What Effective Impact Measurement and Reporting in Conservation Looks Like

Insights and Best Practices from Conservation Organisations, Funders and Evaluation Experts

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Context

Biodiversity continues to decline in spite of decades of conservation efforts aimed at reducing threats and reversing trends of species and habitat loss (Butchart *et al.* 2015; Díaz *et al.* 2019). While there have been local successes, these have not translated to positive results at the global scale (Johnson *et al.* 2017). Furthermore, funds for biodiversity conservation are limited, making it even more pertinent that resources are allocated to activities with the highest potential for conservation success (Ferraro & Pattanayak 2006).

In this regard, there has been increasing emphasis on the need for monitoring and evaluation (M&E) of conservation interventions, both to track progress towards environmental goals and to ensure effective resource allocation (Ferraro & Pattanayak 2006; Sutherland *et al.* 2004). This rise in M&E has been driven by conservation practitioners who want to identify strategies that have worked to adapt their efforts accordingly as well as funders who want to know their funds are being used effectively (Ferraro & Pattanayak 2006; Ógáin *et al.* 2012; Redford & Taber 2000; Spilsbury & Kaimowitz 2000; Stephenson 2019). The latter has also led to an increase in impact reporting with a focus on what has worked (as opposed to what has been learnt) to ensure sustainable streams of funding (Ógáin *et al.* 2012; Redford & Taber 2000).

However, measuring the impact of an intervention is complicated because conservation problems are 'wicked' (Ferraro & Pressey 2015; Game *et al.* 2014; Rittel & Webber 1973). Wicked problems are difficult to define, have many causes, no clear solution, are beyond the capacity of any one organisation, involve complex interactions, and require integration across many disciplines (Rittel & Webber 1973). This is further complicated for organisations whose work indirectly influences the ultimate conservation impact (Kapos *et al.* 2008). For example, policy changes may create an environment where species conservation is possible but they do not directly impact species conservation.

Accordingly, a professional placement was conducted in collaboration with University of Cambridge and UNEP-WCMC to gather insights into and best practices in conservation impact measurement and reporting. This placement involved a literature review, desktop study of impact reports of 60 organisations across four categories (including conservation organisations, development organisations and social impact organisations) and semi-structured interviews with conservation organisations, funders and evaluation experts. The findings from this placement are detailed below.

Insights into Impact Measurement

The Gold Standard: Scholars recommend impact evaluation assessments (IEAs) that use experimental (e.g., randomized control trials) and quasi-experimental approaches (e.g., before and after monitoring) to understand the impact of an intervention (i.e., attribution) (Ferraro & Hanauer 2014; Mascia *et al.* 2014; Mckinnon *et al.* 2015; Stephenson 2019). However, these assessments are often difficult for conservation organisations to implement due to lack of funding, time or knowledge (ibid). Others suggest that IEAs also have constraints and offer guidance on how to minimize these by appropriately matching methods to the intervention (Bull *et al.* 2020; Pynegar *et al.* 2019; Schleicher *et al.* 2020). They argue that using mixed-methods approaches as well as designing experiments prior to project implementation are key to effective evaluations (Ferraro and Hanauer, 2014; Ockendon *et al.*, 2020, in review).

Alternatives: In order to address the barriers to IEAs and improve recording and reporting of impacts, several scholars have advocated for the use of a Theory of Change approach that articulates causal links between outputs, outcomes, and impact (Adams *et al.* 2019; Ferraro 2009; Fryirs *et al.* 2019; Kapos *et al.* 2008; Mascia *et al.* 2014; Stephenson 2019) (see Figure 1). They argue that this approach enables conservation organizations to focus on outcomes and identify successful or unsuccessful approaches over shorter time scales than IEAs thus enabling adaptive management and improved conservation effectiveness (Kapos *et al.* 2008; Salafsky *et al.* 2002).

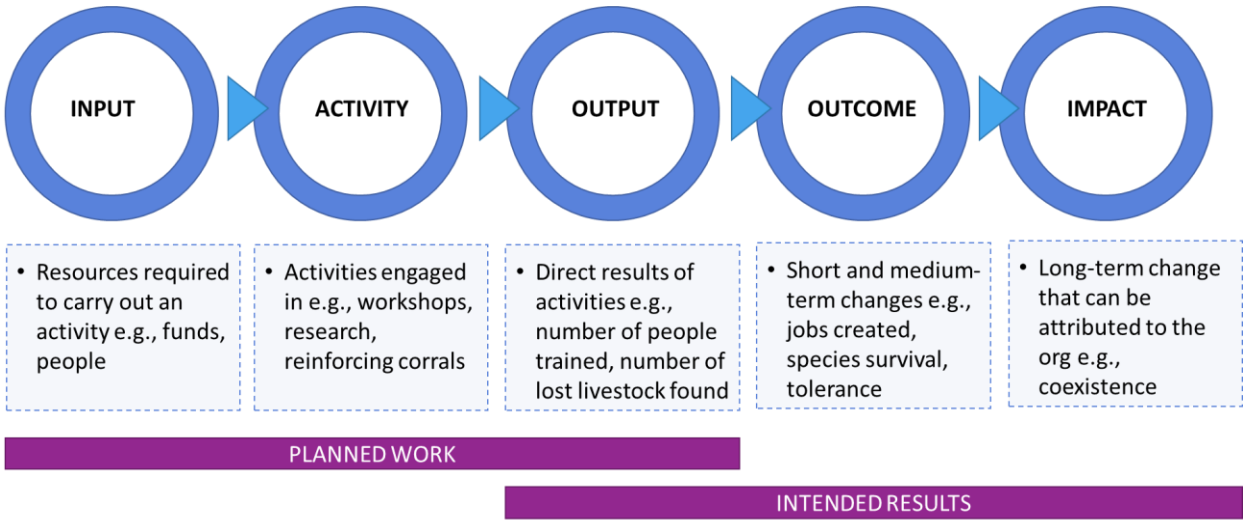


Figure 1: Conservation Logic Model adapted from Salafsky *et al.* (2002)

While proponents of IEAs agree that using theory of change is a positive step towards understanding the effectiveness of an intervention, they argue that only robust IEAs can attribute impact to a specific intervention and therefore need to be conducted more frequently (Ferraro 2009). Recognizing the scarcity of resources, they suggest that conservation organisations strategically coordinate the use of IEAs (Mckinnon *et al.* 2015) (i.e., collaborate on which interventions should be evaluated) or utilize a priority setting approach to identify projects to evaluate based on strategic importance of the project and the feasibility and attractiveness (e.g., value in providing accountability) of the evaluation (Spilsbury *et al.* 2014).

Furthermore, these scholars suggest that there is a need to move beyond outcomes and use interdisciplinary and systems thinking approach (i.e., understanding relationships and interactions in a particular context) that includes ways to eliminate rival explanations (i.e., counterfactuals) in order to attribute impact (Adams *et al.* 2019; Ferraro 2009; Knight *et al.* 2019; Mascia *et al.* 2014; Stephenson 2019).

Over the last two decades, there has been marked growth in technical guidance (e.g., Ferraro 2009; Kapos *et al.* 2008; Mascia *et al.* 2014) as well as M&E tools and guides for biodiversity conservation (e.g., USAID 2016). Tables 1 and 2 provide details of various evaluation approaches and their pros and cons and Table 3 lists resources that can assist in the development of impact measurement and reporting frameworks (see Appendix).

Impact Measurement in Practice: This study revealed that while there is a growing focus on impact reporting, conservation organisations continue to struggle with impact measurement because of many of the concerns listed above as well as particular challenges associated with leading effective organisations and managing change. These include process-related challenges such as lack of existing methodologies (e.g., methodologies to measure ecosystem based adaptation do not exist) to organisational challenges such as culture and capacity (See Figure 2).

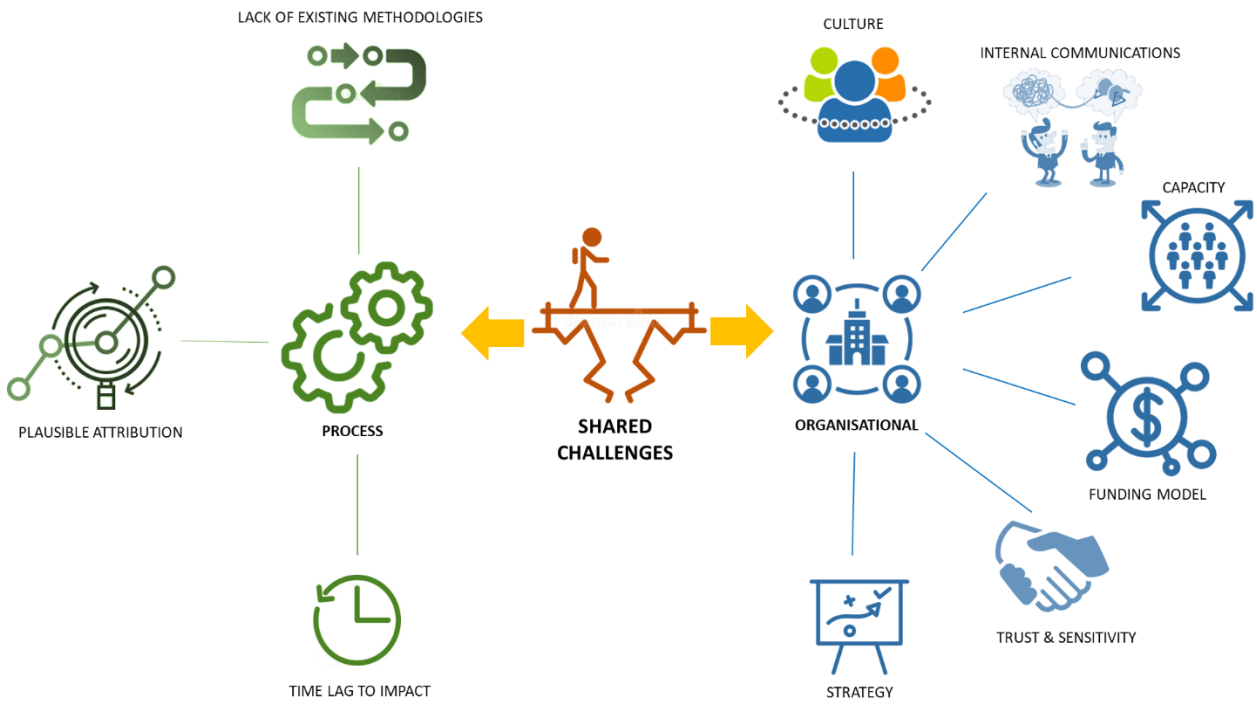


Figure 2 Overview of Shared Challenges in M&E

To overcome the process-related challenges, the overarching recommendation by organisations, funders and experts alike is to focus on the organisations' contribution to impact using a systems-thinking approach. In addition, critically, the study revealed that impact measurement requires key enabling conditions and embedding mechanisms in order to be implemented successfully (Figure 3).

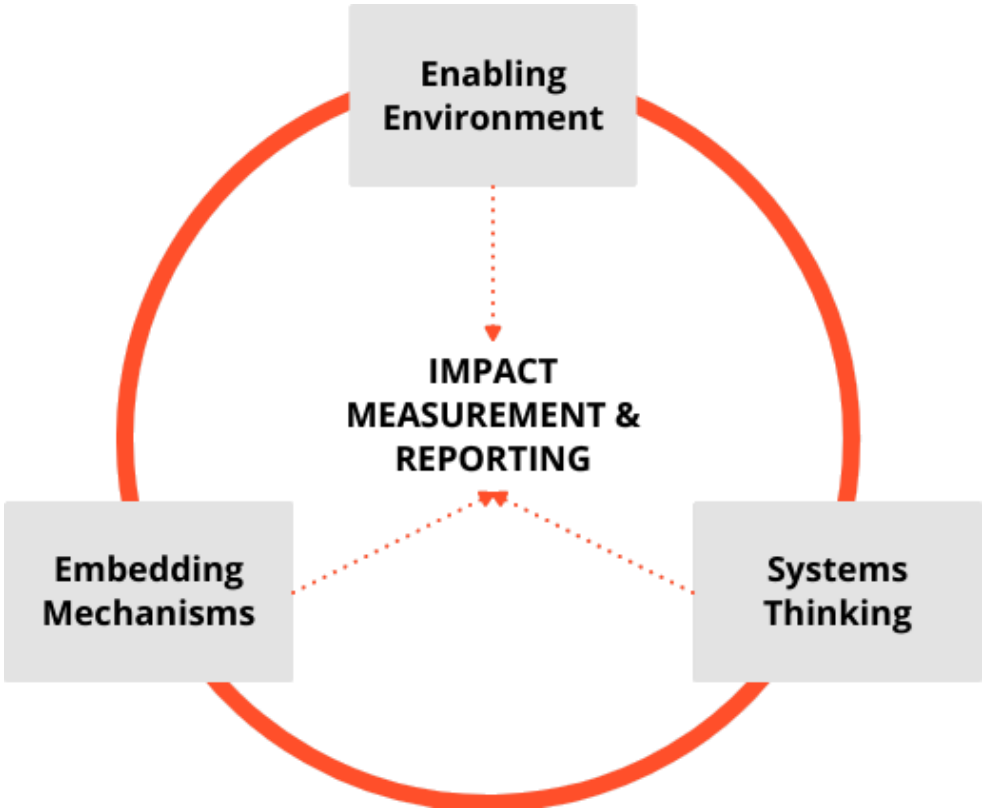


Figure 3 Key Conditions for Impact Measurement and Reporting

1. Creating an Enabling Environment

- ROLE OF LEADERSHIP: Embedding impact measurement in an organisation requires leadership time and capacity to drive culture change. Leaders should therefore be actively engaged in advocating for the development of M&E frameworks and showcasing the value of understanding impact. Furthermore, clearly articulating the need for measuring impact as part of the organisation's strategy can help to reinforce leadership's investment in measuring impact.
- PARTICIPATORY PROCESSES: Co-developing both the organisation's theory of change and M&E frameworks build trust and ownership within the organisation. This fosters an environment where each employee has line of sight into what's important as well what their contribution is to the vision and mission of the organization. This also allows early adopters to act as ambassadors of M&E and share lessons learned with their colleagues as well as showcase the value of impact measurement with them.
- TRANSPARENT REPORTING: Results in the form of impact measures, stories, dashboards etc., should be shared and discussed internally. This continues to develop trust and ownership of M&E by helping individuals to understand the organisation's impact as well as their contribution to it. These can be shared spreadsheets, intranet hubs, dashboards that are agreed during the participatory processes. Furthermore, it is important that external communications are not a black-box and that employees are privy to details of external reporting and have a chance to review before reports are sent to target audiences. This will help to ensure that sensitive information is shared in a manner that is agreeable to all as well as help to build trust that the contribution of an organisation will be shared without embellishment or exaggeration. Duty of care protocols could be used to establish review systems as well as what can and cannot be shared externally.
- FUNDING MODELS: The funding strategy of an organisation should align with its theory of change and be driven by the agreed vision and mission. Unrestricted funds can help with allocating funds for M&E. Furthermore, all proposals should include a budget for M&E that emphasizes the need for M&E in each project/programme/ organisation.

2. *Using Systems Thinking*

- THEORY OF CHANGE and IMPACT PATHWAYS: Clear and agreed impact pathways allow organisations to understand the linkages between activities, outcomes and impacts. Theory of change is a useable framework to understand and report impact as it helps organisations gain clarity on intended results by uncovering these assumptions and linkages. The intentionality inherent in the theory of change process increases the chance of documenting attribution while lending credibility to an organisation's contribution to observed impact. Situating the theory of change in a system also helps to uncover unintended consequences. Overall, systems thinking was identified as the most feasible approach to understanding an organisation's impact and contribution to conservation effects.
- FOCUS ON CONTRIBUTION: Most organisations and experts felt that it was important to focus on contribution rather than attribution, given the complex nature of conservation problems. In particular, collecting evidence on what's working and not working based on impact pathways is key to understanding either contribution or attribution.
- OUTCOMES as an INTERMEDIATE STEP: Shift the focus in project design from the development of outputs to the processes required to turn output into outcomes. As of now, most project design focuses on steps to develop an output which inhibits the ability to have impact. Shifting focus to outcomes could increase both the potential for impact as well as the ability to measure it.
- BASELINES & COUNTERFACTUALS: Establish baselines and before and after scenarios, where possible develop counterfactuals (comparative sites, synthetic counterfactuals). If counterfactuals are not possible, consider and document what would happen if the project does not take place. Use narrative and storytelling to build these scenarios. This allows organisations to understand change.
- GUIDANCE & EXPECTATIONS: Provide guidance to project teams and funders about time lines to impact, e.g., what you would expect to see in 5 years, 10 years, etc. This substantiates the need for M&E and helps to manage expectations of when impact will become observable.

- FEEDBACK LOOPS AND EVIDENCE: Create feedback loops within the M&E framework to test and provide evidence to support the organisation's theory of change. This can involve both quantitative and qualitative methods to understand the reasons for changes observed in a system. Institutional memory and use of interdisciplinary teams (e.g., inclusion of social scientists) can help with documenting evidence and identifying key intended and unintended consequences. This could also involve testing an intervention (e.g., piloting a new technique in a specific area) or a component of an intervention. Iterative thinking should be employed while trying to understand what has happened in a system – this involves consistently asking the question what else could have contributed to the impacts being observed (helps to move towards attribution). Interestingly, once an organisation can provide evidence that their theory of change works (i.e., that their outputs lead to the intended impacts), then output metrics, such as reach (e.g., number of countries, hectares, etc), could be used to understand the potential scale of impact.
- VALUE QUALITATIVE AND QUANTITATIVE MEASURES: Both can provide insight into assumptions and linkages in an organisation's theory of change. Impact is context-dependent and qualitative measures are most useful in uncovering hidden assumptions, causal linkages and unintended consequences using a systems approach with looped-thinking. Overlaying the theory of change with narrative indicators assists in accounting for context, unintended outcomes and the time lag between intervention and impact. Quantitative measures help understand the scale of change, and can be easier to develop, use and replicate. These measures should be developed based on the theory of change to answer the "why" of the organisation's activities and should be suitably responsive (i.e., show change).

3. Embedding Mechanisms

- DEDICATE CAPACITY: Identifying resources to coordinate M&E together with systems to ensure all members of an organisation monitor outcomes is crucial. M&E should be seen as every individual's responsibility. This does not necessitate a separate team but does require key personnel with time and space in their roles to coordinate monitoring and evaluation. This is dependent on having an enabling environment (both a push from leadership as well as an inclusive approach to designing M&E frameworks to overcome the various process and organisational challenges conservation organisations face) as well as clear investment in building this capacity and showcasing the value of M&E. Moreover, it may be important to separate monitoring from evaluation to ensure objective assessments. This could be important if the objectives are learning and accountability, whereas if the primary objective is resource mobilization then M&E could be combined.
- TRAINING. Regular training on theory of change and monitoring and evaluation should be carried out. This should include onboarding and annual refresher courses in order to embed this type of thinking into the culture of an organisation.
- SIMPLE & STANDARDIZED: The metrics collection process should be as simple as possible (especially initially) and easy to replicate to ensure that staff are not overburdened and see the value in collecting the measures. This involves standardizing metrics (linked to the theory of change) and separating evaluation and monitoring functions as well as sharing results and using them for decision making.
- SIMPLE PROJECT PROCESSES: Project design and proposals should include explicit links to the organisation's theory of change and any standardized metrics.
- LINK TO INDIVIDUAL PERFORMANCE: Incentives to measure and report could also be created by including key outcomes in employee performance appraisals.
- RESOURCE ALLOCATION: Funds and budgets could be allocated based on performance. However, it is important to be aware that linking fund allocation to standardized metrics could lead to perverse outcomes (e.g., resources allocated on basis of number of people benefited could favour densely populated areas over sparsely populated ones regardless of ecological impact). Accordingly, while standardizing measures is useful, contextualizing results is even more important.

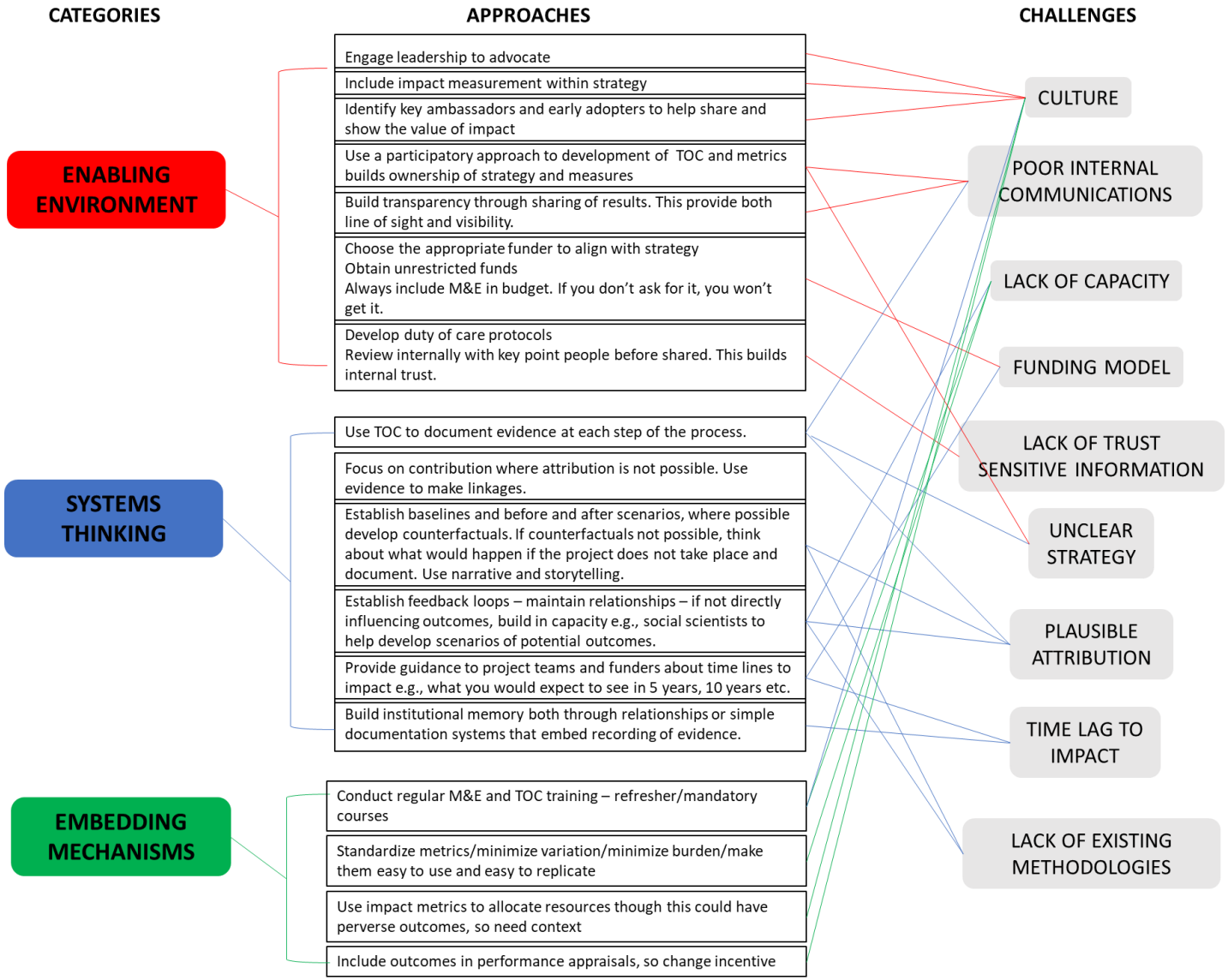


Figure 4. Diagram showing how approaches map to broad categories as well as the challenges they address.

Insights into Impact Reporting (External)

- IMPORTANCE OF IMPACT & TRANSPARENCY: Impact plays an important role in funding decisions but it often falls second to the funder's objectives. Accordingly, organisations could potentially increase their chances of receiving funding by understanding whether its goals and objectives aligns with a particular funder. Furthermore, funders may be likely to reward transparency (e.g., reports of failure) as this signals credibility (i.e., they may not trust organisations that only report successes).
- BRIDGING THE DISCONNECT: All organisations interviewed believed that external reports assisted with fundraising and building credibility and that it was important that these reports include failures. While organisations recognized this need, only 22% appear to do this in practice. Conversely, external reports rarely played a part in influencing funding decisions or addressing the barriers to providing funding. In fact, all funders interviewed said they sought evidence of impact through direct interactions with the grantee and did not rely on impact reports. In cases where impact reports were referenced, funders generally considered them only as supplementary information.
- REPORTING TOOLS – WHAT WORKS: Impact reporting should be a mix of narrative (stories and case studies) and data (numbers and trends). Numbers help to visualize change and stories help to understand it. High quality reports used case studies embedded with data.
- SHARED CHALLENGES: Funders share the same challenges as conservation organisations in terms of measuring their own impact – specifically around time and money. Furthermore, they rarely assess impact after the grant period is over. This common ground could be an opportunity for conservation organisations to initiate dialogue with funders on the relevance and importance of M&E especially considering that funders' value both impact and transparency and are reportedly willing to fund M&E.

Overall Conclusion

At the heart of M&E efforts is a desire to improve conservation effectiveness (Knight *et al.* 2019). However, resource scarcity, lack of capacity and the perceptions of conservation organisations that experimentation and failure are not tolerated, while successes are accepted without interrogation, has led to a culture of claiming attribution (Knight *et al.* 2019; Redford & Taber 2000). Interestingly, the research results suggest that conservation organisations should focus efforts on understanding contribution. Importantly, using a systems thinking approach allows conservation organisations to discern how their strategies are effective and enables them to adapt accordingly without having to invest in technically robust IEAs (Kapos *et al.* 2010; Knight *et al.* 2019).

Furthermore, given continued loss of biodiversity despite conservation efforts (Butchart *et al.* 2015), it could be argued that conservation leaders should take M&E efforts a step further and invest in systems-level collaborative frameworks that help to address the wicked nature of conservation problems. While there is extensive literature on impact evaluation, the approaches studied largely focus on single projects or programmes. Accordingly, there appears to be a need to design M&E frameworks for systems, collaborations and partnerships (i.e., a M&E process designed with partners with clear roles and contribution of partners identified beyond project timelines). Emerson et al.'s (2012) collaborative governance regime could provide a foundation for further research and development of such a framework.

This collaborative M&E framework would entail all organisations (including funders) working in a similar geographic space to jointly map out the complex overarching system. They would then overlay their theory of change onto this map to understand at which points their activities affect the system and how they intend to measure this. This approach should make each organisation's contribution clear and also ensure that the broader system is being monitored for positive and negative unintended outcomes as well as progress towards the ultimate conservation goal (e.g., change in state of biodiversity). Furthermore, it is hoped that this inclusive approach will reduce competition for scarce resources and enable collaborations to thrive. This may appear idealistic as it requires significant participation and facilitation of various actors. However, there is an opportunity to refine the approach within existing collaborations before using it at a systems-level where organisations may not be intentionally collaborating but are working in the same system.

REFERENCES

Adams, V. M., Barnes, M., & Pressey, R. L. (2019). Shortfalls in Conservation Evidence: Moving from Ecological Effects of Interventions to Policy Evaluation. *One Earth*, **1**(1), 62–75.

Bull, J. W., Strange, N., Smith, R. J., & Gordon, A. (2020). Reconciling multiple counterfactuals when evaluating biodiversity conservation impact in social-ecological systems. *Conservation Biology*, cobi.13570.

Butchart, S. H. M., Clarke, M., Smith, R. J., … Burgess, N. D. (2015). Shortfalls and Solutions for Meeting National and Global Conservation Area Targets. *Conservation Letters*, **8**(5), 329–337.

Díaz, S., Settele, J., Brondízio, E. S., … Zayas, C. N. (2019). Pervasive human-driven decline of life on Earth points to the need for transformative change. *Science*, **366**(6471). doi:10.1126/science.aax3100

Ferraro, P. J. (2009). Counterfactual thinking and impact evaluation in environmental policy. *New Directions for Evaluation*, **2009**(122), 75–84.

Ferraro, P. J., & Hanauer, M. M. (2014). Advances in Measuring the Environmental and Social Impacts of Environmental Programs. *Annual Review of Environment and Resources*, **39**(1), 495–517.

Ferraro, P. J., & Pattanayak, S. K. (2006, April). Money for nothing? A call for empirical evaluation of biodiversity conservation investments. *PLoS Biology*, pp. 482–488.

Ferraro, P. J., & Pressey, R. L. (2015). Measuring the difference made by conservation initiatives: Protected areas and their environmental and social impacts. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **370**(1681). doi:10.1098/rstb.2014.0270

Fryirs, K. A., Brierley, G. J., & Dixon, T. (2019). Engaging with research impact assessment for an environmental science case study. *Nature Communications*, **10**(1), 1–10.

Game, E. T., Meijaard, E., Sheil, D., & Mcdonald-Madden, E. (2014). Conservation in a wicked complex world; challenges and solutions. *Conservation Letters*, **7**(3), 271–277.

Johnson, C. N., Balmford, A., Brook, B. W., … Wilmshurst, J. M. (2017). Biodiversity losses and conservation responses in the Anthropocene, (May). doi:10.17863/CAM.10996

Kapos, V., Balmford, A., Aveling, R., … Manica, A. (2008). Calibrating conservation: new tools for measuring success. *Conservation Letters*, **1**(4), 155–164.

Kapos, V., Manica, A., Aveling, R., … Balmford, A. (2010). Defining and Measuring Success in Conservation. *Trade-Offs in Conservation: Deciding What to Save*, 73–93.

Knight, A. T., Cook, C. N., Redford, K. H., … Keene, M. (2019). Improving conservation practice with principles and tools from systems thinking and evaluation. *Sustainability Science*, **14**(6), 1531–1548.

Mascia, M. B., Pailler, S., Thieme, M. L., … Burgess, N. D. (2014, January). Commonalities and complementarities among approaches to conservation monitoring and evaluation. *Biological Conservation*, pp. 258–267.

Mckinnon, M. C., Mascia, M. B., Yang, W., Turner, W. R., & Bonham, C. (2015). Impact evaluation to communicate and improve conservation non-governmental organization performance: the case of Conservation International. *Philosophical Transactions of the Royal Society B: Biological Sciences*. doi:10.1098/rstb.2014.0282

Ockendon, N., Amano, T., Cadotte, M., Thornton, A., & Tinsley-Marshall, Paul Sutherland, W. J. (2020 in review). Planning and designing experiments to improve conservation practice.

Ógáin, E. N., Lumley, T., & Pritchard, D. (2012). *Making an impact. New Philanthropy Capital.*

Pynegar, E. L., Gibbons, J. M., Asquith, N. M., & Jones, J. P. G. (2019). What role should randomized control trials play in providing the evidence base for conservation? *Oryx*, 1–10.

Redford, K. H., & Taber, A. (2000). Writing the Wrongs: Developing a Safe-Fail Culture in Conservation. *Conservation Biology*, **14**(6), 1567–1568.

Rittel, H. W. J., & Webber, M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, **4**, 155–169.

Salafsky, N., Margoluis, R., Redford, K. H., & Robinson, J. G. (2002). Improving the practice of conservation: A conceptual framework and research agenda for conservation science. *Conservation Biology*, **16**(6), 1469–1479.

Schleicher, J., Eklund, J., D. Barnes, M., Geldmann, J., Oldekop, J. A., & Jones, J. P. G. (2020). Statistical matching for conservation science. *Conservation Biology*, **34**(3), 538–549.

Spilsbury, M. J., & Kaimowitz, D. (2000). The influence of research and publications on conventional wisdom and policies affecting forests. *Unasylva*, **51**(203).

Spilsbury, M. J., Norgbey, S., & Battaglino, C. (2014). Priority setting for evaluation: Developing a strategic evaluation portfolio. *Evaluation and Program Planning*, **46**, 47–57.

Stephenson, P. J. (2019, October 1). The Holy Grail of biodiversity conservation management: Monitoring impact in projects and project portfolios. *Perspectives in Ecology and Conservation*, Associacao Brasileira de Ciencia Ecologica e Conservacao, pp. 182–192.

Sutherland, W. J., Pullin, A. S., Dolman, P. M., & Knight, T. M. (2004). The need for evidence-based conservation. *Trends in Ecology & Evolution*, **19**(6), 305–308.

USAID. (2016). How-To Guides for USAID Biodiversity Programming — Biodiversity Conservation Gateway. Retrieved August 24, 2020, from https://rmportal.net/biodiversityconservation-gateway/projects/closed-global-projects/measuring-impact/how-to-guides-for-usaid-biodiversity-programming

APPENDIX

Table 1: Best Practices in Impact Evaluation

Approach	***Description***	***Methods***	***Positives***	***Challenges***
Impact Evaluation	The systematic process of assessing the causal effects of a program, project or policy. Comparing what actually happened with an intervention to what would have happened without it. IEs measure the intended and unintended consequences attributable to a conservation intervention	Experimental research designs e.g., Random Control Trials Quasi-experimental research designs (e.g., statistical identification of comparison groups) Statistical analyses of observable data and in-depth case studies that rule out rival explanations	Supports adaptive management of existing and future interventions, scaling up or down of investments in interventions Verifiably links impact to the intervention in question Includes counterfactual thinking which is considered critical for impact evaluation	Complex, requires specific skillsets, time and finances
Systematic Review	Structured process that collates, appraises and synthesizes all available empirical evidence of relevance to a specific research question.	Systematic review of all evidence addressing questions concerning whether an intervention works or not. Gathering together and describing diverse sets of data generated by all sorts of studies	Allows for selection of appropriate intervention to use, scaling up or scaling down of investments in intervention Verifiably links impact to the intervention in question Includes counterfactual thinking which is considered critical for impact evaluation	Not useful when testing something novel or that hasn't been tried, data limitations increase the risk of arriving at a faulty conclusion Also failures are hardly reported. Also is complex and requires specific skillsets, time and finance
Systems Approach	An approach that draws on systems thinking (i.e., understanding the dynamics that influence and shape systems), to develop a holistic view of a context – the	Adaptive action – an enquiry based iterative problem solving process	Addresses the issue of wicked problems and allows to look at conservation intervention within a system. Helps to provide context of contribution that a	Requires certain facilitation techniques and time. Mostly qualitative so is not appreciated by all.

inter-relationships, perspectives and boundaries being evaluated	Appreciative Enquiry – process for engaging wide range of stakeholders Boundary Critique – reflect on systems boundaries according to changing contexts Consequence Table/Matrix – summarizing different alternatives in relation to how they perform relative to different objectives Logic Models / Theory of Change – graphical way to organize information and display thinking. Depicts the implicit assumptions and causal linkages Scenario planning – large group process that takes a wide range of disparate stakeholders through a process to anticipate alternative futures	project/intervention has and reduces focus on attribution which is difficult for complex problems. Can be cheaper than other options Counterfactual thinking but qualitative approaches – so can have assumed and inferred attribution. Inferred attribution through comparing project results with those of similar projects.	

Table 2: List of key experimental and quasi-experimental designs and their pros and cons.

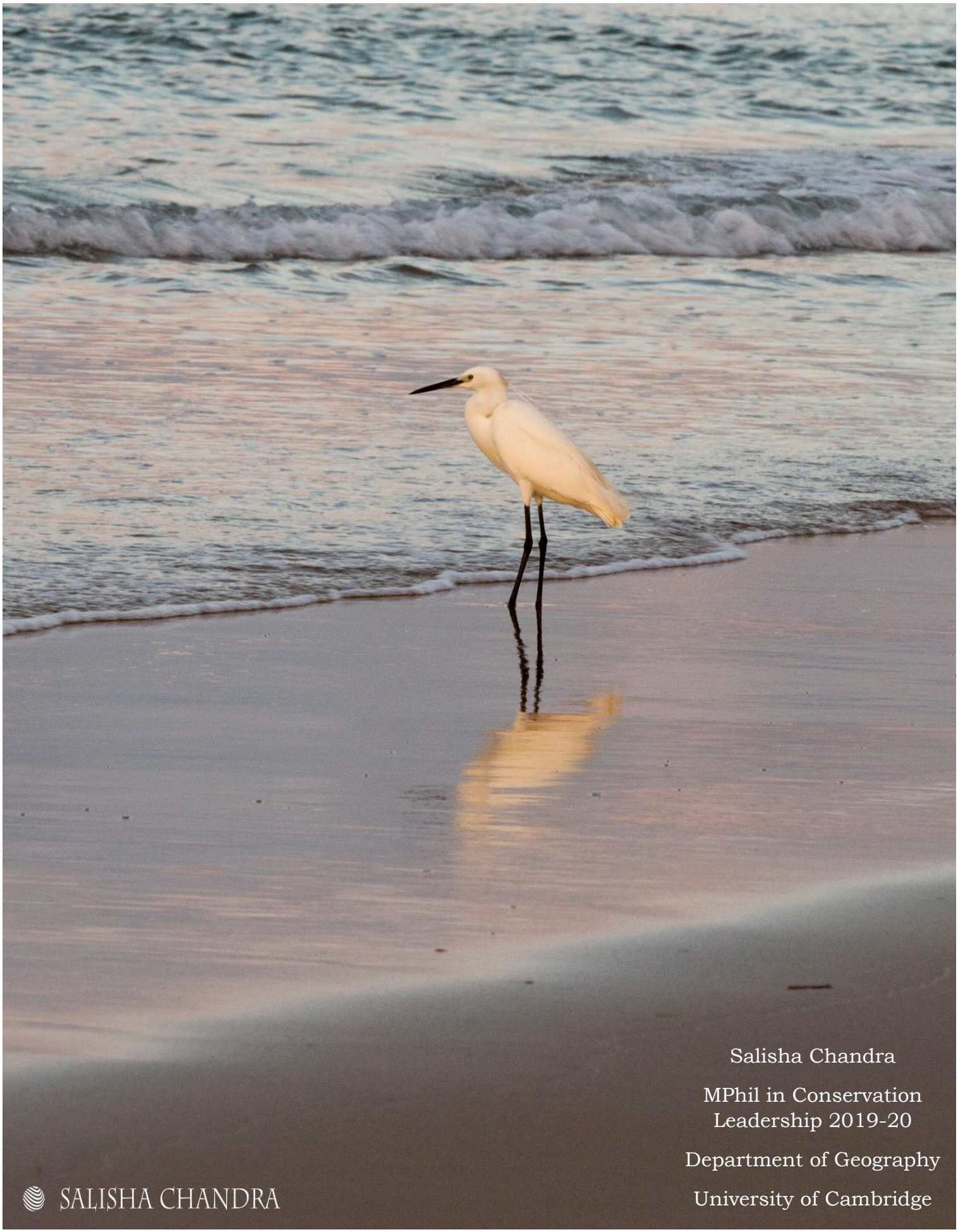
Experimental and Quasi Experimental Designs	*Description*	*Positives*	*Challenges*
Randomized Control Trials	Experimental units are randomly allocated to treatment and control groups. Then use before-after/control-intervention techniques – difference in difference to understand impact	Useful when a quantitative evaluation of an interventions impact is required. Showcases the magnitude of the effect of an intervention on outcomes of interest	Ethical concerns – randomizing involves withholding interventions Needs an adequate number of units Timescale of change needs to be realistic, conservation impacts can take a long time to become observable Requires significant resources – human and financial Spill-over effects – outcomes may spill over to areas beyond the defined unit Lack of blinding – participants in control communities may observe activities in nearby treatment communities and implement or become resentful. Also may influence behaviour knowing which group you are allocated to
Before - After	Establish the baseline prior to intervention and then test after. Assumes that the system is in equilibrium and therefore outcome is stable over time – therefore any change in outcome is attributable to the intervention	Tells you the trend at a single location and can document outcomes in terms of performance management of org.	No capacity to attribute

Sum of Perceived Differences	Statistical method to evaluate the perceived efficacy of an intervention across different actors	Useful in socio-ecological situations with multiple stakeholders and different incentives and expectations	Still being developed and tested
Evidence Experiments	Advance thinking and design of experiments in order to learn from actions when planning a new project. This involves identifying key questions to be answered, planning the design and committing to publishing results regardless of outcomes	Useful in planning stages and smaller scale projects	Difficult in realities of the field to conduct and spend time on experiments. No funding for the same. Pilots are very hard to fund in conservation with ground realities that can be dire if there is failure.
Matching Methods	A suite of statistical techniques aiming to improve causal inference of subsequent analyses. Specifically, by identifying control units that are closely matched to treatment units according to pre-defined measurable characteristics (covariates) and a measure of similarity to reduce confounding factors.	Relatively few data requirements, lends itself to integration with other approaches when used a data pre-processing step	Assumes balance in observable covariates reflects balance in unobserved covariates (i.e., there are no unobserved confounders)
Regression Discontinuity	Measures the impact of an intervention, or treatment, by applying a treatment assignment mechanism based on a continuous eligibility index which is a variable with a continuous distribution (e.g., selection of lions above a certain age).	Strong causal inference possible	Outcomes calculated only for units close to the cutoff (i.e., data from only a small subgroup of units are used)
Instrumental Variables	An instrumental variable (sometimes called an "instrument" variable) is a third variable, Z, used in regression analysis when you have endogenous variables—variables that are influenced by other variables in the model. In other words, you use it to account for unexpected behavior between variables.	Helps overcome endogeneity	Suitable instrument hard to find
Synthetic Control	Generation of an artificial counterfactual	Can be conducted when large number of treatment units are not available	Credibility relies on a good prior to implementation fit for outcome of interest between treated unit and synthetic control

Table 3: Resources and Tools for Impact Measurement and Reporting

Resources and Tools Name	Overview	Uses	Type	Author
Designing for Impact Model	Guide to designing solutions for impact	TOC training	Report	Mulago Foundation
Being an Evaluator	Guide to Evaluation and thinking like an evaluator	Develop evaluation Capacity	Book	Donna Podems
CE – Decision Making Tool	Tool that walks you through making a decision based on evidence. Outlines your logic and supports with existing evidence.	Unclear, could help with project design	Online tool	Conservation Evidence
CE – Evidence Database	Collation of evidence from the scientific literature about the effects of conservation interventions	Search or contribute to evidence of TOC	Website	Conservation Evidence
NPC series on impact measurement	A series of reports on impact measurement – including the following: Impact Measurement guide for small charities Reporting and Reviewing Impact: What Good Looks Like What good impact reporting looks like Building your measurement framework Stories and numbers: collecting the right impact data Using your TOC to develop a measurement and evaluation framework Talking about results Theory of change in ten steps	TOC and impact measurement training Development of Impact Reporting	Reports	New Philanthropy Capital
Guidelines for Good Impact Practice	Impact measurement guidelines outlining best practices for impact investors and the organisations they work with	N/A	Report	Social Impact Investment Task Force
How To Guides : Biodiversity Programming Impact Measurement	Detailed guides on how to develop situation models, results Chains, define outcomes and indicators and importance of evidence	TOC and impact measurement training	Reports	USAID
Strengthening the Science-Policy Interface: Gap Analysis	A summary of effective science-policy interface characteristics, existing gaps found in practice, practical steps to fill these gaps	TOC development	Reports	UNEP

Conservation Measures Partnership	Focus on better ways to design, manage, and measure the impacts of conservation actions Developing and promoting conservation standards	Measures and Indicators M&E Development	Website	Conservation Measures Partnership
Foundations of Success	Common framework for planning and managing conservation programmes Training and assistance online as well as services to help groups develop	M&E Development	Website	Foundations of Success
Collaboration for Environmental Evidence	Evidence database -promotes and deliver evidences syntheses on environmental policy and practice Also provide trainings	Documenting Evidence Creating belief in TOC	Website	Environmental Evidence
Conservation by Design	Open Standard for Conservation Practice. A conservation planning tool guide.	TOC Development	Website	The Nature Conservancy
PRISM	Toolkit for evaluating the outcomes and impacts of small/medium sized conservation organizations	TOC Development M&E Framework	Report	Cambridge Conservation Initiative Partners + WWF
Impact Evaluation in Practice	Detailed guide on how to carry out an impact evaluation assessment	TOC Development M&E Framework	Report	The World Bank
Impact Toolkit	Guide to UKRI's definition of impact and	M&E Development	Website	UKRI
Impact Evaluation Guide	A guide to CSIRO's approach to impact evaluation – with a focus on their Cost Benefit Analysis approach	Impact Evaluation, TOC and M&E Development	Reports	CSIRO
IRIS +	Impact measurement tool for investors	N/A	Website	Global Impact Investing Network
Altmetrics for institutions	Big data science methods to track influence of research on public policy	M&E	Website	Altmetrics
Kumu.io	Mapping software for systems, stakeholders, concepts and more	TOC development Making linkages	Website	Kumu



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