoring to quantify the conservation impact on USFR.
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At the same time, this work would not have been possible without the contribution of the District: both in terms of the generous support from the District Executive Director and his team of super heros (special mentions go to Mwita, Peter, Naima, Katherine and Kamara) and the warm welcome and willing participation by literally hundreds of villagers; for this I am extremely be grateful.

Finally, this thesis is dedicated to Melau. May you always prosper.
1. Introduction

In spite of the billions of pounds spent every year on nature conservation, there is still a gap in the funding required to address the biodiversity crisis (Castro & Locker, 2000; IUCN, 2010). Meanwhile, the world’s biodiversity is continuing to decline at an alarming rate (IUCN, 2005). Critical evaluation of what works in conservation is required if conservationists are to address the threat of mass extinctions within the limited budget available (Brooks et al., 2009; Balmford & Whitton, 2003).

Evaluation is defined as “the judgement of the status/condition or performance of some aspect of management against predetermined criteria (usually a set of standards or objectives)” (Hockings et al., 2006). Evaluation is desirable to focus spending on initiatives that work, demonstrate progress in conservation to funders and the world at large, and learn from experiences to improve methodologies. In spite its criticality, there is a lack of investment in evaluation in conservation (IUCN, 2005). Some commentators attribute this to a “lack of culture of evaluation” (Redford & Taber, 2000). Literature reviews show that the level of evaluation varies by type of project (Brooks et al., 2009) and that complexities of conducting evaluation in the field are manifold, such as being able to prove the additional benefits derived from a specific initiative due to spill over effects (where undesirable activities are shifted elsewhere) and lack of control scenarios for comparison (Ferraro & Pattanayak, 2006).

This complexity is particularly true of Integrated Conservation and Development Projects (ICDPs), where the conservation impact is often indirect. ICDPs seek to conserve through socio-economic development to reduce dependency on natural resources. They do so by working with local communities to compensate for lost livelihoods due to an area being protected. This may be through providing in-kind rewards, introduction of alternative livelihoods or increasing the value of the protected area, for example through ecotourism initiatives (Hill, 2011).

Conservation initiatives that collaborate with local communities have been popularised by the recognition that the traditional “fences and fines” approach to conservation alone is not practicable or morally desirable (Wilshusen & Brechin, 2002). There is a need to find sustainable options for not only species and habitats, but also the local people who depend on the natural resources provided in the area of interest. The complexity of the relationship between poverty alleviation and conservation mean that inevitably trade-offs have to be made to realise the two objectives (Adams et al., 2004). 20 years ago ICDPs were viewed as a “promising”, if controversial means to address this challenge (Brandon & Wells, 1992). Today, they remain a thorny issue due
to unproven conservation benefits (Salafsky, 2011). Despite this, there are many such projects being implemented, often under the more fashionable banner of “community based conservation”, or “payments for ecosystem services”, but their conservation impact remains less understood than more traditional protected area strategies (Brooks et al., 2009).

This study tests a recently developed evaluation methodology, called “Ranked Outcomes” (Howe & Milner-Gulland, 2012) using a programme of ICDPs in the Eastern Arc Mountains in Tanzania as a case study. The projects were funded by the Eastern Arc Mountains Conservation Endowment Fund (EAMCEF). EAMCEF was established in 2006 as part of a joint initiative between the Global Environment Facility (GEF), the World Bank and the Tanzanian Government to provide conservation funding for the Eastern Arc Mountains (EAM), a biodiversity hotspot of considerable significance. The initiatives form part of EAMCEF’s overall strategy to “conserve biodiversity through sustainable development” (Forestry & Beekeeping Division, 2006). They include: beekeeping, dairy goat husbandry, fish farming, fuel efficient stoves, rabbit farming, and tree planting. The method is tested in two different ways: firstly using the approach as originally designed and secondly evolving it to be based on the opinions of important stakeholders: the recipient communities. By testing the method in this way, this study contributes to the conservation literature by both evaluating a new evaluation framework and using the lessons learned to make recommendations regarding ICDP implementation that are pertinent to EAMCEF and similar practitioners.

1.1 Aims and objectives

1.1.1 Overall aim
To test the Ranked Outcomes (RO) evaluation methodology (Howe & Milner-Gulland, 2012), by evaluating the success of six ICDPs funded by EAMCEF. It will do this at two different levels: 1) conducting an independent evaluation of the interventions; and 2) varying the method to conduct a villager-led evaluation of the interventions. In doing so, this study not only provides insight into the application of the methodology for ICDPs, but also the usefulness of putting beneficiary communities front and centre in the evaluation process.

1.1.2 Research objectives
1. Complete a preliminary evaluation of the projects in the case study;
2. In doing so, identify the strengths and weaknesses of the method in the context of evaluating these projects;
3. To understand the local peoples’ perceptions of the same projects and identify some of the factors that may influence perceived project results;
4. Validate the usefulness of the villager evaluation in comparison to the independent evaluation;

5. Using the insights gleaned, make recommendations for future application of RO and summarise the lessons learned for EAMCEF.
2.0 Background

2.1 The Role of Evaluation in Conservation

According to the GEF (2010), an evaluation is “a systematic assessment of what works and what doesn’t and why”. It has evolved as a discipline over time through four paradigms, illustrated in Figure 2.1, all of which feature in modern evaluations (Guba & Lincoln, 1989):

![Figure 2.1](image)

Figure 2.1 Based on Guba and Lincoln’s (1989) “Fourth Generation Evaluation”, this illustration paraphrases the four facets of evaluation: measurement, description, judgement, participation.

Good evaluations should go beyond assessing whether goals were reached to reviewing the adequacy of the goals and reasons for success or failure (Kleiman, et al., 2000). They should incorporate social and economic indicators, as well as biological ones (Plummer & Armitage, 2007). Evaluations are episodic, as distinct from monitoring, which involves routine observation of indicators over a period of time to identify changes.

Evaluation is a fundamental tenet of good management; commentators agree that it increases accountability, promotes transparency, contributes to organisational learning and improves overall effectiveness (Clarke, 1996; Stem et al., 2005; GEF, 2010). As well as providing a perspective on determinants of success, it can identify problem areas to be addressed and improved upon (Hatry, 1999).

In conservation terms, evaluation has become a key issue for policy makers at a macro level, with the Convention on Biological Diversity (CBD) driving the agenda (Brooks et al., 2009). At a micro level, conservation practitioners have limited budgets. There is both a moral duty to spend money given in good faith wisely and a practical need to do so cost effectively (James et al., 1999). Rigorous, “evidence-based” analysis is a pre-requisite to demonstrating that progress in conservation is being made (Sutherland et al., 2004) and also to validate that the strategies being deployed are appropriate (Ferraro & Pattanayak, 2006). This information can also be used to support public relations activities and maintain public engagement in the battle against biodiversity loss.
In spite of its importance, it is widely accepted that evaluation has been under-utilised in conservation (Stem et al., 2005). The Millennium Ecosystem Assessment (2005) states: “few well designed empirical analyses assess even the most common biodiversity conservation measures”. Redford & Taber (2000) submit that this is due to a lack of culture of critical evaluation within conservation. Mascia et al. (in review) contest that evaluation is now increasingly widespread, but that the plethora of jargon is confusing the issue and limits the efficacy of evaluation efforts. To promote clarity, they have characterised the common forms of evaluation into five typologies (Table 2.1). These typologies are complementary and their deployment is situation dependent.

Table 2.1 Summary of conservation monitoring and evaluation typologies, as presented in Mascia et al. (in review)

<table>
<thead>
<tr>
<th>Evaluation typology</th>
<th>Issue addressed</th>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Monitoring</td>
<td>What is the state of ambient social and/or environmental conditions, and how are these conditions changing over time and space?</td>
<td>Can be conducted by researchers and citizen volunteers. Used to inform planning and priority setting.</td>
</tr>
<tr>
<td>Management Assessment</td>
<td>What are the management inputs, activities, and outputs associated with a conservation intervention, and how are these changing over time?</td>
<td>Seeks to identify strengths, weaknesses and opportunities for improvement based on inputs and outputs.</td>
</tr>
<tr>
<td>Performance Measurement</td>
<td>To what extent is a conservation intervention making progress toward its intended objectives for activities, outputs, and outcomes?</td>
<td>Can be conducted mid- or post implementation, usually by project managers to inform decision making. Relies on expert judgement and secondary data.</td>
</tr>
<tr>
<td>Impact Evaluation</td>
<td>What intended and unintended impacts are causally induced by a conservation intervention?</td>
<td>Typically conducted post implementation by professional researchers/evaluators, utilises primary data and complex and in-depth analyses to assess programme impacts.</td>
</tr>
<tr>
<td>Systematic Review</td>
<td>What is the state of the evidence for the impact of an intervention, and what does this evidence say about intervention impacts?</td>
<td>Not widely adopted in conservation. Typically conducted by independent reviewers, drawing information from secondary data sources.</td>
</tr>
</tbody>
</table>

Where evaluation does take place, measurement is typically not systematic or controlled (Ehrenfeld, 2000). Weaknesses include poorly articulated objectives and a lack of scientific rigour (Yoccoz et al., 2001). A review of tropical conservation evaluation by Brooks et al. (2009) found that the level of evaluation activity differs by intervention type. For example, there is a growing body of evidence regarding the impact of protected areas (PA) (although less evidence proving
species inhabiting these areas are benefitting). An independent study found that the IUCN’s Framework for Evaluating Pas has been widely adopted across the globe (Whyte & Ofir, 2004). In comparison, relatively little is known about the conservation effectiveness of programmes that promote conservation through alternative livelihoods. This could be because programmes with dual objectives – such as human development and biodiversity conservation - require multidisciplinary skillsets and commensurate budgets to measure progress along both dimensions.

Whilst the quality and quantity of evaluation occurring has been seemingly amiss, there are equally well known reasons for this. Evaluation and particularly monitoring of changes in biodiversity relating to specific interventions require significant investment of time and money (Howe & Milner-Gulland, 2012). Where budgets are tight, evaluation may be perceived as an optional extra and deprioritised due to a lack of funding (Kleiman et al., 2000). However, where an analytical approach is taken to programme planning, incorporating full costs as well as biological benefits, substantial increases in cost effectiveness can be achieved (Naidoo et al., 2006). Balmford et al. (2000) found that as many as twice the number of species could be conserved for the same budget, when costs were considered. Systematic evaluation can be used to inform analytical planning processes.

As well as the cost, there are practical considerations. The applied nature of conservation conspires to make calculating the true incremental benefit of an intervention using scientific techniques extremely difficult (Ferraro & Pattanayak, 2006). Reasons for this include, but are not limited to: (i) spillover effects1, so benefits in the target area may be overestimated; (ii) difficulty in quantifying confounding factors2, which can make it extremely challenging to attribute benefits to a specific intervention; and (iii) counterfactuals, or control scenarios3, may not exist for meaningful comparisons. It can be ethically challenging to justify incorporating traditional counterfactuals into studies where using a control places a species at high risk or involves preventing economic development from taking place in poor communities. Changes to biological systems are unlikely to be measurable in the lifespan of a given project, and benefits from indirect interventions designed to change behaviours and habits may take decades, beyond the funding of a project (Salafsky & Margoluis, 1999). In the intervening period, multiple dynamic

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1 A spill over effect is where undesirable behaviour is shifted elsewhere (Ferraro & Pattanayak, 2006)
2 Confounding factors are “contemporaneous with an intervention and could plausibly affect the outcome and therefore mask the intervention’s effect” (Ferraro & Pattanayak, 2006)
3 A counterfactual is the outcome that would have happened if there had been no conservation intervention. (Ferraro & Pattanayak, 2006)
interventions may occur in the same vicinity and disentangling the specific effects from one initiative may be impossible.

Overall, these challenges should not prevent evaluations from taking place. In comparison, International Development, analogous to conservation in its critical nature, addresses the issue of measurement practically through well-structured longitudinal data collection using household surveys (Ravallion, 2003). In a study of 56 tropical conservation education programmes, Norris & Jacobson (1998) found that evaluation was positively correlated with programme success. Evaluations provide an opportunity for individual and team development, leading to more efficient working practices that increase effectiveness (Cundill & Fabricus, 2009).

### 2.1.1 What makes a good evaluation?

In the last decade, a growing number of international institutions have published best practice evaluation frameworks. Examples of these include IUCN’s Framework for evaluating Protected Area effectiveness (Hockings et al., 2006) and GEF’s Monitoring and Evaluation Policy (2010). In addition, well-known conservation NGOs have published their own frameworks for guidance, such as The Nature Conservancy’s “Five – S Framework for site conservation” (TNC, 2000). Commentators and academics are increasingly developing support “tools” to aid practitioners, for example the Cambridge Conservation Forum approach (Kapos et al., 2008) and the Ranked Outcomes approach (Howe & Milner-Gulland, 2012).

Common features of these frameworks and tools include a focus on “outcomes” (the result of an intervention) as well as “inputs” (what resources were expended), “process” (how were they expended) and “outputs” (what was delivered by the programme), as illustrated by IUCN’s approach in Figure 2.2. Inter-disciplinary, i.e. social, economic and biological, measures should be included (Plummer & Armitage, 2007). Measuring all of these aspects is important, because a programme could be executed without fault but not achieve its conservation goals; equally another could leave significant room for improvement in terms of implementation and still deliver biological benefits, but do so at a high cost.
Kleiman et al. (2000) recommend conservationists follow the social sciences and ensure that evaluations become part of “adaptive management”. This term coined by Salafsky et al. in 2001 (Stem et al., 2005), describes an iterative process of systematically reviewing and improving interventions. In this way, evaluations form part of a continuous cycle of improvement.

### 2.2 Integrated conservation and development projects

The need to improve the poverty status of communities who rely on natural resources is well founded in principle, as their dependency on these resources is a major challenge in biodiversity conservation (Gunatilake, 1998). Conservation circles have accepted that it is both ethically and politically unacceptable to exclude people, often the rural poor, who live adjacent to and depend on natural resources from PAs without providing reasonable alternatives (Brandon & Wells, 1992). As a result, Integrated Conservation and Development programmes (ICDPs), which combine conservation and socio-economic objectives, have received significant support and millions of dollars of investment over the last few decades (Kellert et al., 2000).

ICDP is a broad term that encompasses many types of initiatives. Their commonality lies in their support for encouraging economic development in communities adjacent to PAs. This support
can be categorised into three areas: “compensation, alternatives and enhancement” (Abbot & Thomas, 2001). Compensation programmes provide financial, or in-kind, compensation for resources no longer available. Alternatives programmes seek to substitute resources provided within the protected area to reduce dependence, either through alternative income earning opportunities or direct replacements. Enhancement programmes seek to increase the value of the PA to the local people – perhaps through ecotourism - and thereby encourage protection.

It is the alternatives type of intervention that forms the basis of the case study in this thesis. Originally alternatives ICDPs were expected to replace other livelihoods activities that were considered undesirable; now it is understood that they are more likely to play a complementary role to existing activities and in doing so protect local communities from natural resource depletion (Roche, 2007).

However, 20 years after the inception of ICDPs, the “parks vs. people” debate is still hotly contested on philosophical as well as practical grounds (Miller et al., 2011). Limited evidence of conservation success has stoked the fire and led academics and practitioners to question their validity (Agrawal & Gibson, 1999). Whether it is possible to marry conservation and development objectives without significant compromise has featured increasingly in the literature (for examples, see McShane et al., 2011). Some commentators have gone as far as to describe conservation and development as incompatible and that attempts by conservationists to pursue both equally is an “abrogation” of their ideals (Salafsky, 2011).

Moving from the theoretical to the practical, it is unsurprising that commentator views are mixed; the diversity of activities falling under the banner of ICDP make generalisations difficult (Abbot & Thomas, 2001). From a conservation perspective, a major criticism is that the fundamental assumption of ICDPs is unproven: although development objectives may be realised, conservation success does not automatically follow and particularly if conditionality is not imposed (Kellert et al., 2000). Sievenan et al.’s (2005) analysis of seaweed farms in Asia found that although participating farmers were earning incremental income from seaweed farming, this did not necessarily lead to reduced fishing pressure.

It is not just conservationist biologists who are sceptical. Social scientists and practitioners are also critical of ICDPs (Horwich & Lyon, 2007). The potentially most damaging claims are that rather than improving the poverty status of beneficiary communities, ICDPs can work to sustain poverty (Vyamana, 2009). It goes without saying that missing the balance between conservation

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4 Conditionality refers to the conditions, in this context conservation related, added to a gift or incentive to ensure that recipients adjust behaviour in return.
and development could be extremely detrimental for conservation (Brockington & Schmidt-Soltau, 2004). Whilst the criticisms levelled at ICDPs are too numerous to discuss in detail within the scope of this study, an overview can be found in Table 2.2.

Table 2.2 Summary of common criticisms of ICDPs and their corresponding authors

<table>
<thead>
<tr>
<th>Criticism of ICDP</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation needs are not addressed, either through design flaws or development objectives “overpower” conservation objectives</td>
<td>Baral et al. (2007); Ferraro &amp; Simpson (2002)</td>
</tr>
<tr>
<td>The link to conservation is either not made explicit or doesn’t exist.</td>
<td>Kiss (2004) Wells et al. (1992)</td>
</tr>
<tr>
<td>Benefits unequally distributed in recipient communities, or are not realised at all. Beneficiaries are net losers; the programme does not adequately compensate lost livelihoods or increases the poverty gap</td>
<td>Nielsen &amp; Treue (2012) Wells &amp; McShane (2004) Vyamana (2009)</td>
</tr>
<tr>
<td>Lack of law enforcement, or conditionality not imposed</td>
<td>Linkie et al. (2008)</td>
</tr>
<tr>
<td>Weak local institutions and governance, in some cases leading to corruption</td>
<td>Sandker et al. (2009) Smith &amp; Walpole (2005)</td>
</tr>
</tbody>
</table>

However, it is not all doom and gloom for ICDPs. Some of the early criticism may be due to conclusions being drawn before sufficient time had passed for the benefits to be realised. A study into five interventions in Nepal found that the longer an ICDP lasted, the higher the conservation impact realised (Baral et al., 2007). Brooks et al.’s (2006) analysis of 124 conservation projects found that permitted use of natural resources and greater community involvement were
important factors in achieving results. A Nepalese study published this year found a significant improvement in large mammal populations in ICDP sites compared to the previous protectionist approach (Ojha & Sarker, 2012). Conservation success can follow where there is a mutual dependence between conservation and development and contractual conditionality (Martin et al., 2011). Clear links between income earnings and conservation that are also explicit to participants can improve outcomes (Morgan-Brown et al., 2010).

Whilst initiatives seeking to meet the needs of conservation and communities may not have lived up to expectations yet (Hulme & Murphree, 2001), it is impossible to ignore the relationship between conservation and development (Adams, et al., 2004). If nothing else, given the World Parks Congress (WPC) vision of the crucial role that PA management has to play in sustainable development (WPC, 2004), ICDPs are here to stay. Policy makers and practitioners need to understand the practical links between the two agendas and focus on finding out what does work (Horwich & Lyon, 2007). Evaluation has a role to play here, by drawing attention to the strengths and weaknesses of joint programmes and informing an adaptive management policy to overcome programme flaws, risks and uncertainties.

2.3 Introducing the case study

2.3.1 The Eastern Arc Mountains of Tanzania
Tanzania is situated on the East African coast south of the Equator. Its population grew rapidly from 10 million in 1960 to 42 million in 2008, whilst it has remained consistently on the list of the world’s Least Developed Countries (UN, 2009). It is home to a wide range of biomes and biodiversity hotspots, including c.35million hectares of evergreen forests and deciduous woodlands covering 38% of its mainland (FAO, 2006). Government departments manage approximately 600 gazetted reserves covering almost 10 million hectares. In spite of legal protection, actual management is often limited by a lack of budgets and equipment, so often these areas become degraded (Burgess et al., 2010).

The Eastern Arc Mountains (EAM) comprise a chain of 13 individual forested mountain blocks, which range from the Mahenge and Udzungwa mountains in South West Tanzania up to the Taita Hills in Southern Kenya (see Figure 2.3). They have long been recognised as globally exceptional for the number and density of endemic species and are one of Conservation International’s biodiversity Hotspots. Their age, geology and climate are considered to provide an explanation for the unusually high levels of endemism found there (Burgess et al., 2010). Today, only 10% of the EAM are forested, compared to historical levels of 37%, and approximately 75% of current forest falls within PAs, with more forest reserves proposed (Platts et al., 2011).
As well as unique species and habitats, the EAM are home to a population of approximately 2.2 million people, who have long benefitted from the natural forest resources, comfortable climate, clean water and agricultural potential (Platts et al., 2011). In addition, EAM provide critical ecosystem services in the form of water for irrigation, domestic and livestock consumption, and hydropower for the wider Tanzanian population, including the major conurbations of Dar es Salaam and Morogoro (FBD, 2007).

Forest areas in Tanzania are declining overall as a result of uncontrolled wildfires, encroachment for agricultural development, bushmeat hunting, illegal livestock grazing, illegal resource extraction, mining and charcoal making (FBD, 2006). Rates differ by forest type; the EAM forests declined by 1% between 1990 and 1999 compared to 7% of the coastal forests (Burgess et al., 2010).

2.3.2 Livelihoods initiatives in Tanzania

24% of Tanzania comprise PAs for wildlife, so community development might be considered a priority here (Vedeld et al., 2012). However, a recent study of Mikumi National Park found that although costs of living in proximity to the park constrain local incomes by 2-20%, community outreach activities represent only 2.5% of management costs (Vedeld et al., 2012). ICDP-type initiatives such as Payments for Ecosystem Services (PES) and “joint forest management” (JFM5) are established conservation / management tools. Recent evaluations suggest, that as per ICDPs elsewhere, implementation is often compromised (for example, through poor design, corruption and spillover effects) and there is a growing body of evidence of the negative consequences for local livelihoods (Nielsen & Treue, 2012; Nielsen, 2011; Vyamana, 2009).

55 Joint forest management, also known as community based forest management (CBFM) and Participatory Forest Management, and involves collaborating with communities to manage forest resources.
2.3.3 Eastern Arc Mountains Conservation Endowment Fund (EAMCEF)

The Eastern Arc Mountains Conservation Endowment Fund (EAMCEF)\(^6\) was established in 2006 as a funding mechanism for biodiversity conservation in the EAM. It was started as a joint initiative between the World Bank, GEF, United Nationals Development Programme (UNDP) and Tanzanian Government to distribute grants to local beneficiaries for conservation of EAM. It operates as a trust fund with a long term goal of providing sustainable conservation funding in the region. The EAMCEF Secretariat is based in Morogoro and comprises a lean staff team split between Finance & Administration and Programme Management & Planning Functions, headed by the Executive Director.

Between 2006 and 2010, EAMCEF distributed approximately $1 million to a wide range of institutions, from government departments to private entities to support new and existing initiatives in priority locations. The project themes in this study were recipients of this tranche of funding. EAMCEF’s conservation strategy prioritises three streams of activity:

- Community based conservation and development activities (50%)
- Applied biodiversity research (15%)
- Protected areas and climate change management (35%)

EAMCEF have well-established and rigorous processes in place to approve and monitor the spending of funds, which are released in three stages. At each stage, project coordinators are expected to provide interim reports to receive the next tranche of funding. To date EAMCEF has primarily focussed on ensuring project delivery takes place as agreed, but it is yet to review project outcomes.

2.3.4 Study area

This study focusses on one of EAMCEF’s first priority areas: Uzungwa Scarp Forest Reserve (USFR) in Iringa Region (South West) of Tanzania. USFR is 32,763 hectares. USFR falls under the jurisdiction of three different District Councils: Kilolo, Kilombero and Mufundi. EAMCEF funds projects in each District, but this study is limited in scope to Kilolo.

Systematic monitoring of populations and threats carried out between 1998 and 2008 identified that biodiversity depletion in USFR is higher than neighbouring forests, particularly concerning its endemic, and in some cases endangered, primate and duiker populations\(^7\) (Rovero et al., 2010). During the same period, evidence of increased forest disturbance such as snare hunting and

\(^6\) More information can be found on EAMCEF’s website: [www.easternarc.or.tz](http://www.easternarc.or.tz)

\(^7\) Endemic species include Udzungwa Red Colobus Monkey *Procolobus gordonorum* and the Endangered Abbots Duiker *Cephalophus spadix*
logging (Rovero et al., 2010) and plant collection for medicinal purposes (Ndanyalasi, et al., 2007) was observed. Bushmeat hunting is thought to be limited to personal consumption (Nielsen, 2011). Urgent recommendations arising from research at the time included: upgrade USFR status to Nature Reserve\(^8\), improve law enforcement and initiate livelihoods programmes to provide alternative protein sources to the local communities (Rovero et al., 2010). Since then, multiple such projects have been implemented in the area, including pigs, guinea pigs, rabbits, goats and cows. USFR is currently awaiting the final ratification of a status upgrade to Nature Reserve.

2.3.5 Study villages
This study reviews the impact of projects in four villages in Kilolo District: Idegenda\(^9\), Ilulila, Masisiwe and Mbawi. They all lie adjacent to the USFR boundary and are within approximately a 15km radius, and in some cases less than one hour’s walk, of one another. Details of their populations can be seen in Table 2.3.

### Table 2.3 Study village population details, adapted from (EAMCEF, February 2012)

<table>
<thead>
<tr>
<th></th>
<th>Idegenda</th>
<th>Ilulila</th>
<th>Masisiwe</th>
<th>Mbawi</th>
</tr>
</thead>
<tbody>
<tr>
<td># households</td>
<td>815</td>
<td>475</td>
<td>420</td>
<td>531</td>
</tr>
<tr>
<td># men</td>
<td>2023</td>
<td>1141</td>
<td>874</td>
<td>1132</td>
</tr>
<tr>
<td># women</td>
<td>2105</td>
<td>1187</td>
<td>910</td>
<td>1179</td>
</tr>
<tr>
<td>Total population</td>
<td>4128</td>
<td>2328</td>
<td>1784</td>
<td>2311</td>
</tr>
</tbody>
</table>

The villagers are Hehe tribe and their preferred language is Kihehe. They also speak Swahili, the national language of Tanzania. The villages are poor, subsisting on less than 100,000 Tanzanian shillings (TZS) per capita per annum (Kilolo District Council, pers. Comm.). This is equivalent to £39\(^10\) and a fraction of the $1 a day subsistence level defined by the World Bank as living below the poverty line. The villagers rely primarily on subsistence agriculture. Research found that in 2008, 15% of households relied on bushmeat for food security (Rovero et al., 2010). Land has been converted for agriculture and agroforestry up to USFR boundary.

The most accessible village is Masisiwe, which is approximately an hour and a half’s drive, or 30km from Kilolo town where the District Council is located. The roads to access the villages are poor and become completely inaccessible by vehicle at the peak of the rainy season (February to April), which limits access to markets further afield.

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\(^8\) Nature Reserve offers the highest possible legal protection under Tanzanian law

\(^9\) Since the ICDPs were originally implemented, Idegenda has been divided into two villages: Idegenda and Isanga. For the purpose of this study, they are being treated as one entity.

\(^10\) Calculated using an exchange rate of 1 Tanzanian Shilling (TZS) = £0.000399728. Accessed on xe.com on 3\(^{rd}\) September 2012
Due to the poverty levels and biodiversity value in the area, the villages have been the recipients of numerous projects in the last 20 years, most notably a large scale tree planting project in the 1990’s and more recently the protein projects mentioned above. The majority of EAMCEF conservation projects in this area have been run by Kilolo District Council. It is widely accepted that unless poverty is alleviated through sustainable, biodiversity-friendly development in the area, that conserving USFR will be extremely challenging while its human inhabitants continue to rely on it to meet their most basic needs.

2.3.6 Projects for evaluation
Since 2005, 17 proposals have been accepted by EAMCEF to fund projects in the study villages. Those that relate to livelihood improvements (social and economic) and are above 90% complete have been included in this study. Each project typically lasts 2 years. Where projects appear to be working and secondary proposals submitted, EAMCEF have funded subsequent projects. For the purpose of this study, related livelihoods projects have been grouped into six categories and treated as a single programme. The programmes are: beekeeping, dairy goat husbandry, fish farming, fuel efficient stoves, rabbit farming and tree planting. Each village received a total of five programmes as two were only implemented in two villages each. A summary of the projects and the amounts spent can be seen in Table 2.4.

Table 2.4 Summary of programmes to be evaluated, including the number of projects per programme, number of participants and amount spent (£,000s).

<table>
<thead>
<tr>
<th></th>
<th>Bees</th>
<th>Fish</th>
<th>Fuel</th>
<th>Goats</th>
<th>Rabbits</th>
<th>Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of villages</strong></td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Number of projects in this study</strong></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Amount spent (£000s)</strong></td>
<td>5.37</td>
<td>6.95</td>
<td>4.80</td>
<td>5.39</td>
<td>1.18</td>
<td>17.06</td>
</tr>
<tr>
<td><strong>Amount spent per village (£000s)</strong></td>
<td>0.91</td>
<td>3.5</td>
<td>0.81</td>
<td>0.91</td>
<td>0.6</td>
<td>2.89</td>
</tr>
</tbody>
</table>

The beekeeping initiatives ("Bees") aim to substitute traditional honey collection from USFR and provide income to participants. The money has been used to provide large modern hives to the

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11 Other projects were implemented by EAMCEF, including a boundary management project that included clearing the USFR boundary for cash payments (but no enforcement activities). This thesis only includes the livelihoods projects.

12 Typically the year after the proposal was submitted and accepted by EAMCEF

13 Although only four of the projects are included in the scope of this study

14 Some of the Bees and Trees projects were submitted under joint proposals. Costs have been split between the projects using the itemised budgets. Based on expenditure on project themes at point of evaluation, using exchange rate of:1 Tzs = £0.00039964. Accessed on xe.com on 3rd September 2012.
villagers and training on modern beekeeping techniques. If harvested correctly, the modern hives can produce three to four times more honey than traditional hives and villagers can earn approximately 2,500TZS (99p) per litre of honey. The villagers have also been provided shared equipment for harvesting the honey.

The dairy goats (“Goats”) were introduced to improve health through milk provision, income from selling goats and milk and in the long run an alternative protein source. 10 goats were provided to each village (one male and nine females, one allocated per villager). In addition to providing the goats, the funds were spent on training villagers on husbandry techniques, milking and breeding the goats.

The Fish Farming initiatives (“Fish”) aim to provide alternative protein and incremental income to farmers from fish sales. The project involved conducting training, helping to build fish ponds and providing fingerlings for participants. Farmers can expect to earn 1,000TZS (30p\textsuperscript{15}) for each large fish they sell and 200TZS (8p\textsuperscript{16}) per fingerling. Fish is only in two of the study villages.

The Fuel Efficient stoves (“Fuel”) were aimed at reducing fuelwood collection from USFR (as modern stoves are 2-3 times more efficient than the traditional stone ones) and also improving quality of life for women through spending less time collecting fuelwood, quicker and more efficient cooking and improved health through reduced smoke inhalation. Fuel included providing training on building the stoves and construction of demonstration stoves in each village.

The Rabbit farming initiative (“Rabbits”) aimed to provide an alternative protein source and supplementary income to villagers. 30 rabbits were provided to two villages only (Masisiwe and Mbawi). Participants were trained on husbandry techniques, which involved keeping the rabbits in home-made hutch in their kitchens. Rabbits is the smallest initiative.

The Tree Planting programme (“Trees”) aims to promote the environmental and socio-economic benefits of trees and reduce illegal logging. It comprises two components: 1) formation of tree planting groups in each village to grow seedlings and plant woodlots and 2) a biennial seedling growing competition for schools and local institutions to promote tree planting. Tree planting is well known to yield high returns; at current prices, farmers can expect to earn around 3,200,000TZS (£1,250) per ¼ acre (based on interview data). Trees was the most expensive programme.

\textsuperscript{15} using exchange rate of:1 TZS = £0.00039964. Accessed on xe.com on 3\textsuperscript{rd} September 2012

\textsuperscript{16} See note 15.
3.0 Methods
This evaluation of Ranked Outcomes (RO) is in two parts. The first part is an Independent Evaluation (IE) and closely follows the original process set out in Howe and Milner-Gulland (2012), by qualitatively assessing the case study initiatives. The second part is a Villager Evaluation (VE) that adapts the original method by using quantitative data collected by surveying the study villages.

After an overview RO and procedures, this section explains the approach taken to complete the IE, before outlining the differences in the VE. A summary of the core components of the method can be seen in Figure 3.1.

Figure 3.1 Summary of core components of the method that are used in the study, presenting a comparison between the Independent and Villager Evaluation

3.1 Applying the Ranked Outcomes framework
The RO framework (Howe & Milner-Gulland, 2012) is based on identifying a list of conservation outcomes for a given organisation and measuring project achievements against them. The outcomes are subdivided into categories of comparable topics and should include the broadest range of strategic outcomes that are being targeted by the organisation.

Once the outcomes are agreed, a qualitative independent evaluation of project documentation can be completed to assess whether outcomes have been met. Although desirable, primary data are not a pre-requisite for RO.
Concurrently, the outcomes are prioritised within each category. The ranking of an outcome within a category provides the basis for its score. If it is ranked top, then it receives a maximum of 10 points; if ranked bottom, 1 point and so on. The prioritisation can then be applied to calculate an overall project score that can be used to index comparable projects. This process is summarised in Figure 3.2.

Figure 3.2 – Illustration of the Ranked Outcomes Scores Calculation, based on the methodology used in Howe & Milner-Gulland (2012)

3.2 Procedures

3.2.1 Village procedures
Visits to each village were initiated by meetings with the Village Chairmen and Executive Officers. The introductions were accompanied by a letter from the District Executive Director to authenticate the research.

In each village, IE interviews and observations were completed first, typically over two days. This was followed by three days of VE surveys. The only exception to this was Idegenda, where pilots and focus groups were completed before the VE began.

All activities were completed with one Research Assistant and myself, with the exception of the final two days in Ilutila, which were completed by the Research Assistant alone due to vehicle issues. All activities were prefaced by a brief overview of the purpose of the research and reassurances regarding confidentiality and anonymity of participants.

Interviews and surveys were conducted in peoples’ own premises where possible. This was because it was established during the pilot that the research group attracted considerable attention by virtue of being strangers in the village. A local guide accompanied the researchers to provide introductions and reassurance to villagers. After the introductions were completed, the guide left the vicinity.
No incentives were provided for participation in interviews or surveys. Focus group (FG) participants were given a small amount of money to cover the cost of buying a refreshment each. This was agreed between EAMCEF and the village officials in advance as the most appropriate “thank you” gesture for their time.

3.2.2 Pilot activities
All aspects of the VE were previewed in Morogoro with EAMCEF staff and EJMG.

FGs and surveys were piloted in Idegenda village. This is because it has the largest population of the villages and so the live FGs and surveys were less likely to be polluted by the pilot activities. No changes were made to the FG following the pilot; survey protocol was improved based on pilot experiences. Pilot participants were excluded from taking part in any of the real surveys.

3.2.3 Statistical analyses
All analyses were conducted in Microsoft Excel or R (Version 2.14.0).

3.3 Independent Evaluation (IE)

3.3.1 Outcome selection and prioritisation
The outcomes were adapted from the original outcomes used in Howe & Milner-Gulland (2012) to align them to EAMCEF’s broad strategic objectives (Forestry & Beekeeping Division, 2006). The outcomes were agreed with EAMCEF’s Programme Officer. There are six categories, each with 10 outcomes. The categories are: Education & Awareness, Research & Planning, Infrastructure, Species & Habitats, Legacy and Negatives.

The 10 outcomes in each category were prioritised individually by EAMCEF staff, specifically the Executive Director, Programme Officer, Finance and Administration Officer and Project and Communications Officer. Once the prioritisation results were collated, the median score used to create the rank order for the outcomes. This ranking took place after the assessment period to minimise any bias in the results. The final, prioritised list of IE Outcomes can be reviewed in Appendix 1.

3.3.2 Kappa Statistic of inter-rater agreement
The probability of agreement above chance between the EAMCEF staff prioritised outcome lists was measured using the Kappa Statistic. Kappa is used predominantly in clinical fields to quantify the levels of consistency with medical diagnoses. There are various forms of the statistic; for this study Fleiss’ Kappa (1981) has been applied as it allows for comparison between more than two raters on a multi-category scale. Fleiss’ Kappa equation calculates the probability of agreement above chance as:
One of Kappa’s limitations is that the more categories on a scale being rated, the higher the chance of random agreement and the lower the score is likely to be, leading to underrepresentation of the probability of true agreement. Given the number of outcomes within each category (n=10) compared to the number of raters (n=4), it was likely that the results would be affected in this way. To mitigate this, for the Kappa calculation the outcomes were grouped into three sets: high (ranks 1-3), medium (ranks 4-7) and low importance (ranks 8-10). Comparisons of Kappa statistics between tests using different scales should be treated with caution.

Landis & Koch’s (1977) guide for strength of agreement for Kappa was used as an indicative guide (see Table 3.1). Such benchmarks are relatively arbitrarily decided so assessing agreement must be taken in the context of the situation.

### Table 3.1 Landis and Koch’s (1977) Interpretive Guide to Kappa Agreement

<table>
<thead>
<tr>
<th>Probability</th>
<th>Interpreted probability of agreement above chance</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0</td>
<td>Non existent</td>
</tr>
<tr>
<td>0</td>
<td>Poor</td>
</tr>
<tr>
<td>0.1-0.20</td>
<td>Slight</td>
</tr>
<tr>
<td>0.21-0.40</td>
<td>Fair</td>
</tr>
<tr>
<td>0.41-0.60</td>
<td>Moderate</td>
</tr>
<tr>
<td>0.61-0.80</td>
<td>Substantial</td>
</tr>
<tr>
<td>0.81-1</td>
<td>Almost perfect</td>
</tr>
</tbody>
</table>

**3.3.3 Independent Evaluation: outcome assessment**

The IE commenced as soon as the outcomes were agreed. 52 reports were reviewed in the first instance. The wording in the documents was used to assess which outcomes had been achieved. Where it was ambiguous, outcomes were marked “pending further clarification”. At this stage, the outcomes scored by each programme were calibrated to ensure that they had been allocated fairly. This involved comparing the relative achievements of each initiative by outcome to check for consistency of treatment between the programmes.

Thereafter, the IE involved fact finding in the field. This included semi-structured interviews with each of the Project Co-ordinators and two participants per programme in each village. Interviews
followed a set format initially, followed by exploratory supplementary questions. Project-related equipment and material observations were completed first, which acted as an ice breaker.

These interviews were intended to fill gaps in the project reports, as they contained less detail than expected, and gather anecdotal feedback on the socio-economic benefits of the projects. Multiple participants were interviewed per initiative per village to gather a breadth of views i.e. to speak to participants who more and less successful. Interview and observation notes were recorded and used to allocate outcomes. A second calibration exercise was completed before the final scores were calculated.

3.4 Villager Evaluation (VE)
There are four main differences between the IE and the VE. Firstly, a simplified set of outcomes in five categories were used to make the process more appropriate to the villagers. The categories are: Education & Awareness, Species & Habitat, Infrastructure, Legacy and Negatives. Although this removed the possibility of direct comparisons between the IE and VE, this simplification was necessary to ensure the integrity of the VE by removing outcomes that were either irrelevant to villagers (e.g. relating to research) or required more subtle interpretation.

Secondly, three FGs were used to prioritise outcomes. They were advertised two days in advance and comprised 10-11 volunteers each. The participants are described in Table 3.2. It is worth noting that as the pilot FG was extremely successful and no changes were required, the decision was taken to include the pilot as a third FG in the results. The full FG protocol can be viewed in Appendix 2.

<table>
<thead>
<tr>
<th>Focus Group Pilot</th>
<th>Focus Group 1</th>
<th>Focus Group 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Women</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>From Idegenda</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Knew other people in the room</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Related to other people in the room</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Married</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Had children</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Attended Primary school</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Attended Secondary school</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Radio at home</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>TV at home</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Project participation</td>
<td>1x Goats</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1x Trees</td>
<td></td>
</tr>
</tbody>
</table>

* additional participant arrived after the warm up activity
Thirdly, although the median rank was used for the prioritisation and the Kappa statistic applied again, due to the lower number of outcomes in each category, the rankings were not reduced to “high”, “medium” and “low”. The prioritised list of villager outcomes can be found in Appendix 3.

Finally, the project scores were allocated by surveying 132 villagers to find out which outcomes had been achieved by projects that they were either aware of or involved in. A full script for the survey and protocol can be found in Appendix 4. VE results were calculated using the approach in Figure 3.3.

![Figure 3.3 Approach to calculating Villager Evaluation project scores](image)

The sampling strategy was necessarily opportunistic but stratified by village and their hamlets. Hamlets were considered important as some were far from the Village Executive Office which is the central communication hub in the villages. People were selected by stopping in the middle of each hamlet and walking to between homes before asking someone to participate. FG and pilot participants were excluded. A breakdown of the numbers of respondents can be found in Table 3.3 and Figure 3.4.

**Table 3.3** Table showing numbers of survey respondents in each village in four ways: as a total (n=132), as a percentage of total population (EAMCEF, February 2012) and numbers of each gender

<table>
<thead>
<tr>
<th>Village</th>
<th>Number of respondents</th>
<th>Proportion of population surveyed</th>
<th>Number of men</th>
<th>Number of women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idegenda</td>
<td>34</td>
<td>0.8%</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Ilutila</td>
<td>33</td>
<td>1.4%</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Masisiwe</td>
<td>33</td>
<td>1.8%</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>Mbawi</td>
<td>32</td>
<td>1.4%</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>132</strong></td>
<td><strong>1.3%</strong></td>
<td><strong>77</strong></td>
<td><strong>55</strong></td>
</tr>
</tbody>
</table>
3.4.1 Statistical analysis to test three aspects of the method

As well as qualitatively evaluating RO, this study aims to validate some of the design features of the methodology to inform its future use. After reviewing the relevant literature and considering the methodology, questions concerning three parameters were developed. Simple statistical tests were applied rather than building a mixed effects model as the intention was to indicate parameters for consideration in future research design and modelling, rather than to obtain parameter estimates concerning the specific projects being assessed. The questions can be seen in Table 3.4.

Table 3.4 Questions and statistical tests to be applied to VE data set to establish parameters for inclusion in future research.

<table>
<thead>
<tr>
<th>Question</th>
<th>Rationale</th>
<th>Test used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do villagers differentiate the project performance by the outcome categories?</td>
<td>To indicate whether villagers perceive a project overall as good or bad, or make judgements based on strengths and weaknesses</td>
<td>One Sample Wilcoxon</td>
</tr>
<tr>
<td>Does village affect the performance of the projects?</td>
<td>Is it important that future evaluations involving neighbouring villages that have received identical interventions subdivide analysis by village?</td>
<td>Kruskall Wallis</td>
</tr>
<tr>
<td>Does involvement in projects make respondents more positive about them?</td>
<td>To understand the potential for bias from disproportionately representing project participants in the survey</td>
<td>Mann-Whitney U Test</td>
</tr>
</tbody>
</table>
3.5 Constraints and uncertainties
This study was limited to 11 weeks in Tanzania, from 2\textsuperscript{nd} May 2012 to 18\textsuperscript{th} July 2012. The original intention was to survey six villages who had received the all interventions. Due to bridge repairs, two villages could be not reached. The remaining villages were attended in order of likely accessibility post the wet season: Idegenda, Masisiwe, Mbawi and then Ilutila.

The study villages were not identical in size and had received different initiatives from various funders. This may have confounded villager perceptions of the benefits associated with each programme.

All fieldwork was conducted in Swahili, but this is a second language for many in Kilolo District. For the more remote hamlets and the less educated, this provided considerable challenges. This was addressed through regular checks of understanding and paraphrasing questions where required.

Due to an unavoidable mixture of illness, bereavement and changing remits, four different research assistants supported the fieldwork. This necessitated some on-the-job training due to time constraints. All were from the District or Forest Office, but only one was, unavoidably, directly involved in the implementation of one of the projects (he had provided training on beekeeping).

The IE is based on the view of one person. I sought to be as impartial and fair as possible, but it is possible that others would mark differently.
4.0 Results

4.1 Independent Evaluation

4.1.1 Independent Evaluation: outcome prioritisation

The Kappa agreement between the EAMCEF Secretariat staff overall was 0.221, or “Fair” (Landis & Koch, 1977). All of the Kappa results can be seen in Table 4.1. Species & Habitat had the highest agreement within category of 0.419, or “Moderate”. This could be because this category is the most directly related to species conservation and so easiest to associate with EAMCEF priorities. For example, three out of four participants agreed that “improved physical protection for priority conservation areas” was highly important; everyone agreed that “putting legislation in place to protect species or habitats” was of lowest importance. Negatives had the lowest agreement of any category and agreement was negative overall (therefore non-existent). This could be because the outcomes in this category are general rather than category specific, so less easy to prioritise.

In the Legacy category, everyone agreed that “the local community is inspired to run its own initiatives” was highly important and that “project members or trainees finding permanent positions in conservation” was least important. This reflects EAMCEF’s strategy to encourage communities to form their own groups and apply for funding directly for conservation initiatives.

In Research and Planning, three out of four participants agreed that “obtaining baseline data” was the most important outcome in the category. Everyone agreed that “developing species identification systems” was of low importance. The high agreement on obtaining baseline data is interesting as the assessment of the documentation found that baseline data was generally lacking in the reports.

The Infrastructure category had second lowest agreement and the only agreement of note was that three out of four participants felt that having the right legal structures in place was low importance compared to the other outcomes.

Table 4.1 Kappa statistic of random agreement for IE prioritisation activity. Kappa statistic is applied to each outcome category and overall

<table>
<thead>
<tr>
<th>Outcome Category</th>
<th>Kappa Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education &amp; Awareness</td>
<td>0.293 (Fair)</td>
</tr>
<tr>
<td>Research &amp; Planning</td>
<td>0.217 (Fair)</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.015 (Slight)</td>
</tr>
<tr>
<td>Species and Habitat</td>
<td>0.419 (Moderate)</td>
</tr>
<tr>
<td>Legacy</td>
<td>0.394 (Moderate)</td>
</tr>
<tr>
<td>Negatives</td>
<td>-0.010 (Poor)</td>
</tr>
<tr>
<td>Overall</td>
<td><strong>0.221 (Fair)</strong></td>
</tr>
</tbody>
</table>
Feedback from the group about the activity was that it was in some cases “difficult to prioritise as all of the outcomes are important” but that it was a “useful exercise to think again about what we are trying to achieve and why we are here”. There was also recognition that many of the projects are smaller scale and not likely to meet all of the outcomes on their own as they are part of a broader strategy.

4.1.2 Independent Evaluation: overview of interviews and observations

Bees

This project was one of the most consistent. Some of the villages already had a culture of beekeeping using traditional hives, so although they were not learning a new skill, they now have more lucrative modern hives. One person described the project benefits as “I have earned enough money from my honey this year to pay for ½ the school costs of one of my four children each year”.

When asked how the project benefitted USFR, people were able to relate keeping their own hives to not needing to forage for honey the traditional way: cutting down trees. Other benefits cited included: “now that we keep hives near the village, people do not cut down the trees here” and “since we have had the beekeeping project there are more bees around and our fruit trees have produced more as a result”.

Some of the challenges faced by this project include:

- Poorly timed honey collection, leading to reduced harvests. This is partially because beekeeping is a supplementary-income activity rather than a full time occupation, so important farming activities are prioritised over honey collection.
- Different implementation between villages. Some groups operated as a cooperative and others divided the hives between participants. The cooperative approach caused problems in one village as the participants had a dispute and most quit the project.
- Poor quality hives, which meant some were rotting prematurely, and lack of use of the more advanced equipment provided such as honey presses.
- Limited sales opportunities. Most honey was consumed at home. The rest was sold locally to other families, the dispensary or the village brewers (this seemed to be favoured as the seller could sell the honey in its raw form with no additional work required). One villager spoke enthusiastically about waiting for a cooperative to be set up to enable honey to be sold
sold further afield and at a better price. It is expected that when this happens it will provide a good incentive to people to manage their hives in a more commercial manner.

**Goats**

This intervention was very variable. In some villages, people were selling offspring and receiving good quantities of milk; in others, the only benefit appeared to be an intrinsic ownership value. In Ilutila, many of the original goats died soon after being delivered, which noticeably affected attitudes towards the project.

One of the most consistently cited benefits of Goats was improvements in the quality and quantity of vegetables grown on allotments from using the goat manure. In some cases, participants were selling manure in small quantities.

One of the biggest challenges was that most of the females provided were indigenous, not dairy goats. This was a deliberate decision to create hardier cross breeds able to withstand the colder climate. However, as the indigenous goats could not be milked, the project benefits were immediately limited and perceptions of the project were adversely affected because participants expected dairy goats. Those who were breeding their goats successfully could expect to earn around 40,000TZS (£15\(^{17}\)) per kid, but, due to the relatively low fecundity of the goats and a desire by owners to grown their stockholding, this was happening infrequently.

The few dairy females were producing good quantities of milk. The best example was in Mbawi, where a female had produced three sets of twins and 1.5-2 litres of milk daily since her firstborn. Where goats were being milked, most of the milk is being consumed in the home and not sold, which provided health, but not financial benefits.

The other challenges faced by this project include:

- Benefits slow to be realised. As young goats were provided per village, participants had to wait for them to mature and give birth before milking. This also meant that some participants couldn’t remember how to milk due to the time elapsed since training.
- Only one dairy male in the village. In two villages, the male provided had died (and in one case been eaten!). Consideration should be given in future to rotating males between villages, or encouraging the sale of good quality male offspring to other villages to

\(^{17}\) using exchange rate of: 1 TZS = £0.00039964. Accessed on xe.com on 3\(^{rd}\) September 2012
maintain genetic variation. This can be achieved at minimal cost given the relative proximity of some of the villages.

- Hidden costs of the project incurred by villagers, primarily in the form of supplements and medicine. This varied by household and in line with the number of goats owned, with the highest cost quoted as 1,500TZS, or 60p\(^{18}\) per month.
- Inconsistent project management. This project had had 5 project managers since its conception and the delivery had inevitably suffered as a result.

**Fish**

Fish was very well received. Several group members had led by example and demonstrated the potential financial benefits to others. In one memorable case, the farmer had used his profits (150,000TZS, or £59\(^{19}\)) to buy an additional four acres of farmland, a new steel roof and contribute towards school costs. This would not have been possible without the project.

Once other villagers started realise the potential project benefits, fish farmers earned additional income from selling fingerlings to other farmers wishing to join in, extending the reach of the project. The main challenges faced by this project were:

- Sharing equipment. Several times farmers said that fishing was restricted by difficulties with getting enough people together to fish (the nets require at least 6 people to work together). In one village, this was overcome by the farmer paying helpers out of the resulting profits.
- Fish escaping. In Ilutila, one group of ponds was linked via an overflow system. At the last pond, it was highly likely that the fish had overflooded into the main waterway as a drain to prevent this was only added at a later date. It is not very large and so it is feasible that fish could still escape in wet season.
- Broader market access. Most of the fish are being sold locally. Participants are not drying fish to sell further afield. Whilst in the villages, dried fish was being sold that had been brought in from elsewhere, so the demand exists. If people were able to dry fish, it would open their access to other markets and help grow the project further.

**Fuel efficient stoves**

The Project Coordinator’s description of the project differed considerably to the field observations in terms of the numbers of stoves built, their adoption and the challenges

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\(^{18}\) Using an exchange rate of:1 TZS = £0.00039964. Accessed on xe.com on 3rd September 2012

\(^{19}\) See note above.
experienced by the villagers. This project was also the most extreme in terms of success and failure. The best village was Masisiwe, where the villagers had built more than 40 stoves. This success was not replicated elsewhere; there are few stoves and where they exist, not all are being used.

Stove users were generally very enthusiastic about the benefits, for example saying “it uses one third of the firewood that my traditional stove uses, so I can use the spare time on my farm”. Reduced smoke inhalation was not always mentioned but this could be because some of the stoves were built without chimneys.

The challenges faced by the project are as follows:

- **Stove design:**
  1. As they are designed to retain the heat, when it is cold, the modern stoves don’t keep the family warm. In many cases, the traditional open fire stove is a social focal point in evening. As a result, people with the modern stoves also still use their traditional stove
  2. In wooden kitchens, the stoves are too near to the walls and are a fire hazard
  3. People enjoy roasting maize on their fire. It is more difficult to do this on the modern stoves
  4. When modern stoves have not been used for a while, rats get in through the chimney. In some cases they have eaten the guinea pigs that are kept in the kitchen. As a result stoves have been dismantled

- **Fuelwood collection isn’t an issue. This is due to the prevalence of tree planting projects in the area.**

- **Costs incurred by the villagers, who had to buy/build the bricks for the stoves themselves (approximately 2,500TZS, or £1\textsuperscript{20}, without labour, based on 100TZS per brick and a standard size stove using 25 bricks).**

- **Project benefits the women, but relies on the men to build the stoves. As the men couldn’t really appreciate the benefits, they were not as positive about the project.**

**Rabbits**

The Project Coordinator’s description of this project differed considerably to the field observations. Although the numbers of rabbits remaining was not high, and the reasons for this are below, people generally enjoy keeping them, eating the meat and using the manure as

\footnote{\textsuperscript{20} using exchange rate of: 1 TZS = £0.00039964. Accessed on xe.com on 3\textsuperscript{rd} September 2012}
fertiliser. One person in particular had earned significant income (250,000TZS, or £99.50\textsuperscript{21}) from selling rabbits (unfortunately his last rabbits were killed by a dog earlier this year).

The challenges faced by this project were:

- **High mortality.** In the initial phase of the project there were problems with mange and worms. The rabbits often died before veterinary treatment was available, if it were sought.
- **Husbandry challenges.** If the rabbits bred successfully, the kittens often died at a young age potentially due to cold. The most successful owner had released the rabbits into his kitchen and they had burrowed to raise their young. This is not ideal as the rabbits could escape (and potentially become invasive). However, it suggests that with a creative approach to husbandry, a future rabbit project could still succeed.
- **Low visibility.** As the rabbits are kept indoors, they are not as easily observed as goats, for example. This also means that the villagers knew less about who owned rabbits. Often when asked, people said that the rabbits were all dead, which was not quite true. In addition, although many of the original rabbits had died, some second generation rabbits own by non-project participants were alive. It was only by following the suggestions of the villagers and using a snowball approach that we were able to locate 12 rabbits.

**Trees**

This programme was well received by the participating individuals and institutions. Its scope meant that it was eligible for more outcomes in Education & Awareness than other projects. It also benefitted from the halo effect of previous tree planting projects. Everyone understands the potential value of owning a woodlot, in spite of the length of time it takes earn money.

Even though people have been growing trees for many years, they still benefitted from the project training on planting and woodlot maintenance. Some had capitalised on selling seedlings in the early part of the project. They recognised that the species provided by the project are superior to those they have sourced privately. Adult participants were able to cite the benefits of the trees as being important for “bringing more rain”, “a good way to get lots of money” and “stops people needing to go to the forest for timber and fuel”.

The schools were extremely positive about the tree planting competition. One Headmaster said to us “even the smallest children in the village now know the importance of trees in the environment”. One school in particular earned 667,500TZS (£267\textsuperscript{22}) in 2011 from selling seedlings after the competition. This equated to 10% of its annual income for the year. The Headmasters

\textsuperscript{21} Using an exchange rate of:1 TZS = £0.00039964. Accessed on xe.com on 3\textsuperscript{rd} September 2012

\textsuperscript{22} See note above.
were enthusiastic about the competition made good suggestions, such as being given fruit trees to grow instead of pine to provide further health benefits to children through diet variety.

The challenges faced by this project were:

- Differences in implementation between villages. In Ilutila it was implemented as part of village development activity and so the project wasn’t well known to the village
- Being small in scale compared to other similar projects in the region that some of the villages had received, which made them look less favourably on it
- Limited participation in some villages where just people who were already involved in other tree planting projects took part

4.1.3 Independent Evaluation: project scores

The IE suggests that Trees is the best initiative (see Table 4.2 for a summary, the full details of outcomes achieved can be found in Appendix 1). This was primarily due to the outcomes achieved in Education & Awareness and minimal deductions in the Negatives category. Fish is second best, with the highest marks in the Legacy category and second lowest deductions in the Negatives category. The worst performing initiative was Goats. This is due to its low scores in Education & Awareness and Research & Planning, as a result of the poor training and lack of dairy goats, along with high deductions in the Negatives category. Overall, the initiatives performed in two groups, with a top four that performed well and a bottom three scored 30% or less than the theoretical maximum (275).

Table 4.2 Independent Evaluation results, ordering projects by best to worst achievement. Each category can score maximum 55 points. Theoretical maximum score of 275 (due to 275 positive points and zero negative ones). Numbers in brackets show the number of outcomes achieved per category.
On one hand, it could be considered that the initiatives scored relatively poorly, with the highest score of 60% of the theoretical maximum. On the other, it was noted at the outset that the outcomes were selected based on EAMCEF’s overall strategy and that the size of the initiatives would mean they were unlikely to be broad enough in scope to meet all the outcomes. In addition, although each programme includes at least one completed project, they are still less than five years old and the smaller scale means that it is taking some time for the projects to grow organically and accrue benefits. For example, Trees will not be ready to harvest for another decade; Goats required the livestock to mature before breeding. We have seen from the interview anecdotes that a subset of participants are enjoying socio-economic benefits resulting from the projects and typically these are proactive early adopters, who others are slowly beginning to copy.

Common themes of outcomes not achieved by the programmes include: (i) Research & Planning: a lack of baseline data gathered to inform systematic planning relating to specific threats (although this was highly important to EAMCEF); (ii) Species & Habitats: a lack of biological monitoring within the scope of the projects reviewed, or research projects funded during the same time period.

4.2 Villager Evaluation (VE)

4.2.1 Villager Evaluation: outcome prioritisation exercise and Kappa agreement
The FG outcome prioritisations were quite different and the Kappa statistic for all three groups was 0 or “poor agreement” (see Table 4.3). This was in spite of each group articulating logical, if diverse, rationales for their decisions. This is perhaps unsurprising as although from the same location, it is realistic to expect that the villagers are less likely to be united by shared conservation goals in the same way that people who work for an organisation are.

Table 4.3 Summary of results for Villager Evaluation Outcomes Kappa statistic of agreement analysis. Fleiss Kappa (1981) is shown for the individual categories and overall

<table>
<thead>
<tr>
<th>Outcome category</th>
<th>Kappa statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and Awareness</td>
<td>0.083 “slight”</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.083 “slight”</td>
</tr>
<tr>
<td>Species and Habitats</td>
<td>-0.167 negative</td>
</tr>
<tr>
<td>Legacy</td>
<td>0 “poor”</td>
</tr>
<tr>
<td>Negatives</td>
<td>0 “poor”</td>
</tr>
<tr>
<td>Overall</td>
<td>0 “poor”</td>
</tr>
</tbody>
</table>
This lack of agreement presents a challenge for the method, because if participants do not agree on what is important, the validity of using the median ranking to represent such diverse views is questionable. For the purpose of this study, which is primarily a methodological exercise, the decision was made to continue with the median. Future users should consider the design of the outcomes (although the purpose is not to create an obvious hierarchy for the outcomes, the differences between them may have been too subtle) and whether FGs are the best way to conduct the prioritisation.

One of the few points of agreement was within Education, with all the groups agreeing that “projects providing more environmental education in schools and clubs” was the most important outcome. They said this was because “to conserve the environment, you need the young people to take part.” In several cases, the outcomes that one might expect to be highest priority, for example “the project leads to improvements in the number of naturally occurring plants and animals in our environment” (Species & Habitat) were considered lowest priority overall. When asked, this was explained by some groups as being lower priority as “this [outcome] can’t happen without other changes happening first”, which provides an interesting insight into their logic.

4.2.2 Villager Evaluation: survey respondent backgrounds
The mean initiative awareness was 3.88 (see Table 4.4). This was higher than expected given that some of the projects only involved 10 people per village. In spite of the high awareness of projects, only 70% (n=132) had heard of EAMCEF and did not know where the projects had come from. Bees had the highest and Trees the lowest awareness of the projects delivered in all four villages. Involvement was surprisingly high at 28.8% of all participants. This could be due to the opportunistic sampling strategy, which was unavoidably limited by availability of participants due to the high numbers who were either at their farms or away earning money during the survey period.

Table 4.4 Table showing the frequency with which respondents were aware of numbers of projects in their village. Number of projects known could be between 0 and 5 (n = 132, mean = 3.88, SD = 1.15).

<table>
<thead>
<tr>
<th>Possible number of projects known by respondents</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency of responses</strong></td>
<td>1</td>
<td>3</td>
<td>15</td>
<td>23</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>
Table 4.5 Respondent awareness and involvement in specific projects. Project numbers do not add up to the overall total as respondents can be aware and involved in multiple projects. Overall numbers involved calculated based on involvement in at least one project.

<table>
<thead>
<tr>
<th></th>
<th>Bees</th>
<th>Goats</th>
<th>Fish</th>
<th>Fuel</th>
<th>Rabbits</th>
<th>Trees</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of respondents</td>
<td>122</td>
<td>101</td>
<td>61</td>
<td>90</td>
<td>61</td>
<td>77</td>
<td>132</td>
</tr>
<tr>
<td>aware of project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>15</td>
<td>38</td>
</tr>
<tr>
<td>also involved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of respondents</td>
<td>5.7%</td>
<td>5.9%</td>
<td>9.8%</td>
<td>6.7%</td>
<td>3.3%</td>
<td>19.9%</td>
<td>28.8%</td>
</tr>
<tr>
<td>involved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.3 Villager Evaluation: project results

According to the VE, the best project was Trees, with a score of 45.26 out of a possible maximum of 60 (see Figure 4.1). It achieved an average “yes” response of 81% across all of the positive outcomes. The second best project, Fish (22.02), scored less than half the number of points compared to Trees. The worst performing project was Fuel, with an overall score of 7.05. This was due to the poor adoption in most of the villages (except Masisiwe) and so the project was viewed negatively throughout.

![Figure 4.1 Barchart showing Villager Evaluation project score results. Scores calculated based on multiplying outcome prioritisation and villager survey responses per outcome. Maximum score per project of 60. Error bars calculated using 95% confidence interval](image-url)
4.2.4 Villager Evaluation: statistical analysis to validate three aspects of the method

Do villagers differentiate the project performance by the outcome categories?

When conducting the surveys, the villagers appeared to have strong opinions of each programme and were often either mostly positive or negative in all of their responses. If they provided the same response more than three times in a row, they were politely asked to explain their reasoning. In some cases, they could not provide an adequate explanation, but insisted on their original response. In addition, the villagers were reluctant to admit “I don’t know” and were also constrained by only being able to answer “yes” or “no”, rather than offer a scale of opinion.

Graphing the outcome category scores reflects that by initiative, the categories scored similarly (see Figure 4.2). This was supported by the Wilcoxon tests, which did not find the difference in performance by category significant.

This is not surprising for the best and worst initiatives, but perhaps is for the middle initiatives, where one might expect to see more varied results. This was reflected more clearly in the IE, where Fuel performed relatively well on the positive outcomes, but the overall score was brought down by the negatives. Plausible reasons for this include that in spite of the reduced list, there were still too many outcomes for the villagers to respond to accurately.

![Figure 4.2 Barchart to show Villager Evaluation project scores subdivided by outcome category. Project scores are calculated by multiplying the outcome prioritisation by the proportion of respondent agreement per outcome and totalling the results. Maximum total score is 60. Maximum score per outcome category is 15.](image-url)
Does village affect the performance of the projects?

It became clear very quickly that despite identical implementations and the close proximity of the villages, they had each received the programmes differently. This seemed to be due to a mixture of local attitudes, local leadership and, to some extent, luck. For example, most of the projects performed worse in Iiutila, where Bees experienced corruption and Goats had a high number of early deaths.

This is reflected graphically in the project scores by village (see Figure 4.3). The Kruskall-Wallis tests also suggest that results for Bees ($KW \chi^2 = 11.23, df = 3, p = 0.0105$), Goats ($KW \chi^2 = 50.64, df = 3, p = <0.0001$) and Fuel ($KW \chi^2 = 46.62, df = 3, p = <0.0001$) were significantly different by village. Trees has less differentiation, which is borderline significant ($KW \chi^2 = 7.21, df = 3, p = 0.0655$). This reflects that Trees performed consistently well throughout with the exception of one village, Iiutila, where the implementation was atypical. Fish and Rabbits results were not significant, but these were only measured in two villages. These results suggest that future evaluation sampling needs to be structured to include local differences between communities, even those similarly close in geography, culture and institutions.

![Figure 4.3 Barchart showing the Villager Evaluation project scores by average programme results in each village. Project scores are calculated by multiplying the outcome prioritisation by the proportion of respondent agreement per outcome and totalling the results. Maximum project score is 60. Error bars calculated using 95% confidence interval.](image)
Does involvement in projects make respondents more positive about them?

Anecdotally, people who participated in the projects were often keen to evangelise about them, rather than be critical. The number of respondents involved per project was too small to permit analysis by individual project so it was completed based on the overall results. The Mann Whitney tests found the difference in results between those involved and those aware to be highly significant (w = 32566.5, p = 0.0002).

4.3 Comparing the results of the two approaches

The results of the two different approaches have returned similar rankings (see Table 4.6). They agreed on the order of the first four projects, but transposed Fuel and Goats (IE ranked Fuel higher).

Table 4.6 Comparison of project results between Independent Evaluation and Villager Evaluation using project rank order (1-6)

<table>
<thead>
<tr>
<th></th>
<th>Trees</th>
<th>Fish</th>
<th>Bees</th>
<th>Fuel</th>
<th>Rabbits</th>
<th>Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>VE</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Taking account of the limitations of the study in terms of being able to make direct comparisons, it could be inferred that the ranking suggests the villager perceptions of the programmes are broadly consistent with the more detailed IE. This implies that perhaps that fewer outcomes than currently included in the IE are required to evaluate projects.

This is a useful validation of the credibility of the VE, but should be treated with caution. In terms of the actual scores, the VE were more polarised than the IE, with Trees performing significantly better than the other programmes. This could be due to the higher number of involved respondents in this project (n=15). However, it is also probable that the VE was influenced by the halo effect of other similar initiatives and that Trees has been scored based on future potential, rather than benefits seem to date. Confounding factors like these can be addressed through the IE, but future research would need to properly quantify their impact in the VE using the current method. That said, the VE still provides valuable insight into villager opinions of the projects and opportunities for improvement.
5.0 **Discussion**
In this section, we will first discuss the RO approach, then lessons learned during the process for EAMCEF, before concluding with future recommendations.

5.1 **Evaluating the Evaluation method: how did RO perform?**
Referring back to Mascia et al’s (in review) evaluation typologies, RO seems to sit between “performance measurement” and “impact evaluation” on their continuum (see Table 2.1). It is flexible enough to include inter-disciplinary positive and negative outcomes; can be scaled up to provide a structure for interpreting quasi-experimental analyses (although these were out of scope for this study) and can support an adaptive management approach. We will now discuss each of these features in turn.

5.1.1 **Breadth of outcomes**
Progress cannot be measured against ambiguous objectives. One of the challenges often identified with conservation evaluations is a lack of, or poorly defined, goals (Clarke, 1996). RO compensated for this by (re)agreeing strategic priorities at the beginning of the process. It is stakeholder-inclusive and the outcomes can also be defined after a programme has begun, so can address situations where objectives are unclear or evaluation unplanned at the outset.

Although RO sets measurement parameters, care should be taken upfront to make sure that the outcomes are correctly defined. Taking from the management science literature, one of the challenges of setting objectives is to ensure that they are “mutually exclusive, but collectively exhaustive” (Rasiel, 1999).

In this context, this means ensuring that the outcomes selected are broad enough in scope to cover all priorities, but not so numerous that they are indistinct from one another. If the outcomes are too similar, the prioritisation is less meaningful because participants struggle to differentiate between them. It also means that evaluators need to ensure projects do not benefit multiple times for the same achievement where it could be counted under multiple outcomes. Breadth of outcomes is important as the outcomes should be used as a target for everything an organisation might want to achieve; if there are too many, though, the results can become convoluted to articulate and the lessons learned messages diluted as a result, which detracts from the benefits of the exercise.

One way to streamline the number of outcomes could be to adapt RO to include a scale to score the outcomes against, similar to Goal Attainment Scaling, a tool that originated in clinical fields (Marson et al., 2009). It is similar to RO, but outcomes are measured against a five-point scale, for
example, -2 to +2 where -2 is a deterioration in status, 0 is neutral and +2 shows a considerable improvement. This would complement RO by allowing progression to be demonstrated through repeat evaluations, which lends itself to adaptive management. It would also allow for the removal of the negatives category as all outcomes could theoretically be worse off at a given point in time. Streamlining and scaling is relevant to both IE and VE.

5.1.2 Incorporating experimental / quasi-experimental analysis into the RO framework
The scope of this study was limited to trialling the RO method based on the best available data considering time and resource constraints. An evaluation can only be as good as the raw data under consideration and RO is no different. One of its benefits, though, is that it can be scaled up or down according to the needs of a situation. If quantitative data is limited, or a rigorous impact evaluation is not feasible, then RO can function as “Performance Measurement” (Mascia et al., in review) by relying on expert opinion and secondary sources. Alternatively, if a full scale impact evaluation is desirable, then RO lends itself to bringing together biological, social and economic data into a single piece of analysis.

The literature on conservation evaluation is unequivocal about the complexities of proving incremental conservation benefits arising from specific initiatives (Ferraro & Pattanayak, 2006). A major weakness of this study is that it could not, based on the available data, attribute any conservation benefit, other than anecdotal feedback provided by the villagers, specifically to the programmes evaluated. Systematic monitoring is required to evaluate the long term relative success of different conservation strategies (Brooks et al., 2006). This study was limited by the written reports available (which were short, focussed on outputs and descriptive rather than based on hard data); without fieldwork to gather supplementary information, the IE would have been compromised. If up-to-date monitoring data were available, a truly scientific analysis may have been impeded by the number of similar initiatives taking place. This particularly affects the VE, where villagers may not be able to distinguish between the benefits of one different projects.

For example, both Trees and Fuel sought to reduce dependency on fuelwood collection. It is arguable that reduced visits to USFR for this purpose could be due to Trees providing plenty of offcuts, or Fuel reducing the frequency of collection. In three of the four villages, Fuel performed poorly, so it is clearer that any benefit may be due to Trees. However, in Masisiwe, the difference between the programmes was not so distinct.

The advantage of RO is that even in a challenging environment for evaluation, it provides a structure for gathering valuable insights, including informing the design of future, more in-depth and therefore costly, evaluations.
5.1.3 Fit with adaptive management
The process of conducting an evaluation supports organisational learning (Cundill & Fabricus, 2009). The outcomes provide a structure that can be used to target specific improvements and is easily communicated. RO can be completed during and post implementation, so can underpin continuous improvement.

We have seen from the literature that successfully implementing ICDPs is difficult and requires a flexible approach, based on following what works (Horwich & Lyon, 2007). Whilst EAMCEF and their partners are limited to working within current constraints of “what is possible now”, they should aim towards a best practice ideal, or “what could be” (Keen & Mahanty, 2005). In my opinion, regular evaluations using a framework like RO that incorporates outcomes as well as outputs would support this process.

5.2 Considerations for EAMCEF
5.2.1 Conservation versus development
Adams, et al. (2004) characterise the relationship between conservation and development into four typologies. These range from “conservation and poverty are entirely unrelated”, to “poverty cannot be eliminated without addressing biodiversity conservation”. The approach adopted by EAMCEF fits closest to their second typology: “poverty is a critical constraint on conservation”. Proponents of this position view that conservation efforts will fail unless poverty is eliminated first. However, the complexity of the interactions between the two disciplines should not be underestimated.

As development progresses, there is the possibility of conflicting objectives. This is possible in the case of Trees. One participant said to us: “the thing that we really need is better roads, if we had better roads we could sell things far away and make more money. But the roads will come because of the trees. Once the trees have grown there will be demand for better roads”. So, Trees has the potential to provide income and reduce endogenous pressures on USFR, and longer term to improve the infrastructures that enable local people to earn more from their other produce. Simultaneously, though, the improved infrastructure will facilitate access to the area and could increase exogenous pressures on USFR.

Trees, also the most successful programme, had a clear link between potential income earned and conservation. This was understood by the wider community, even the children. This link was not explicit with some of the other programmes, such as Goats, where the economic benefits were minimal and instead more related to intrinsic ownership values. From EAMCEF’s perspective, ensuring the same level of clarity as Trees in terms of the centrality of conservation
to future initiatives is critical to avoid inadvertently diluting their conservation agenda (Salafsky, 2011).

5.2.2 Conditionality
One of the critical aspects of designing ICDPs is to balance the positive incentives of development with appropriate regulation to impose conditionality (Brandon & Wells, 1992). Without it, there is a risk of free riders who take advantage of the development initiatives, without fundamentally changing their behaviour (Gibson & Marks, 1995).

Although EAMCEF have supported improving the legal protection for USFR and provided incentives to discourage the need for access to it, conditionality is not currently imposed within the scope of activities funded. Some ad hoc patrols are taking place, but the frequency and drivers for these varied by village. In addition, most villagers interviewed were not aware of the number or frequency of patrols. EAMCEF should consider how conditionality could be incorporated for USFR as well as other priority areas through their project partners.

We have seen that a current concern regarding ICDPs in Tanzania is that communities adjacent to PAs suffer a net negative economic impact (for example Vyamana, 2009). There was limited evidence that these study villages were worse off; although there were hidden costs of the programmes, which included isolated cases of incremental costs of medicine or supplements for livestock, or costs of bricks for stoves. In this case, the negative impact was probably limited by two factors: the lack of conditionality imposed and small scale of the programmes.

5.2.3 Scale and scope
Is it better to deliver a few projects to a couple of communities and do it well, or cover a broad area with many activities and not do them justice? ICDP practitioners need to weigh up a number of dimensions when designing a project: the geographic reach (scale), the range of activities (scope), the resources available required (intensity) and the time taken to implement (time) (Brandon & Wells, 1992). A project with high intensity and low scope will be more likely to succeed than one with high scale but low intensity. Equally, a project with low scale and high intensity may be successful, but not have a broad enough reach to conserving a PA. The authors (Brandon & Wells, 1992) consider a study in Thailand where a protected area had more than 100 adjacent villages, but only 11 fell within the scope of the ICDP. As a result it was difficult to argue that the projects were reducing the threats to the PA.

23 The Boundary Management programme, excluded from this thesis, does not include patrols or law enforcement within its remit
With regards to scale, the study villages\textsuperscript{24} are those in Kilolo that border USFR, but there are other villages within reasonable distance to be able to access its resources. In terms of scope, implementing six initiatives between all six villages is a lot to execute properly, given that individually, each of the programmes were relatively low intensity in terms of funding designated for communications, training and capital resources.

EAMCEF operate with limited funds and it is sensible to focus funds where the threat is proven to be highest. Limited funding also requires creative spending to maximise the return. Supporting fewer projects, or splitting them between fewer villages, while maintaining expenditure could allow a commensurate increase in intensity, and greater impact, per project.

5.2.4 Trees or bees?
In the IE, we have seen that Trees was the most successful initiative. However, in their current format, neither the IE nor the VE consider the size of financial investment, or other inputs to the initiatives, such as time. This makes comparisons between the initiatives misleading. For example, if considering projects on a point per pound Return on Investment (ROI) basis, Rabbits actually performs the best and Trees last (see Table 5.1)

Table 5.1 Table showing Return on Investment of EAMCEF projects in terms of IE points achieved per pound spent. Expenditure per village is achieved by dividing the amount spent by the number of villages who received the programme. The cost of each point is calculated by dividing the amount spent by the number of Independent Evaluation points scored by a project.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Rabbits</th>
<th>Bees\textsuperscript{25}</th>
<th>Fish</th>
<th>Fuel</th>
<th>Goats</th>
<th>Trees\textsuperscript{26}</th>
</tr>
</thead>
<tbody>
<tr>
<td>£ spent (£000s)\textsuperscript{27}</td>
<td>1.18</td>
<td>5.37</td>
<td>6.95</td>
<td>4.80</td>
<td>5.39</td>
<td>17.06</td>
</tr>
<tr>
<td>Number of villages\textsuperscript{28}</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Expenditure per village (£000s)</td>
<td>0.59</td>
<td>0.90</td>
<td>3.48</td>
<td>0.80</td>
<td>0.90</td>
<td>2.84</td>
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<tr>
<td>£ per point scored</td>
<td>18.78</td>
<td>39.50</td>
<td>44.98</td>
<td>62.75</td>
<td>89.85</td>
<td>104.00</td>
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<tr>
<td>ROI Ranking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Original Ranking</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

\textsuperscript{24} As noted earlier, only four of the six were included in this study due to accessibility.
\textsuperscript{25} Some of the Bees and Trees projects were submitted under the same proposal. The budget itemisation was used to divide the expenditure by project.
\textsuperscript{26} See note 25.
\textsuperscript{27} Based on expenditure on project themes at point of evaluation, using exchange rate of: 1 TZS = £0.00039964. Accessed on xe.com on 3rd September 2012.
\textsuperscript{28} Although the study only includes four villages, Bees, Goats, Fuel and Trees were implemented in six. The budgets have not been adjusted to reflect this as costs were not itemised by village. The row “Expenditure per Village” is intended to put the costs into context instead.
Fish, which is the second most expensive project in total, was only implemented in two villages, so had the highest investment per village but ranked third in terms of ROI. Bees and Goats, which finished third and sixth respectively after the IE, both move up a position in the rankings due ROI.

Whilst this is a simple calculation, it illustrates the difference made by incorporating costs in the evaluation. Although this puts some of the poorer performing projects in a better light, it should also be viewed critically; Rabbits may have been better value, but its impact was tiny and its legacy non-existent. Trees was much broader in scope and so were able to achieve more. It also does not mean that spending ten times as much on Rabbit projects would automatically yield an equivalent increase in outcomes achieved.

Incorporating ROI is viewed by some as the logical next step in the evolution of conservation planning (Murdoch et al., 2007). It would be useful for future research to examine the relationship between expenditure and project performance according to RO in more detail. For a funder like EAMCEF, it would be particularly helpful to understand the relationship between financial and resource investments and a given level of impact so that their strategy could be tailored accordingly.

5.3 Recommendations

5.3.1 Ranked Outcomes: future application and research

This study has shown that both the IE and VE have their own merits. The IE allows a broader range of outcomes to be measured and allows both qualitative and quantitative data to form part of the assessment. It can be adapted to incorporate data from systematic monitoring where it is available, but is not limited to being used in this way. The VE lends itself to adaptive co-management where practitioners desire to work collaboratively with communities (Cundill & Fabricus, 2009). Both approaches fit into practitioner’s evaluation toolkit as there are some measures that are relevant to the funder but not the villagers; equally there are some outcomes that only the villagers can provide an answer to.

There are some opportunities to improve both methods. These include:

- Streamlining outcomes to ensure that they are mutually exclusive, but collectively exhaustive (IE, VE)
- Scaling outcomes, rather than using a binary approach which will add depth to the evaluation (IE, VE)
- Removing categorisation as it does not appear to be adding value (VE)
- Quantification of confounding factors to provide a more robust analysis (VE)
• Incorporating ROI measures into the broader evaluation (IE, VE)

As has already been noted, a greater understanding of the determinants of ICDP scores, including inputs, would be valuable to organisations like EAMCEF to structure their future strategy. Future analyses should consider involvement levels of respondents; ensuring data can be subdivided by geography, even where local differences appear minimal and testing removing the outcome categorisation.

5.3.2 EAMCEF recommendations
EAMCEF should consider how to work with their Project Coordinators using adaptive management. Part of this approach necessitates on-going monitoring of both biological and social parameters in order to improve the understanding of the performance of the projects in both conservation and development terms.

EAMCEF should consider altering the scale and scope of future activities to ensure that they get the right intensity of resources (human and capital) to have the desired level of impact. We have seen that the bigger projects in the study have been more successful, albeit with a lower ROI.

Where conservation outcomes from an initiative aren’t explicit, there is a risk that they will not ensue without conditionality. Conditionality needs to be incorporated as part of their strategy, to get the right balance between incentives and managing USFR. This may not have been financially possible in the past, but once USFR has nature reserve status is something that should be incorporated into the future management plan.

5.3.3 Concluding remarks
In this study we have tested a newly published evaluation method in two ways. In doing so it has highlighted some of the factors that can affect conservation evaluations. Some of these challenges, such as objective setting, are addressed through the Ranked Outcomes approach; others need to be worked through according to the local situation by taking a flexible, adaptive management-based approach.

This case study has simultaneously provided a check point on the progress of EAMCEF’s alternative livelihood programmes, but it is still too soon to see the benefits to USFR. Without long term data collection of both socio-economic and biological indicators, it will not be possible to see the change in state resulting from their programmes. However, the local implementation will make it difficult to attribute the benefits specifically to each intervention.

RO, whether IE or VE, is a useful framework for the conservation practitioner’s toolkit. The VE requires some further development and both would benefit from incorporating costs. To meet
the challenge posed by the biodiversity crisis, conservationists need to put critical evaluation at
the heart of every project to foster systematic learning and continuous improvement.
References


EAMCEF. (February 2012). *Guidelines for preparation of project proposals and procedures for making grants*. Morogoro: EAMCEF.


**Bibliography**


## Appendix 1 – Independent Evaluation Outcomes, prioritisation and project scores

<table>
<thead>
<tr>
<th>Outcome</th>
<th>OUTCOME RANK</th>
<th>OUTCOME SCORE</th>
<th>Bees</th>
<th>Goats</th>
<th>Fish</th>
<th>Fuel</th>
<th>Rabbits</th>
<th>Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and awareness</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Improved capacity of the people directly involved</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Improved awareness about conservation</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Increased support for conservation</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Increased knowledge of conservation for people not directly involved in the project</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Voluntary actions taken by the community to continue conservation education:</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Strengthening of / support for schools / wildlife clubs to teach environmental education</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>9</td>
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<tr>
<td>Strengthening of / support for current courses run by host country university</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Strengthening of / support for establishment of environmental education within national curriculum</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Research and Planning</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Implementation methodology developed, tested, established and documented as repeatable</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>6</td>
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<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Baseline data is obtained, e.g. relating to threats or awareness</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Data is collected and applied to sustainable use programmes</td>
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<td>7</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Pioneering research studies are promoted and completed</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>New species are discovered / bioactive extracts discovered / key species identified</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Identification systems for species are developed</td>
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<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Contributions are made to red data lists / IUCN categories</td>
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<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Contributions are made to peer reviewed journals in host country and internationally</td>
<td>10</td>
<td>1</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strategic management plan is managed adaptively: influence of results on management plans is evident (e.g. conservation strategies changed accordingly)</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Strategic management plan: successfully implemented (not just drawn up)</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

**Infrastructure**

| The necessary physical structures are in place to facilitate conservation activities, e.g. field stations set up, production facilities are in place | 2 | 9 | 1 | 9 | 1 | 9 | 1 | 9 | 1 | 9 | 1 | 9 | 1 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The right governance structures are in place to allow the project to flourish on its conclusion, e.g. operational NGOs established, regional advisory committees are set up | 3 | 8 | 1 | 8 | 1 | 8 | 1 | 8 | 1 | 8 | 1 | 8 | 1 | 8 | 1 | 8 |
The right community governance structures are in place to support the project within and beyond its duration, e.g. local conservation committee, community forestry department

<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>6</th>
<th>1</th>
<th>6</th>
<th>1</th>
<th>6</th>
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<th>1</th>
<th>6</th>
<th>1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>The capital resources required for the project (e.g. seedlings, hardware) are provided</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>The capital resources required for the project (e.g. seedlings, hardware) are used sustainably</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Jobs are created for those not directly involved in the project, e.g. builders, or other trainees</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Alternative livelihood options are up and running</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>There is directly / indirectly an increase in the quality and quantity of existing livelihood options, e.g. ecotourism</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>The right legal structures are in place to support the project at a community, regional and national level</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Improvements to existing infrastructures are made, e.g. botanic gardens or museums</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</table>

Species and Habitats

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>7</th>
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<th>0</th>
<th>0</th>
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<th>0</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved legal protection for priority conservation areas, e.g. gazetting new reserves, expanding existing ones or upgrades to legal status, e.g. to national park or UNESCO</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Improved physical protection for priority conservation areas, e.g. creation of physical boundaries or ranger systems</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Increased awareness of priority species and habitats</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3
| **Sustainable monitoring programmes initiated** | 8  | 3  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| **Legislation put in place to protect specific species or habitats (e.g. hunting bans, quotas on collection, control measures for illegal trade or collection)** | 9  | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| **Creation of appropriate ex situ conservation strategies** | 6  | 5  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| **Local improvements in environment are made (e.g. reforestation)** | 3  | 8  | 1  | 8  | 1  | 8  | 1  | 8  | 0  | 0  | 0  | 1  |
| **Dependency on natural forest resources is reduced (e.g. protein or NTFP)** | 5  | 6  | 1  | 6  | 0  | 0  | 1  | 6  | 1  | 6  | 1  | 6  |
| **Infractions, e.g. illegal logging or bushmeat hunting, are reduced** | 2  | 9  | 1  | 9  | 0  | 0  | 0  | 1  | 9  | 0  | 0  | 1  |
| **There are improvements to the status of species:** | 10 | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |

**Legacy**

<p>| <strong>The project leaders start similar future projects (i.e. money found for post project work)</strong> | 3  | 8  | 1  | 8  | 1  | 8  | 1  | 8  | 1  | 8  | 0  | 0  |
| <strong>Other organisations are inspired to establish similar projects</strong> | 6.5 | 4.5 | 0  | 0  | 0  | 0  | 0  | 0  | 1  | 4.5 | 0  | 0  |
| <strong>The local community is inspired to start its own projects and initiatives</strong> | 2  | 9  | 1  | 9  | 0  | 0  | 1  | 9  | 1  | 9  | 0  | 1  |
| <strong>A network of conservationists/scientists is established</strong> | 8  | 3  | 1  | 3  | 1  | 3  | 1  | 3  | 0  | 0  | 0  | 0  |
| <strong>The project work is recognised at international level, e.g. collections/data/methodology are used by other researchers and practitioners</strong> | 5  | 6  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |
| <strong>Project members or trainees gain permanent positions within conservation</strong> | 9  | 2  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |</p>
<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
<th>Negative Count</th>
<th>Count</th>
<th>Negative Count</th>
<th>Count</th>
<th>Negative Count</th>
<th>Count</th>
<th>Negative Count</th>
<th>Count</th>
<th>Negative Count</th>
<th>Count</th>
<th>Negative Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project members or trainees gain high profile positions within host country, e.g. on advisory boards</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project leads to long term job creation in the local community</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project leads to improvements in social infrastructure e.g. health and schools</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project expands to include additional communities, regions or countries (over and above those planned for)</td>
<td>6.5</td>
<td>4.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4.5</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td><strong>Negatives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project doesn’t deliver the promised outputs, e.g. workshops, dissemination of materials, training</td>
<td>5</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project experiences bureaucratic/logistical issues, which lead to missed milestones e.g. difficulty obtaining permits, inability to acquire resources</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project experiences budgetary issues, e.g. corruption or loss of funding from other bodies, underestimation of costs/revenues</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project design is flawed as the strategy is inappropriate, e.g. method poorly designed, lack of community interest, unrealistic goals</td>
<td>4</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>1</td>
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<tr>
<td>The project experienced a high staff turnover which impacted the overall quality of the delivery</td>
<td>10</td>
<td>1</td>
<td>0</td>
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<td>1</td>
<td>1</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
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<tr>
<td>The project was not inclusive of the community, e.g. either not consulting them appropriately or not benefiting a broad spectrum of participants</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>4</td>
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<td>The project had negative ecological consequences</td>
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<td>-------</td>
</tr>
<tr>
<td>The project had negative economic consequences for the local community</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project did not address conservation threats, e.g. conceptually or unproven through monitoring</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>The project did not have a secure exit strategy so any benefits were only accrued within its lifetime</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>0</td>
<td>0</td>
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<td>9</td>
<td>1</td>
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<table>
<thead>
<tr>
<th></th>
<th>Total positives score</th>
<th>154</th>
<th>94</th>
<th>163.5</th>
<th>115.5</th>
<th>83</th>
<th>168</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total negatives score</td>
<td>18</td>
<td>34</td>
<td>9</td>
<td>39</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Overall score</td>
<td>136</td>
<td>60</td>
<td>154.5</td>
<td>76.5</td>
<td>63</td>
<td>164</td>
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<tr>
<td></td>
<td>Rank position</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix 2 – Independent Evaluation - Focus group protocol

Focus Group Outline and Script

Background

Objectives:

- Understand the profile of the people participating
- To put them at ease to give honest responses by having fun
- To get a sense of what the environment/conservation means to them
- To prioritise the outcomes list

Target Audience: 10 people, mixture of genders and ages for each session (there will be 2 plus a pilot)

Duration: estimated 1.5 hours, test at pilot

Layout: seats in a circle, preferably. Researchers mixed into the group. Table / chairs to put pre-prepared materials on.

Roles: 1 person to lead (KS), 1 person to make notes as directed, 1 person to keep the time and take pictures, everyone to help translate when needed! Everyone to participate in the introductions and first exercise to encourage the group to take part

Agenda

1. Introduction to the session (5 minutes)
2. Meeting the group and relaxation exercise (5 minutes)
3. Exercise 1: what does the environment mean? (15 minutes)
4. Exercise 2: outcomes prioritisation (5x 5 groups of outcomes) (1 hour)
5. Thank you and close (5 minutes)

Introduction to the Focus Group- KS (5 mins)

Hello and welcome to this focus group today, thank you for coming along, you are very welcome. I hope you are well?

My name is Mwenda and I come from England. I am a student studying Conservation at university. I am learning Kiswahili! So please could I ask that you speak slowly and if I still don’t understand, don’t worry, one of my helpers will be able to translate! Also, if you don’t understand me, or what to do, please put up your hand and we will try to explain better.

As part of my degree I am doing research into the Eastern Arc Mountain Forests. Please put your hand up if you have heard of the Misitu ya Milima ya Tao la Mashariki [count number of hands].

Can anyone tell me what they are? [note down responses]

This meeting today is to help me with my research by finding out from you what you think is most important to help conserve the environment. And hopefully have some fun too. To help us today,
I have some assistants, they are: ..., .... They will be helping with the exercises, making notes and taking some pictures. Is that OK?

Please be reassured that this room is an informal and confidential place and you should feel able to express your opinions honestly and freely! To help with that we will first do a quick introduction exercise so that I can get to know you a bit better. Then we will be drawing a few pictures and finally doing the main exercise, which will take about an hour to do. We will be taking a list of things that a conservation project could achieve and I will be asking you to help me put them into the order of what you think will have the biggest impact on the environment.

We will be finished, hopefully by about XXX. I will do my best to keep to this time, so if we are going a little slowly I may hurry you along!

Does anyone have any questions?

**Meeting the group and relaxation exercise (5 mins)**

*Purpose: for everyone to introduce themselves and to profile the audience*

*How: asking people a series of questions to sit down/stand up to give their answer. The numbers standing/sitting to be recorded for background later.*

*Materials required: post-its for names, pen and pins*

*Time allowed: 5 mins in total*

*Who: everyone*

OK, so to introduce ourselves, I would like you to each tell us your name, one by one [asst to write name on paper and pin it to person]

Thank you. Now I am going to ask a series of quick questions and I would like you to stand up or sit down, depending on your answer [assistant to note down the numbers standing after each question, excluding the leader/assistants]

- a) Stand up if you live in Idegenda village
- b) Stand up if you know anyone else here
- c) Stand up if you are related to anyone else here
- d) Stand up if you are married
- e) Stand up if you have children
- f) Stand up if you went to school
- g) Stand up if you went to primary school
- h) Stand up if you went to secondary school
- i) Stand up if you have a radio at home
- j) Stand up if you have a TV at home
- k) Stand up if you are involved in beekeeping
- l) Stand up if you are involved in fish farming
- m) Stand up if you keep dairy goats
- n) Stand up if you use a fuel efficient stove
Exercise 1: what does the environment mean? (15mins)

**Purpose:** To get a sense of whether the group are environmentally conscious and what it means to them. To produce the queue cards for Exercise 2

**How:** Ask the group to individually draw pictures of a well conserved environment. NB, these pictures are not intended to be analysed scientifically, but to warm the group up and getting them thinking about the environment.

**Materials:** 1 piece of plain A4 paper per person, pencils, pens, felt tips, something to lean on, blutack/cellotape

**Time allowed:** 2 mins to instruct, 7mins maximum to draw, 6 mins to collect and comment.

**Who:** everyone

Right! Now we are going to be a little bit creative. Here I have some paper, pencils and pens and I would like you each to take one [passes them around]. We will have to share the colour pens!

*[When everyone has materials]*: Now I would like you each to draw a picture of the environment and what it means to you. For me it is something like this [draws a cartoon picture]. We will not be judging your art, so please just give it a go!

*[Group does drawing]*

Fantastic! Could you all please hold up your pictures? Ok, so we have some trees, water, animals, ... describe... lovely.

*[assistant to collect the pictures and put them up on the wall on opposite sides of the room in preparation for the next exercise. They should be split 70/30 between the two long sides of the room and attached with blutack. While this is happening, the next exercise can be explained.]*

Exercise 2: outcomes prioritisation (5x 5 groups of outcomes) (1hour)

**Purpose:** To rank the outcomes. In the pilot, make sure they are the right ones

**How:** For each outcome group, give a villager one outcome each. Ask them to agree whether it is likely to result in a more conserved environment or a less conserved environment. If more, they should stand in the side of the room with lots of pictures of the environment. If less, they should stand by the fewer pictures. Do this one outcome at a time so that it is easier for them to agree the relative positioning of them. Once all 5 in a group are ranked, then note down the positions and collect the papers. Then move onto the next group of outcomes until they are all complete.

**Materials:** outcomes printed on A4 paper in 5 piles and in plastic wallets (so can be reused). Pen to mark the order
Time allowed: 10mins per outcome group, although the first few may take longer and the remainder may be a bit quicker as we get into the flow.

Who: only villagers

Roles: KS to lead, but will require much more support with helping explain the outcomes to the villagers and moving them around as the exercise gets going.

Right, while they are put up, I will explain what we are going to do next.

Here I have 5 categories of things that conservation projects can achieve that could have a positive impact on conserving the environment. In each category there are 5 statements, for example [read one]. We are going to order the statements from the one that you think will have the biggest impact on conserving the environment so there is lots for future generations to enjoy (which is the part of the room with most of your pictures on it, [points]), to the one that you think is least important (so will lead to less environment for people to enjoy [points]). We will do this by thinking about the statements one by one and putting them in a line from the side of the room that has the most of your pictures of the environment, [points] to the end of the room that has the least.

Any questions? OK, let’s all stand up and move the chairs to the side of the room.

The first category is Education and Awareness.

The first outcome is [outcome1] [Read it out and give it to someone to hold up]. Do you think this has a big impact on conserving the environment, or not very much? [person with card to stand on appropriate side of room. once agreed, move on]

The second outcome is [outcome2] [Read it out and give it to someone to hold up]. Do you think this has a big impact on conserving the environment, or not very much? Do you think it is more important or less important than Outcome 1? [person with card to stand on appropriate side of the room on the agreed side of outcome 1. once agreed, move on]

The third outcome is [outcome3] [Read it out and give it to someone to hold up]. Do you think this has a big impact on conserving the environment, or not very much? Do you think it is more important or less important than Outcome 1, or 2? [person with card to stand on appropriate side of the room on the agreed side of outcome 1 and outcome 2. once agreed, move on]

[Repeat until all 5 are ordered. Note down the order and collect the outcomes in the order highest to lowest importance. Move onto next category.]

[PILOT only: if none of the outcomes in a category are considered to be important, but the list gets ordered at the least important end of the room, ask the group what they think would be important and remove the least important item for full groups]

Thank you and close KS (5mins)
Well, that is the end of our meeting today. The work you have done is extremely useful to me and will be included in my research report. Thank you very much for your time and attention. Before we all leave, does anyone have any final questions?
### Appendix 3 - Villager Evaluation – prioritised list and project results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Rank</th>
<th>Score</th>
<th>Bees % agreed</th>
<th>Bees Score</th>
<th>Goats % agreed</th>
<th>Goats Score</th>
<th>fish % agreed</th>
<th>fish Score</th>
<th>Fuel % agreed</th>
<th>Fuel Score</th>
<th>Rabbits % agreed</th>
<th>Rabbits Score</th>
<th>Trees % agreed</th>
<th>Trees Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased awareness in the whole community of the need to conserve natural forest resources</td>
<td>3</td>
<td>4</td>
<td>47%</td>
<td>1.65</td>
<td>40%</td>
<td>1.40</td>
<td>37%</td>
<td>1.28</td>
<td>28%</td>
<td>0.97</td>
<td>33%</td>
<td>1.17</td>
<td>84%</td>
<td>2.94</td>
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<tr>
<td>Increased the ability of people directly involved in the project to conserve natural forest resources</td>
<td>5</td>
<td>1</td>
<td>44%</td>
<td>0.44</td>
<td>44%</td>
<td>0.44</td>
<td>48%</td>
<td>0.48</td>
<td>25%</td>
<td>0.25</td>
<td>35%</td>
<td>0.35</td>
<td>80%</td>
<td>0.80</td>
</tr>
<tr>
<td>Increased the knowledge in the whole community about what to do to conserve natural forest resources</td>
<td>3</td>
<td>4</td>
<td>44%</td>
<td>1.55</td>
<td>38%</td>
<td>1.33</td>
<td>42%</td>
<td>1.46</td>
<td>25%</td>
<td>0.89</td>
<td>30%</td>
<td>1.05</td>
<td>81%</td>
<td>2.85</td>
</tr>
<tr>
<td>More environmental education in schools and clubs</td>
<td>1</td>
<td>5</td>
<td>7%</td>
<td>0.37</td>
<td>8%</td>
<td>0.40</td>
<td>17%</td>
<td>0.83</td>
<td>9%</td>
<td>0.47</td>
<td>3%</td>
<td>0.16</td>
<td>77%</td>
<td>3.83</td>
</tr>
<tr>
<td>The community has been inspired to run its own conservation activities, independently of the project</td>
<td>4</td>
<td>2</td>
<td>63%</td>
<td>1.26</td>
<td>53%</td>
<td>1.07</td>
<td>52%</td>
<td>1.03</td>
<td>38%</td>
<td>0.75</td>
<td>62%</td>
<td>1.25</td>
<td>80%</td>
<td>1.61</td>
</tr>
<tr>
<td>Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project set up a community committee to help run the project</td>
<td>4</td>
<td>2</td>
<td>70%</td>
<td>1.40</td>
<td>59%</td>
<td>1.19</td>
<td>72%</td>
<td>1.43</td>
<td>38%</td>
<td>0.75</td>
<td>72%</td>
<td>1.44</td>
<td>84%</td>
<td>1.68</td>
</tr>
<tr>
<td>The project provided all the necessary resources to the people taking part, e.g. plants and seedlings</td>
<td>2</td>
<td>4</td>
<td>63%</td>
<td>2.50</td>
<td>41%</td>
<td>1.64</td>
<td>60%</td>
<td>2.40</td>
<td>23%</td>
<td>0.92</td>
<td>38%</td>
<td>1.53</td>
<td>76%</td>
<td>3.04</td>
</tr>
<tr>
<td>The project has encouraged a wide range of people in the community to take part</td>
<td>1</td>
<td>5</td>
<td>42%</td>
<td>2.08</td>
<td>40%</td>
<td>2.00</td>
<td>55%</td>
<td>2.75</td>
<td>23%</td>
<td>1.15</td>
<td>32%</td>
<td>1.58</td>
<td>85%</td>
<td>4.27</td>
</tr>
<tr>
<td>The project has increased the number of jobs available in the community</td>
<td>5</td>
<td>1</td>
<td>36%</td>
<td>0.36</td>
<td>33%</td>
<td>0.33</td>
<td>47%</td>
<td>0.47</td>
<td>15%</td>
<td>0.15</td>
<td>25%</td>
<td>0.25</td>
<td>79%</td>
<td>0.79</td>
</tr>
</tbody>
</table>
The project has set up livelihoods that are now earning money for people taking part

<table>
<thead>
<tr>
<th>Species and Habitats</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project has increased community awareness of the unique animals and plants that live nearby</td>
</tr>
<tr>
<td>The project has completed activities that improve our community environment, for example through reforestation</td>
</tr>
<tr>
<td>The project has reduced community dependency on natural forest resources, e.g. firewood or meat</td>
</tr>
<tr>
<td>The project has led to improvements in the number of naturally occurring plants and animals in our environment</td>
</tr>
<tr>
<td>The project has reduced activities that use natural forest resources, e.g. hunting and firewood collection</td>
</tr>
</tbody>
</table>

Legacy

<table>
<thead>
<tr>
<th>Legacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased community support for conserving our natural forest resources</td>
</tr>
<tr>
<td>Project members or trainees have got jobs in conservation as a result of the project, e.g. permanent jobs or advisory roles</td>
</tr>
<tr>
<td>The project has created long term jobs for people in the community</td>
</tr>
<tr>
<td>The project has had a positive impact on society, for example through improved health</td>
</tr>
<tr>
<td>The project has experienced increased participation in the community over time</td>
</tr>
</tbody>
</table>

Negatives
<p>| | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The project was not of interest to most people in the community</td>
<td>2</td>
<td>-4</td>
<td>16%</td>
<td>13%</td>
<td>15%</td>
<td>26%</td>
<td>26%</td>
<td>10%</td>
<td>0.39</td>
<td>4%</td>
<td>-0.16</td>
</tr>
<tr>
<td>The community was not told enough about the project</td>
<td>1</td>
<td>-5</td>
<td>32%</td>
<td>31%</td>
<td>27%</td>
<td>32%</td>
<td>32%</td>
<td>28%</td>
<td>1.39</td>
<td>12%</td>
<td>-0.59</td>
</tr>
<tr>
<td>The project only benefitted a minority of people in the community</td>
<td>3</td>
<td>-3</td>
<td>83%</td>
<td>87%</td>
<td>85%</td>
<td>77%</td>
<td>77%</td>
<td>77%</td>
<td>1.40</td>
<td>47%</td>
<td>-1.40</td>
</tr>
<tr>
<td>The livelihoods created by the project were not sustainable</td>
<td>4</td>
<td>-2</td>
<td>60%</td>
<td>64%</td>
<td>72%</td>
<td>61%</td>
<td>61%</td>
<td>53%</td>
<td>1.07</td>
<td>41%</td>
<td>-0.83</td>
</tr>
<tr>
<td>The project hasn't helped with conserving natural forest resources</td>
<td>5</td>
<td>-1</td>
<td>26%</td>
<td>34%</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td>34%</td>
<td>0.34</td>
<td>14%</td>
<td>-0.14</td>
</tr>
</tbody>
</table>
Appendix 4 – Villager Evaluation - survey script and protocol

Surveys lasted 20 minutes to 1 hour depending on the number of projects that a participant was aware of. Outcomes were introduced one at a time and then the respondent asked to provide an answer for every project they were aware of before moving to the next outcome. The order in which the projects were asked was deliberately varied to avoid any bias from projects always being first or last. Where the same response was provided more than twice in a row, participants were politely asked to provide an explanation for their opinion to check for understanding. Care was taken not to influence their responses if further explanation was needed.

Survey Questionnaire – Ranked Outcomes

Objective:

- To quantify the extent that the villagers prioritised project outcomes have been achieved by the projects delivered in the villages
- To be able to analyse the performance by project theme, so that comparisons can be drawn and lessons learned

Target audience: minimum of 30 villagers, of a mixture of genders (seek 50/50) and ages in all the six villages. To exclude anyone who has participated in in-depth interviews and focus groups

Sampling approach: systematic, stratified by gender and village and area in the village. Current plan is to split each village into a number of zones, e.g. settlement and agriculture areas. Then to approach every fifth person we see in the area to complete the survey.

Survey structure: 5 introductory questions, followed by 25 statements to be answered yes/no/dk per project that the respondent is aware of. Therefore respondents may need to complete the statements up to 6 times. Each iteration will be marked with the project that it refers to.

Time per survey: will depend on how many projects people are aware of. It may take up to 30 minutes to complete, or 5 minutes if the respondent is not aware of any projects. Average timings will become clear upon pilot

Outcomes Survey

Hello, my name is Katie. I am a student from England doing some research for my degree and I was wondering whether you would be happy to help me?

All it will take is 15 minutes of your time and I would like to reassure you that your answers will remain anonymous and the results are confidential. Is that ok? Great, thank you! Please do answer as honestly as you can. I am learning Swahili still, so please do speak slowly. If you have any questions as we go along please do say and either I or my helper will respond.

Part 1: Respondent Details (circle as correct)

First of all, I would like to take a few personal details. These help me to make sure that I speak to a wide enough range of people.

Gender: M  F
How old are you? 0-20 20-40 40-60 60+  

What is your education level? none primary secondary other:______________

OK. To give you some more background, my research is to find out your opinions on some conservation projects that have taken place in your village.

Have you heard of the Eastern Arc Mountain Forest Conservation Endowment Fund (EAMCEF)?

YES NO

Have you heard of any of these projects taking place in your village? Circle each that respondent knows of. If NO to all, move to close.

BEE KEEPING DAIRY GOAT HUSBANDRY FUEL EFFICIENT STOVES TREE PLANTING
RABBIT KEEPING/FISH FARMING FOREST BOUNDARY MANAGEMENT

Are you currently involved in any of these projects? Circle each that respondent is involved in.

BEE KEEPING DAIRY GOAT HUSBANDRY FUEL EFFICIENT STOVES TREE PLANTING
RABBIT KEEPING/FISH FARMING FOREST BOUNDARY MANAGEMENT

Have you previously been involved in any of these projects, but aren’t any more? Circle each that respondent was involved in.

BEE KEEPING DAIRY GOAT HUSBANDRY FUEL EFFICIENT STOVES TREE PLANTING
RABBIT KEEPING/FISH FARMING FOREST BOUNDARY MANAGEMENT Part

2: Outcomes

I am now going to ask your opinion on the projects that you said you were aware of or involved in. To do this, I will read out 25 statements and I would like you to say whether you agree or disagree with them one by one, based on your knowledge of specific project. Please be as honest as you can. We will read out the statements for each project that you have said you are aware of. Is that ok? Right, which project do you think you know most about? We will start with that one.

BEE KEEPING DAIRY GOAT HUSBANDRY FUEL EFFICIENT STOVES TREE PLANTING
RABBIT KEEPING/FISH FARMING FOREST BOUNDARY MANAGEMENT
<table>
<thead>
<tr>
<th>Statement</th>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project teaches people skills that help them earn more money</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project was not of interest to most people in the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has some good champions within the community who help it go well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project does things that improve the environment in our village, for example planting trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has experienced increased participation in the community over time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The community was not told enough about the project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has set up livelihoods that are now earning money for people taking part</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project hasn't helped with conserving natural forest resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project provides more environmental education in schools and clubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has increased the number of jobs available in the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project provides good alternatives to the natural forest resources that people depend on, e.g. firewood or meat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project increases awareness in the whole community of the need to conserve natural forest resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project only benefited a few people in the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The community has been inspired to run its own conservation activities, independently of the project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project increases the knowledge in the whole community about they can do to conserve natural forest resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project provided all the necessary resources to the people taking part, e.g. seeds, or goats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has increased community support for conserving our natural forest resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project leads to improvements in the number of naturally occurring plants and animals in our environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has encouraged a wide range of people in the community to take part</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project increases community awareness of the unique animals and plants that live nearby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project generates sustainable incomes for people in the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project increases the ability of people directly involved in the project to conserve natural forest resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project has had a positive impact on society, for example through providing money that can be spent on schooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project stops people from accessing the forest to do things that use natural forest resources, e.g. hunting and firewood collection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The livelihoods created by the project did not make people better off (for example by earning money or improving quality of life)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Repeat for all the projects that the participant is aware of!