Assessing the conservation impact of Conservation Trust Funds

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Abstract

Financial resources for nature conservation are scarce. Moreover, nature conservation is a long-term endeavour, which needs more than short-term grants alone to fulfil conservation goals. This is why long-term financing mechanisms are in place or development, seeking to raise resources and invest in large-scale transformative projects. Conservation Trust Funds (CTFs) as such a sustainable financing mechanism were the focus of this research project. An important part of conservation practice is to empirically evaluate the achievements of a programme/institution to determine whether and how efficiently it creates a measurable conservation impact, i.e. turning scarce resources into contributions to nature conservation. Thus it was the purpose of this research project to find out whether CTFs create a measurable conservation impact, while moreover examining how CTFs capture the results of their activities. The conducted systematic review showed that 49.1 % of all operational CTFs worldwide made their annual and evaluation reports publicly available, while also revealing which levels of results were covered by the CTFs' reporting, distinguishing between output, outcome, and impact results. Besides, interviews with representatives from CTF donor organisations illustrated to what extend donor requirements influence the CTFs' results monitoring, reporting, and evaluation. Reviewing the CTFs' reports furthermore enabled listing the indicators, which the institutions use in practice to report on achieved results. Lastly, by compiling collected data it was possible to present the aggregated conservation impact CTFs had over ten years from 2009 to 2018.

Preface

This research project was conducted in collaboration with Wolfs Company, a consultancy company leading the update of the 10-year review of CTFs project commissioned by the Conservation Finance Alliance. The review of CTFs aims to better understand the governance and impact of these institutions. This master's thesis informed the 10-year review of CTFs by investigating how CTFs monitor, report, and evaluate the conservation impact of their activities.

I would like to take the chance and thank my supervisors from Wolfs Company for their great support throughout this research project. Their input and feedback has been essential for completing this thesis.

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List of abbreviations

CBD	Convention on Biological Diversity
CBO	Community-based organisation
CFA	Conservation Finance Alliance
CI	Conservation International
CMP	Conservation Measures Partnership
CTF	Conservation Trust Fund
C2	Campbell Collaboration
GDP	Gross domestic product
KfW	Kreditanstalt für Wiederaufbau (German development bank)
IUCN	International Union for Conservation of Nature
METT	Management Effectiveness Tracking Tool
MRE	Monitoring, reporting, and evaluation
M&E	Monitoring and evaluation
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PA	Protected area
PAN	Protected Area Network
PES	Payments for ecosystem services
PFP	Project Finance for Permanence
PPP	Purchasing Power Parity
SDGs	Sustainable Development Goals
TNC	The Nature Conservancy
UN	United Nations

WWF	World Wide Fund For Nature

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1. Introduction

1.1. Problem statement

Humanity depends on natural and resilient ecosystems to provide the most essential products and services like food, clean air, water regulation and purification, and climate stabilisation. Life on earth depends on the health of nature, with the estimated economic value of nature's services, also called ecosystem services, exceeding the global economic value with the stated estimate of 125 trillion US dollars per year[1] (Costanza et al., 2014; Meyers et al., 2020). Despite the proven value and importance of nature, ecosystem loss and degradation continue and already resulted in a 60 % decline of the world's plant and animal populations between 1970 and 2014 (Grooten & Almond, 2018). Changes are urgently needed to address "rising water stress and crises, massive topsoil loss, depleted fisheries, and an increasingly high economic cost of natural disasters" (Meyers et al., 2020, p. 7).

Despite the need for change and expanding challenges, financial resources for nature conservation are scarce. It is estimated that in addition to the approx. 100 billion USD spent on nature per year, 300 to 400 billion USD annually would be needed to achieve essential conservation outcomes like the United Nations (UN) Convention on Biological Diversity (CBD) Aichi targets (Meyers et al., 2020). It is moreover important to consider that nature conservation is a long-term endeavour and thus short-term grants alone, often following a two to five-year cycle, are not enough to fulfil conservation goals (Bonham et al., 2014). This is why various long-term financing mechanisms are in place or in development that seek to raise resources and invest in large-scale transformative projects, Conservation Trust Funds (CTFs, also referred to as trust funds or funds) being one of them (Conservation Finance Alliance, 2019).

An important part of conservation practice is thereby to empirically evaluate the achievements of a programme or institution as a whole. Governments and organisations want to know whether mechanisms like CTFs indeed create a measurable conservation impact and how efficiently these institutions turn scarce resources into contributions to conservation goals (Baylis et al., 2016). To create transparency and address these concerns, most CTFs established a monitoring, reporting, and evaluation (MRE) system to track, assess, and communicate their performance. The most recent global review of CTFs commissioned by the Conservation Finance Alliance (CFA) nevertheless showed that most CTFs as of 2008 were not able to present the aggregated results of their activities due to a lack of clear indicators and targets to assess their conservation impact (Spergel & Taieb, 2008).

[1] The stated aggregated global annual value of ecosystem services is based on a study from Groot et al. (2012) and expressed in 2007 US$. For comparison, the global GDP estimate was approx. $75.2 trillion/year in 2011 (also expressed in $2007) (Costanza et al., 2014).

These findings fit into the discourse related to a shortcoming of results MRE in conservation organisations in general. The Conservation Measures Partnership (CMP), a consortium of conservation organisations, states that still only a few conservation organisations are able to provide evidence whether their programmes work or need improvement. The CMP moreover emphasises that a more rigorous recording of efforts and measurement of effectiveness is needed to enable learning processes, improve the efficiency of programmes, and demonstrate achievements in order to build public and political will to expand support (Conservation Measures Partnership, 2020).

The 2008 global review was the last attempt to assess the status of CTFs and provide a rationale on why these institutions should receive further investments (Spergel & Taieb, 2008). Hence, an update on the status of CTFs and their effectiveness in contributing to nature conservation is needed. Further research needs to find out whether the scope and quality of the CTF's results MRE improved and to what extent the institutions are able to provide evidence on the impact of their activities. While several publications include guidelines on results MRE for CTFs (Putney & Bath, 2012; Spergel & Mikitin, 2013; Spergel & Taieb, 2008), no study to date has shown which indicators CTFs use in practice when stating the results of their activities. By addressing precisely these three aspects, this research project is designed to fill the research gap around the results MRE and conservation impact of CTFs. This research moreover constitutes the first attempt to aggregate the conservation impact these institutions had over the period of ten years. Apart from that, CTFs as sustainable financing mechanisms are covered only sparsely by academic literature and hence hold great potential for continuative research.

Research needs to find out which approaches to nature conservation are most effective in delivering results to avoid spending limited resources into conservation action with little impact. This is what this research project aims to contribute to by investigating whether CTFs create a measurable conservation impact. The research project moreover contributes to the topic of results MRE by examining the quality of CTFs' MRE activities as of 2020, and which key indicators they use when stating these results. The effort of aggregating the results CTFs achieved in ten years furthermore constitutes a novelty in this field of research.

1.2. Research question and sub-questions

The overarching research question this research project aims to answer is **"How to capture the conservation impact of Conservation Trust Funds?"** The following sub-questions provide an outline of the intermediary steps that need to be addressed in order to answer the main research question.

Sub-question 1: **"What is the current status of CTFs worldwide regarding monitoring, reporting, and evaluating the conservation impact of their activities?"** This question includes the enquiry how

many CTFs regularly publish the results of their activities. It moreover involves checking which levels of results (output, outcome, and impact) are covered by the CTF reporting. Also, the quality of the CTFs' results MRE is investigated further by checking whether the trust funds' reports mention or present a baseline scenario and an underlying theory of change. Since donor organisations influence CTFs' MRE activities significantly through setting conditions for their support, answering sub-question 1 includes examining donor requirements too.

Sub-question 2: **"Which key indicators are used by CTFs to measure their conservation impact?"** To answer sub-question 2 it is studied which indicators CTFs use to report on the different levels of results. A special focus thereby lies on the impact indicators utilised by CTFs.

Sub-question 3: **"What has been the conservation impact of CTFs from 2009 to 2018 based on existing information?"** Sub-question 3 finally aims to describe and quantify the impact CTFs created over ten years between 2009 and 2018. The additive "based on existing information" is included due to the anticipation that data availability might be limited, constraining the meaningfulness of presented results.

2. Theoretical background

2.1. Literature review

2.1.1. CTFs as sustainable financing mechanisms

CTFs, which are also known under the name environmental funds, are a sustainable financing mechanism that has been around since the 1990s (Conservation Finance Alliance, 2019). CTFs are "private, legally independent institutions that provide sustainable financing for biodiversity conservation" (Spergel & Mikitin, 2013, p. 4) and focus on financing long-term management costs of protected areas (PAs) as well as other conservation projects and sustainable development initiatives (Spergel & Taieb, 2008). The institutions generally do not implement conservation action but are designed to mobilise and invest funds from various funding streams and subsequently re-grant financial resources to implementing organisations (Bladon, Mohammed, & Milner-Gulland, 2014). Initially, CTFs often served as intermediaries in "debt-for-nature swaps"[2] or international grants, channelling large amounts of money into smaller projects over a longer period of time (Global Environment Facility, 1998). CTFs therefore could be described as a "bridge between donors and implementing organisations" (Bladon et al., 2014, p. 8).

The first global review of CTFs conducted in 1998 found that the trust funds vary significantly in their structure, scope of supported activities, priorities, and procedures depending on their purpose and location. For evaluation purposes, it still has proven to be useful to classify the institutions into two broad categories, namely "parks" funds, focussing on PAs within a national system, and "grants" funds, supporting a wide range of projects related to nature conservation and sustainable development (Global Environment Facility, 1998). To provide a steady flow of funds to bridge the volatility of project funding, CTFs, in theory, are equipped with a stable and durable financing structure. This structure generally consists of "endowments, sinking funds, revolving funds, or any combination of these" (Bladon et al., 2014, p. 9). An endowment fund is set up to last in perpetuity, saving its capital with only the interest or return on investment being used for conservation activities. A sinking fund on the other hand is designed to annually spend a proportion of its capital over a fixed period of time, using principal as well as investment income until the balance sinks to zero. Lastly, a CTF can also manage a revolving fund, which is continuously and regularly fed by income sources like fees, taxes, or levies collected by a government. This income may be used to create or augment an endowment fund or to be disbursed for conservation action (Bladon et al., 2014).

[2] Spergel and Taieb (2008) describe debt-for-nature swaps as "the cancellation of debt repayment obligations in exchange for funding programs to conserve the indebted country's biodiversity" (p. vii).

Research conducted in the context of the 10-year review of CTFs has shown that as of May 2020, 108 operational CTFs exist worldwide, predominantly located in Latin America, Africa, the Caribbean, and Asia. The map provided in Figure 1 depicts the global spread of CTFs. One reason for the noticeable geographical focus might be the fact that CTFs arose amongst others to channel funding from debt-for-nature swaps, which predominantly benefitted emerging or developing countries. A big share of debt-for-nature swap programmes thereby were based on the U.S. Tropical Forest Conservation Act (TFCA) of 1998, renamed as "Tropical Forest and Coral Reef Conservation Act" (TFCCA) in 2019. The act offered the bilateral debt-for-nature swap mechanism for developing countries worldwide reducing their official debt owed to the U.S. government while simultaneously generating funds to support local tropical forest conservation activities (The Nature Conservancy, 2020; USAID, 2020). Moreover, the lack of financial resources for environmental conservation action is especially high in developing nations due to the various other challenges these countries face (Miller & Yu, 2012).

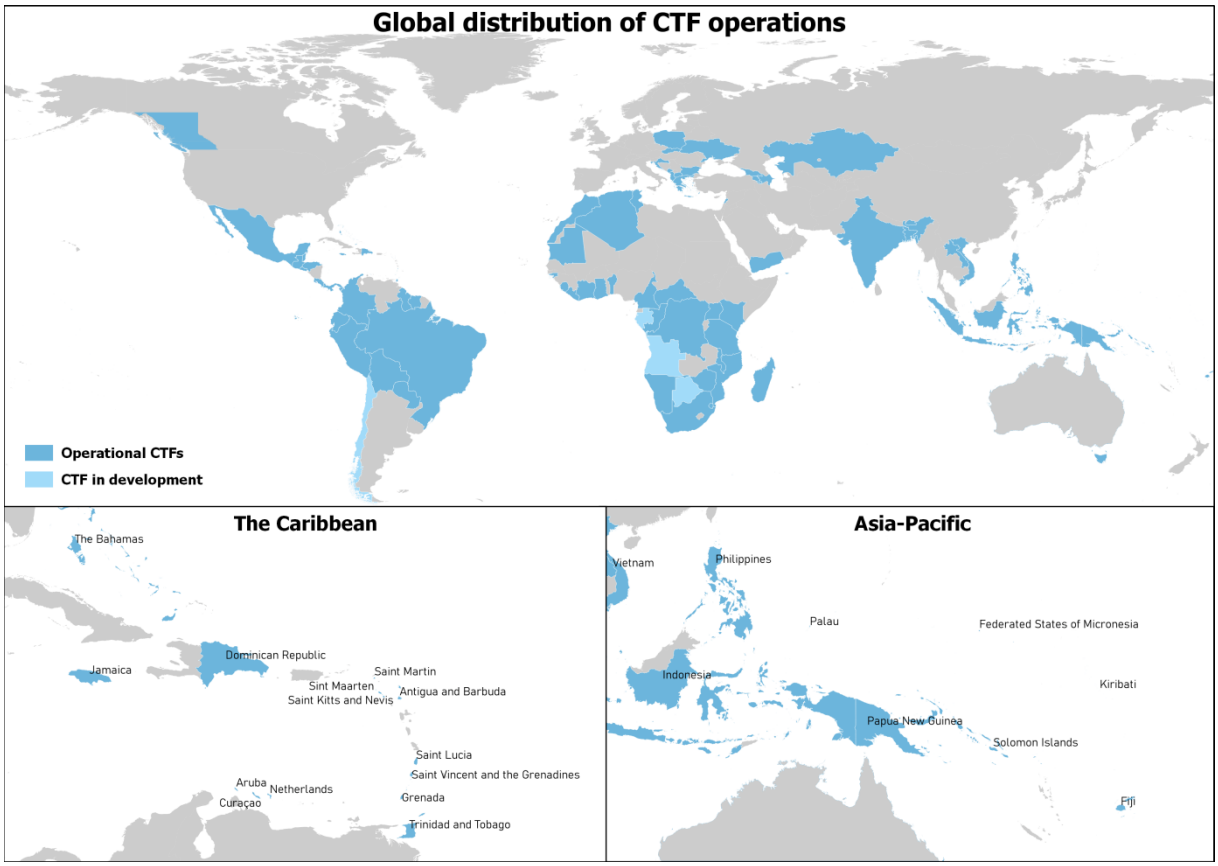

Figure 1. Map of the global distribution of CTF operations, draft version from May 2020[3]

CTFs as a sustainable financing instrument emerged to provide long-term financing for nature conservation, an endeavour that should not be covered by smart-term grants alone (Bonham et al., 2014). Besides the primary benefit of being a regular and reliable source of funding, CTFs are also characterised as public-private partnerships, bringing together local and international stakeholders

[3] Preliminary result of the ongoing update of the 10-year review of CTFs led by Wolfs Company

from various backgrounds as members of the trust funds' governing boards. Moreover, CTFs contribute to the strengthening of institutional capacity and inter-sectoral collaboration at the local and national level by offering grants and technical assistance to grantees and creating and facilitating partnerships (Spergel & Taieb, 2008). CTFs furthermore have shown potential in taking the financial administration and intermediary role between buyers and sellers in economic incentives mechanisms like the payments for ecosystem services (PES) scheme, thereby fostering the increased use of such mechanisms (Bladon et al., 2014). Despite all these benefits, CTFs are only one out of many financial mechanisms and institutional arrangements addressing issues of nature conservation and sustainable development action. Also, traditional project approaches might still be the more appropriate option in cases of serious and immediate biodiversity threats which can be "effectively addressed by the rapid mobilization of relatively large amounts of funding" (Global Environment Facility, 1998, p. viii).

2.1.2. Results MRE challenges and initiatives

The two global reviews of CTFs are important sources of information regarding the development of CTFs and the evolution of their MRE activities. The 1998 "Evaluation of Experience with Conservation Trust Funds" commissioned by the Global Environment Facility (GEF) focused rather on the funds' performance than on their impact, since most CTFs at that time were too recently established to report on the impact of their activities (Global Environment Facility, 1998). The "Rapid Review of Conservation Trust Funds" commissioned by the CFA and published in 2008 had a broader basis for evaluation in this regard. The review concluded that most CTFs sufficiently monitored project completion indicators for awarded grants while monitoring the biodiversity impacts of grants fell short. The review moreover stated that as of 2008 most CTFs were not able to present the aggregated results of their activities and did not set clear indicators and targets to assess their own conservation impact. Monitoring and evaluation (M&E) were considered to be especially challenging for grants funds, since the approved grants often serve diverse purposes and are allocated to various entities, involving non-governmental organisations (NGOs), community-based organisations (CBOs), or private enterprises, which often lack M&E experience. Despite these and other identified obstacles, the review drew the conclusion that monitoring and evaluating biodiversity impacts of CTFs is needed to ensure that funds avoid spending limited resources into activities with little conservation impact (Spergel & Taieb, 2008). The lack of substantial evidence on the effectiveness of CTFs is also critically mentioned by other sources, reasoning that it might put further financial support at risk (Baylis et al., 2016; Bonham et al., 2014).

Different initiatives emerged during recent years, aimed at improving and standardising amongst others the CTFs' results MRE. The already mentioned CTF review of 2008 presented a model template for evaluating the institutional performance of CTFs as well as the impacts of their grants in

form of a list of detailed and standardised questions. The template was designed to facilitate a common language among CTFs, also related to results MRE (Spergel & Taieb, 2008). Another initiative coming from the CFA is the development of the Practice Standards for CTFs, whose first version was completed in 2013. These standards are intended to "serve as a tool for improving the design, management, and monitoring and evaluation of CTFs" and cover six core areas, MRE being one of them (Spergel & Mikitin, 2013, p. 3) At the time writing, an updated version of the Practice Standards has been finalised, wherein the topic of MRE was included into the standards covering the programs of CTFs[4]. Another initiative, which not only addresses CTFs but conservation organisations in general, is the Conservation Measures Partnership (CMP). The partnership was founded in 2002 and since then has produced, amongst others, four versions of the Open Standards for the Practice of Conservation, a tool which "bring[s] together common concepts, approaches, and terminology in conservation project and program design, management, and monitoring in order to help improve the practice of conservation" (Conservation Measures Partnership, 2020, p. 2). The Open Standards provide best practices around a five-step management cycle. Step two "plan" includes information on how to develop a formal monitoring, evaluation, and learning plan, covering aspects such as information needs, choice of indicators and how to measure them. Additional information on how to manage and evaluate data is provided in step four "analyse and adapt" (Conservation Measures Partnership, 2020).

Despite these efforts, the CFA still describes reporting criteria and indicators used for conservation finance mechanisms as often inconsistent and points out that "[it] has proved difficult to come up with standards for judging the adequacy of financial instruments against conservation goals" (Meyers et al., 2020, p. 16).

2.1.3. Impact assessment in conservation practice

Scientific articles specifically written about CTFs are rare but existent as Bonham et al. (2014) prove. Articles related to impact assessment in the context of nature conservation in general are more readily available. In this regard, scholars like Baylis et al. (2016) and Ferraro & Pattanayak (2006) argue that the quality of impact evaluations in nature conservation lags behind other areas of application, like health or development policy, and urgently call for improvements. It is important to mention that the scientific community stresses the need for impact evaluations that go beyond the monitoring of inputs, outputs, and certain indicators. Thus, programme results ought to be measured against a counterfactual scenario in order to identify the underlying causal effect of a measure. Comparing the results of an intervention to the same scenario with no intervention reveals which effects can be directly traced back to the specific programme and helps understanding under which

[4] Information shared by Wolfs Company

conditions they arise (Baylis et al., 2016; Ferraro & Pattanayak, 2006; Gertler, Martinez, Premand, Rawlings, & Vermeersch, 2016). It is agreed that the described procedure for impact evaluation is crucial to find the underlying causal effect of a programme and investigate its effectiveness. However, Ferraro and Patttanayak (2006) also pointed out that the demanded rigorous measurement of the counterfactual was at that time non-existent in conservation literature. It is therefore considered unlikely that CTFs are able to present counterfactual analysis based impact evaluations of their work. It is nevertheless highly relevant to investigate if and how CTFs prove the additionality[5] of reported results. One way of tracking changes for program beneficiaries or covered ecosystems over time is to make before-and-after comparisons, taking measurements before and after implementing a program or project without using a comparison group. The information collected on the state before an intervention is called baseline data (Gertler et al., 2016). In order to assess the quality of CTFs' results MRE, this research examines whether CTFs mention conducting a counterfactual analysis, having collected baseline data, or comparing achieved results to a baseline scenario.

2.2. Theoretical framework

The following paragraphs present and elaborate the key concepts used in this research project.

2.2.1. Theory of change

A programme's theory of change is closely linked to the evaluation of its impacts**. "**A theory of change is a description of how an intervention is supposed to deliver the desired results" (Gertler et al., 2016, p. 32). It is thus depicting the causal logic behind the intervention, how and why it is going to reach its projected outcomes, and explicitly examines the conditions and assumptions needed for change to happen. Impact evaluations take their origin in a programme's theory of change since the latter clearly defines the programme's objectives (Gertler et al., 2016). Impact evaluations then subsequently help to clarify these objectives by "establishing well-defined measures of a program's success" (Gertler et al., 2016, p. 10).

2.2.2. OECD results chain model

One possibility to display a theory of change and its underlying assumptions is the results chain (United Nations Development Group, 2011). The results chain model used for this research project follows the proposition of the Organisation for Economic Co-operation and Development (OECD) (2019) and is depicted in Figure 2. The OECD also defines the terms used in the results chain model, which is an important element for this research. It is critical to know what is considered as a result

[5] The Social Impact Investment Task Force (2014) describes additionality as "the extent to which an investment has made a difference and has resulted in change" (p. 27).

when investigating the effectiveness of certain interventions or institutions and their ability to produce conservation impacts.

The results chain model distinguishes between different levels of results, namely output, outcome, and impact. Outputs are defined as "products, capital goods and services" directly coming from an intervention (OECD, 2019). Outcomes are thought of as "likely or achieved short-term and medium-term change and effects of intervention outputs" (OECD, 2019). Lastly, primary and secondary long-term effects, which can be positive as well as negative, are understood as impact. All three elements are closely linked, with each of them contributing to the next one. The links between the elements are considered to be as important as the results themselves since they reflect the underlying theory of change, which eventually determines whether e.g. an output triggers a further outcome or not (OECD, 2019).

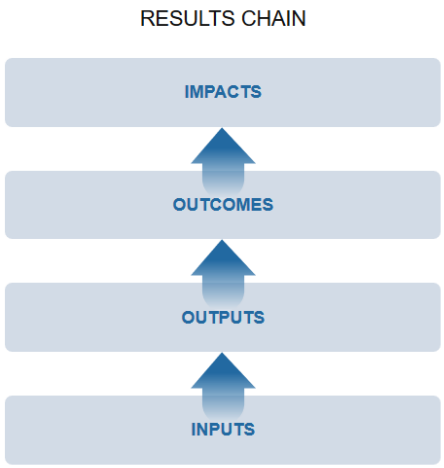

Figure 2. Results chain. Reprinted from *OECD* website, by OECD, 2019, retrieved from https://www-oecd-org.vu-nl.idm.oclc.org/dac/results-development/what-are-results.htm

The OECD results chain model is incorporated into the project's research method, namely the systematic review, and serves as a basis to determine what is considered a result and to what extent CTFs report on output, outcome, and impact level results.

2.2.3. Key indicators

An indicator is a "[q]uantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement [and] to reflect the changes connected to an intervention" (OECD, 2002, p. 25). Indicators measure factors of interest which can be inputs, outputs, outcomes, characteristics, or attributes (Gertler et al., 2016). A good indicator is moreover described as being SMART, which stands for "specific, measurable, attributable, realistic, and targeted" (Gertler et al., 2016, p. 41). The term "key indicators" refers to the most essential and decisive indicators, which in regards to this research project relate to the results of CTFs.

2.2.4. Results monitoring, reporting, and evaluation

Since this research project investigates how CTFs monitor and subsequently report and evaluate the results of their activities, these processes are classified as relevant underlying theory as well. Monitoring refers to a continuous process whose objective it is to "keep track of progress made in implementing an […] intervention by using systematic collection of data on specified indicators and reviewing the measure in relation to its objectives and inputs" (Prutsch et al., 2015, p. 17). This track record usually involves inputs, activities, outputs, and less commonly also outcomes (Gertler et al., 2016).

Reporting follows up on the monitoring process as it formally communicates the obtained information often across different governance scales. Information reporting may be conducted out of necessity due to legal or donor requirements or voluntarily to share best practices and enable mutual learning (Prutsch et al., 2015).

The evaluation of the gathered data is closely linked to the other two processes. An evaluation is a systematic and objective assessment, which uses quantitative and qualitative data coming amongst others from the monitoring process, and can be conducted during all stages of an intervention (Prutsch et al., 2015). Its aim is to detect "relevance and fulfillment of objectives, […] efficiency, effectiveness, impact and sustainability" (OECD, 2002, pp. 21-22).

2.3. Conceptual framework

Besides illustrating the line of thought, the conceptual framework depicted in Figure 3 puts the research project in perspective. It once more demonstrates that while the focus of this research lies on CTFs, these institutions are just one out of many sustainable financing mechanisms contributing to progress in nature conservation and sustainable development. Donor organisations and other funding sources are depicted as starting point in the framework since they provide the financial resources for CTFs to invest in nature conservation activities. With the focus of this research project being results MRE, this particular aspect of the CTFs work is highlighted. The framework moreover illustrates the approach taken by this research to examine how CTFs capture the conservation impact of their activities, i.e. which results levels are covered by the trust funds' reporting and which indicators they use to report on results. The framework moreover indicates the overall aim of this research, stated at the end of the chain, namely the assessment and quantification of the CTFs' conservation impact.

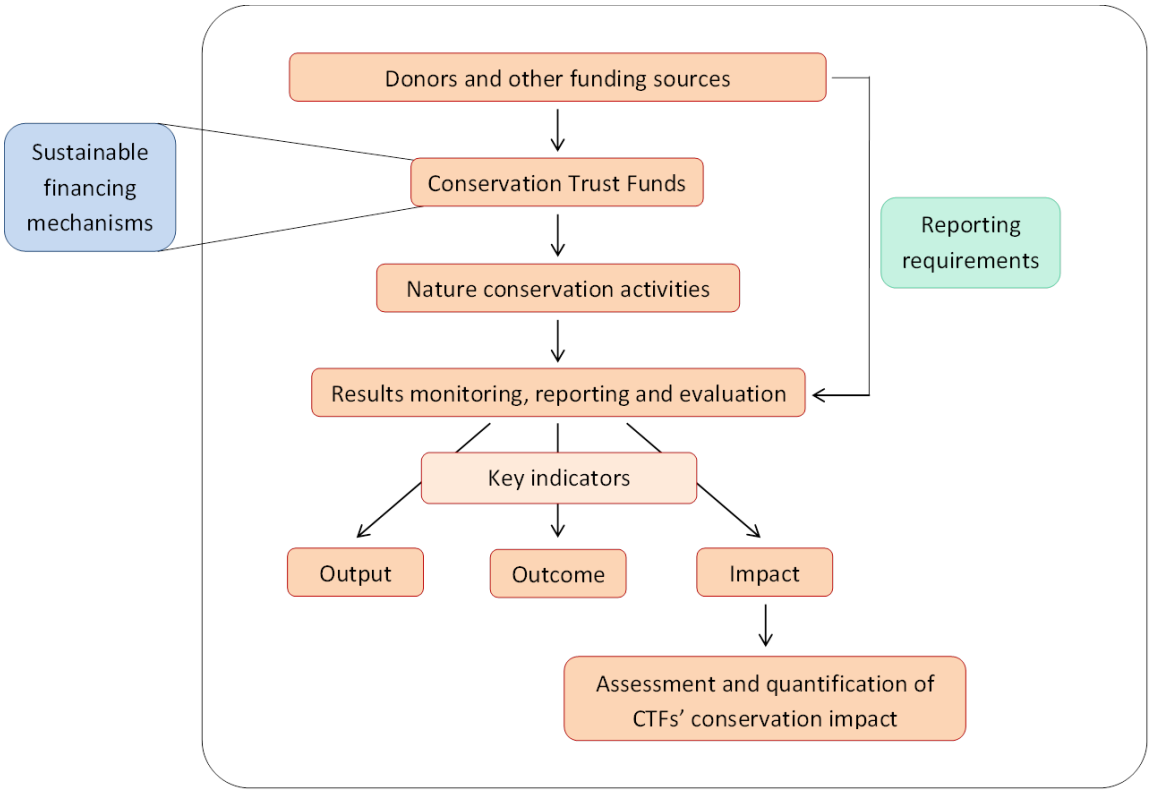

Figure 3. Conceptual framework of the research project

3. Methodology

In order to answer the overarching research question "How to capture the conservation impact of Conservation Trust Funds?" the individual sub-questions needed to be answered first. The main research method to answer the sub-questions was a systematic review following the Campbell Collaboration (C2) protocol with a slight modification.

3.1. Systematic review and Campbell Collaboration protocol

The Campbell collaboration, "a researcher network that produces and supports systematic reviews" (Ministry of Foreign Affairs of the Netherlands, 2013, p. 33), defines a systematic review as an academic research paper that uses the method of evidence synthesis (Campbell Collaboration, 2020). Wilson (2013) on the other hand describes the systematic review as a research method itself, used to address a specific research question. This paper follows the description provided by Wilson.

Regardless of whether a systematic review is understood as an academic paper or research method, its purpose is to summarise the best available research on a specific question (Campbell Collaboration, 2020). Thereby it uses in advance established transparent procedures to "find, evaluate and synthesize the results of relevant research" (Ministry of Foreign Affairs of the Netherlands, 2013, p. 33). It is the explicit approach with clearly defined rules and steps that differentiates a systematic review from a traditional literature review (Khan, Kunz, Kleijnen, & Antes, 2003).

The Campbell Collaboration is an international organisation that oversees the execution of systematic reviews based on specific guidelines (Wilson, 2013). The term C2 protocol stands for the standards of the collaboration towards systematic reviews and therefore constitutes the just mentioned guidelines. Key components a C2 systematic review must include are: "[c]lear inclusion and exclusion criteria; [a]n explicit search strategy; [s]ystematic coding and analysis of included studies [and m]eta-analysis (where possible)" (Campbell Collaboration, 2020). In order to enhance quality and produce reliable results, C2 guidelines also instruct to include more than one researcher into the most relevant steps of the review such as the formulation of the research plan and decisions about the literature classification and codification (Campbell Collaboration, 2020; Ministry of Foreign Affairs of the Netherlands, 2013). The systematic review conducted within this research project followed the C2 protocol by including its key components and adhering to the prescribed steps. However, the scope of the project did not allow involving more than one researcher into the systematic review process which constitutes the only deviation from the protocol. The steps of a systematic review as prescribed by the C2 protocol can be found in Appendix A.

3.2. Systematic review design

By following the steps described by the C2 protocol, the design of this research projects' systematic review took shape. The formulation of research question and sub-questions was followed by defining the reviews inclusion and exclusion criteria, which were oriented at the 10-year review of CTFs project. Since the 10-year review aims to consider all existing CTFs worldwide, the systematic review did not apply any geographic or language restrictions. To seamlessly follow up on the Rapid review of CTFs from 2008 (Spergel & Taieb, 2008), this systematic review considered reports from 2008 onwards. The systematic review thereby included reports from 2008 to 2019 to incorporate all currently available information to answer research sub-questions 1 and 2. Results related to the project's third sub-question and the aggregated conservation impact of CTF were presented for the time scope 2009 to 2018, referring to the idea that each CTF review covers the time span of ten years to facilitate eventual comparisons between past, the current, and future CTF reviews. The selected time scope ends in 2018 due to the low number of annual/evaluation reports yet published by CTFs for 2019, assuming that many reports are still being prepared. Moreover, the systematic review only included reports from CTFs which were defined as operational as of April 2020. Following a working definition provided by Wolfs Company, operational CTFs are considered legally incorporated, have at least received funding to start the capitalisation of their funds, and hired staff[6]. Information on the CTFs' operativeness status was provided by Wolfs Company. Lastly, the elaborated thematic scope presented in Figure 4 constitutes the boundaries of this research project and therefore also of the systematic review. The thematic scope relies on the concept and results definitions from the OECD results chain model and incorporates the threat reduction categories used by Margoluis and Salafsky (2001). It was moreover based on a report covering the development of an environmental/biodiversity impact investment tracking tool[7] (Indufor, 2018). The scope indicated what is considered a conservation result and which parts of the CTFs' work were included in the systematic review. The focus lay on funds' conservation results and thus not considered activities and results related to the financial aspects of the CTFs' operations.

[6] Related to the ongoing preparation of the 10-year review of CTFs and update of the Practice Standards for CTFs led by Wolfs Company

[7] Report provided by Wolfs Company

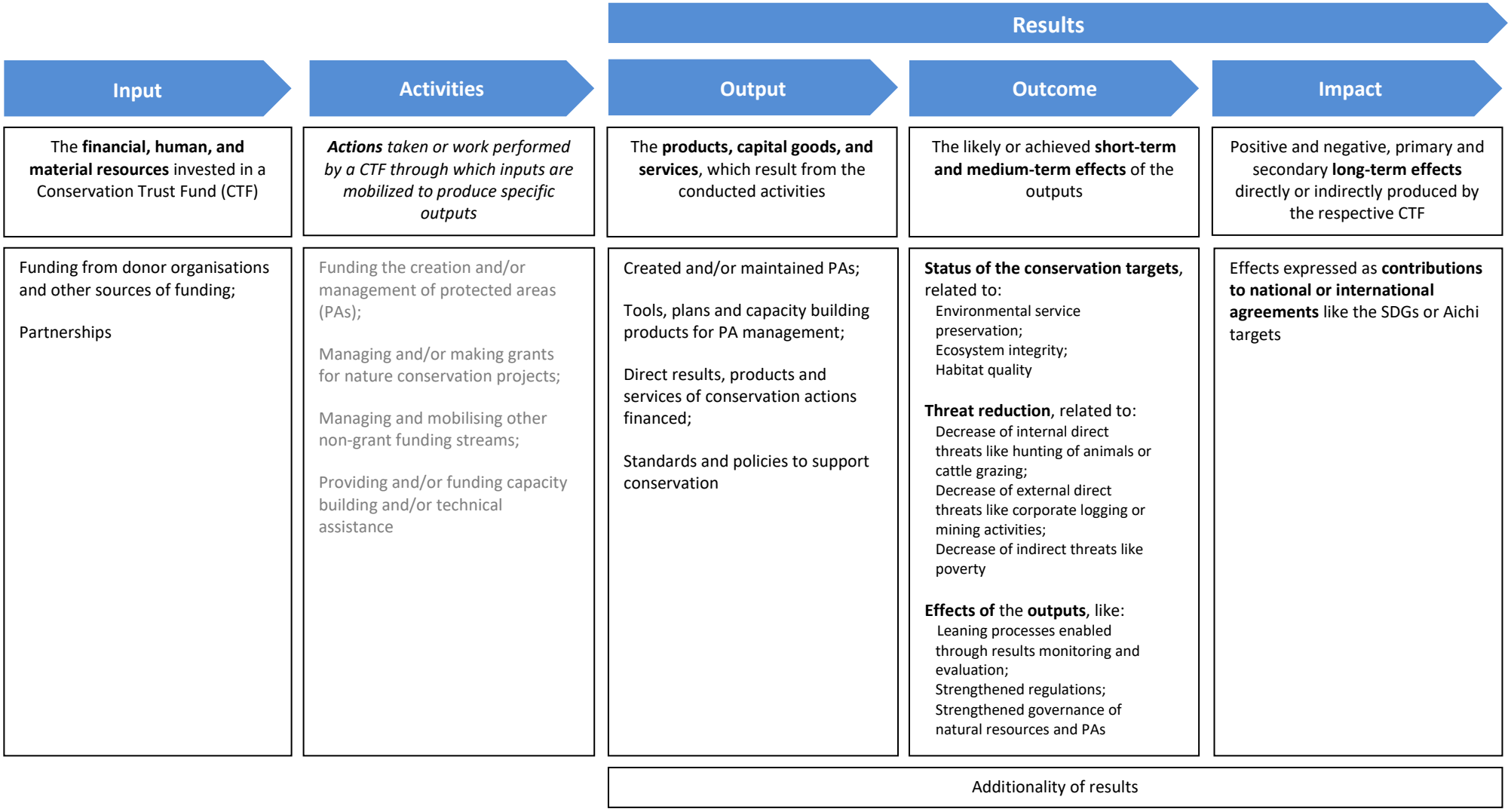

Figure 4. Thematic scope of the research project

The systematic review's inclusion/exclusion criteria also relate to the quality of reports. Since annual and evaluation reports fall into the category of grey literature, measuring the reports' quality to rigorously would have led to the exclusion of the majority or all potentially relevant reports from the review. This is why only one quality criterion used in the systematic review study by the Dutch Ministry of Foreign Affairs, taken as example, was applied to this research projects' review. The quality criterion "Clear definition and demarcation of the evaluation object" (Ministry of Foreign Affairs of the Netherlands, 2013, p. 155) was interpreted in the context of this research project as such that in order to be included into the review, a report must unambiguously state the institution it relates to and which time frame it covers.

The search strategy for the CTFs' annual and evaluation reports focussed on the CTFs' websites. Firstly, each website was screened for sections likely to contain relevant information such as "transparency", "resources", or "documents", which were subsequently scanned. If annual/evaluation reports could not be found through screening a CTF's website, the websites' search engine, if existent, was used entering the keywords "annual report", "annual", "report" and/or "evaluation report", "evaluation", "monitoring", "results", and "impact". If the CTF's website was not available in English these keywords were translated and used in the applicable language.

All reports yielded by the search were registered and digitally stored. Subsequently, the reports were screened for their eligibility according to the beforehand defined inclusion/exclusion criteria related to the report's subject as well as quality. To create a database model for collecting the review findings and set up a structure for the screening of eligible reports, a guideline for the analysis of reports was built based on the already existent thematic scope. The elaboration of the analysis guideline was moreover influenced by the interviews with CTF donor organisations and samples of annual reports of CTFs, which were particularly recommended by the interview partners. The analysis guideline provides a categorisation of conservation results in output, outcome, and impact results and states keywords and expected indicators to facilitate the screening of reports. The guideline can be found in Appendix B. In order to answer all of the three research sub-questions, the review did not only extract which indicators were used by CTFs but also gathered the actual data on collected indicators. Due to this and the significant variance of CTFs' project types, results, and wording, it was decided to manually screen each report as opposed to a word search. To accelerate the process, the review of each CTF's reporting was started with its evaluation reports, if existent, followed by the most recently available annual report, since these reports may contain already aggregated conservation results. During the review process, the analysis guideline was continuously updated to increase its suitability, adding new insights or cutting sections that were not regularly found in the reports.

After finalising the screening of the annual and evaluation reports, the findings were analysed and subsequently evaluated. First, all used results indicators were collected per CTF and in the following compiled for all CTFs. The indicators were then merged and generalised to the degree possible to narrow down the multitude of different indicators. Merging here referred to combining indicators, which only differed in wording but in principle related to the same content. Generalising on the other hand meant consolidating indicators which generally referred to a similar result while having distinct specific features that were subsequently not considered anymore. Taking one example from this project: The two indicators used by CTFs "number of pine trees planted" and "number of native trees planted" were generalised into "number of trees planted", with the general indicator itself being used by some CTFs as well, in order to indicate that this kind of indicator was used often. Whenever indicators were generalised, this is mentioned accordingly in the provided overview. Out of these merged and generalised indicators, those with the highest frequency of use in the CTFs' reporting were selected as key indicators. The selection criterion "frequency of use" was chosen to relate to and answer the project's second sub-question enquiring which key indicators CTFs use to measure conservation impact. It was also considered to include a selection criterion relating to the quality of the results indicators. However, applying such a criterion turned out not to be feasible, since generalising and merging indicators made their "SMARTness"[8] dependent on the authors way of formulating them. Instead, the results section of this report provides best practice examples of indicators deemed to be especially SMART.

When looking at the CTFs' effectiveness in achieving conservation results, it suggests itself to also examine their efficiency in achieving these results. Since efficiency is concerned with the "efficient conversion of inputs to outputs" (Crawford & Bryce, 2003, p. 366), the inputs stated by CTFs were examined in the systematic review as well. The review showed that many CTFs reported on the amount of allocated PA and/or project funding disbursed, which serves well as an input factor. To make the retrieved data on this indicator comparable, values were adjusted for inflation and Purchasing Power Parity (PPP), with the indicators subsequently expressed in USD as of 2018. Exchange rate, inflation rate and PPP conversion factor were taken from World Bank datasets (The World Bank, 2020a, 2020b, 2020c). Following the article of Turner et al. (2019) it was decided to adjust for inflation based on the local currency using local rates and only subsequently exchanging values back into USD to "more accurately reflect the price changes for local nontradable resources compared with US inflation rates" (p. 1029).

[8] According to Gertler et al. (2016) a good indicator is supposed to be SMART, which stands for "specific, measurable, attributable, realistic, and targeted" (p. 41).

As part of the evaluation of the review's findings, each CTF's performance in six programmatic areas was examined and scored on an integral scale from zero to five, shown in Table 1. The CTFs' performance was measured based on the level of activity in the respective area and the perceived appropriateness of conducted activities. The evaluated areas were derived from the analysis guideline for the reports (depicted in Appendix B) and encompassed:

1. PA support, including institution building in a broader sense,
2. additional environmental preservation, meaning restoring activities and land use management,
3. social activities, comprising health and education programmes, as well as projects generally benefitting the local population,
4. alternative income-generating activities,
5. research, and
6. advocacy, including raising awareness activities and taking political influence.

Even though the evaluation of the CTFs' performance in the six programmatic areas was based on the author's subjective opinion, the scoring is considered to provide insights on the CTFs' funding and reporting prioritisation among the different programmatic areas.

Table 1. Scores used to evaluate the CTFs' performance in six programmatic areas

Score	Meaning
0	No activities conducted in the programmatic area
1	Few activities conducted, their appropriateness either doubtful and/or missing information on results
2	Few activities conducted, activities seem appropriate
3	Many activities taken, for some activities, but not all, appropriateness either doubtful and/or missing information on results
4	Many activities conducted, activities seem appropriate
5	Lots of activities conducted, focal point of CTF's work, activities seem appropriate

3.3. Matching research methods and sub-questions

While the main research method of this project is the systematic review, semi-structured interviews informed the systematic review process and complemented the review's findings to enrich the analysis. The semi-structured interviews were targeting representatives from donor organisations of CTFs. Since the interview method only supported the systematic review, it was not intended to reach a strategic or representative sample of the CTF donor organisation landscape. During April 2020, four interviews were conducted with representatives of three NGOs and one development bank, i.e. The Nature Conservancy (TNC), the World Wide Fund For Nature (WWF), Conservation International (CI), and the German

development bank (Kreditanstalt für Wiederaufbau (KfW)). The conducted interviews contributed to answering the first sub-question by highlighting the multiple roles these organisations fulfil in working with CTFs and providing insights to what extend set donor requirements influence the CTFs' results MRE.

What is more, Wolfs Company conducted an online survey among CTFs, which was completed by 50 CTFs in the period between November 2019 and February 2020[9]. The survey results were used to answer the first sub-question, thereby complementing the findings from the systematic review and interviews. Research sub-questions 2 and 3 were answered exclusively using the findings from the systematic review.

[9] The survey was conducted as part of the ongoing preparation of the 10-year review of CTFs led by Wolfs Company.

4. Results

The following sections present the results of the systematic review and interviews, which are complemented by findings from the survey conducted by Wolfs Company. To structure the chapter, results are exhibited per research sub-question.

4.1. Current status of CTFs regarding monitoring, reporting, and evaluating the conservation impact of their activities

4.1.1. Systematic review results

The search for annual and evaluation reports covered 108 operational CTFs worldwide and yielded in total 320 reports to be screened. This total was composed of 305 annual and 15 evaluation reports. Overall, these reports were published by 53 out of the 108 CTFs under review, which represents 49.1 %. While 52 CTFs (48.1 %) published annual reports, only 14 CTFs (13.0 %) made their evaluation reports publicly available. Figure 5 displays the number of CTF reports being publicly available per year during the period under review. The visualisation highlights the overall trend of more reports being published in recent years, 2019 being an exception. The low number for 2019 may be caused by reports still being prepared and hence not being ready for publication yet. The CTFs, which published reports, disclosed on average 5.9 reports between 2008 and 2019. During the search for reports, various cases occurred in which reports were displayed on a CTF's website but could not be retrieved due to technical malfunctioning, reducing the number of reports available for review even though these reports were prepared and intended to be published.

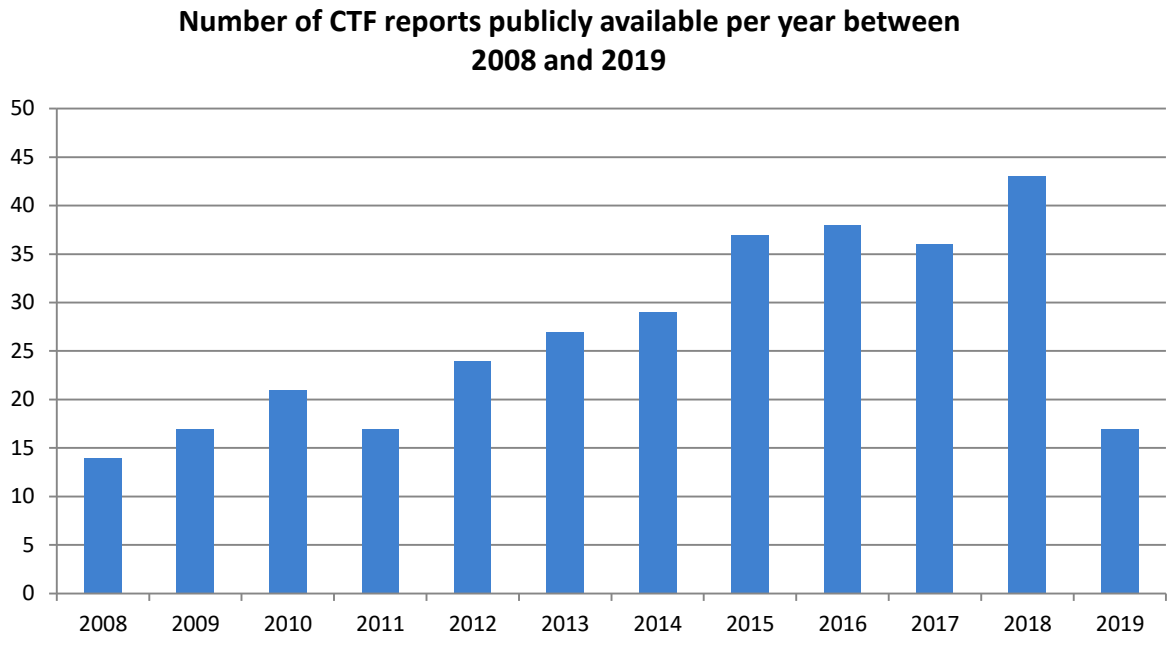

Figure 5. Number of CTF reports publicly available per year between 2008 and 2019

The review of the gathered reports allowed concluding which levels of conservation results (i.e. output, outcome, and impact) were covered by the CTFs' reporting. Out of the 53 CTFs which published reports, 28 CTFs (52.8 %) included output and outcome results into their reports, while 22 CTFs (41.5 %) reported on all three results levels. Two institutions reported on the output level only[10]. The just described distributions are displayed in Figure 6, with Figure 7 presenting the same distributions in an aggregated manner. While these findings exhibit that most CTFs published annual/evaluation reports communicating conservation results, it is also shown that a smaller portion reported at the impact level. The indicators that CTFs used in their reporting are covered in the section answering the second research sub-question.

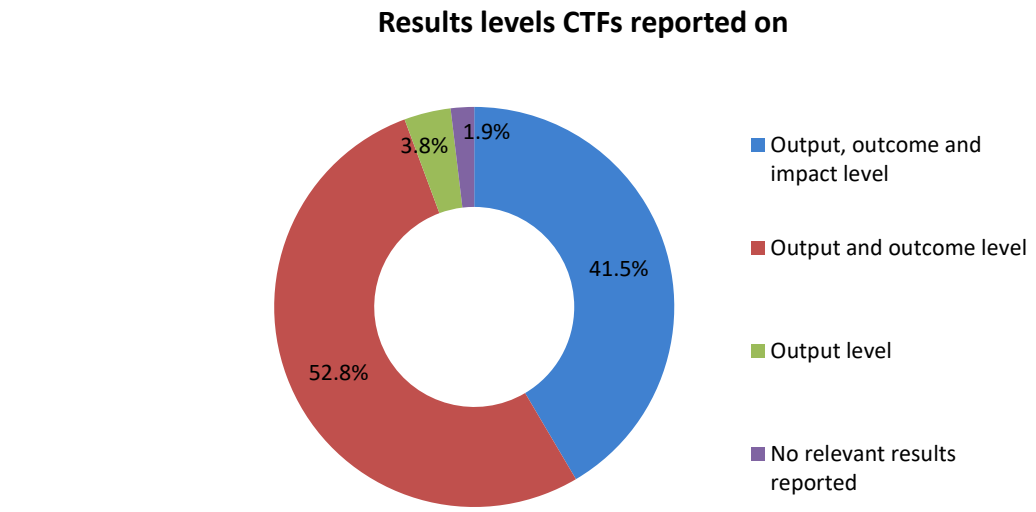

Figure 6. Results levels CTFs reported on

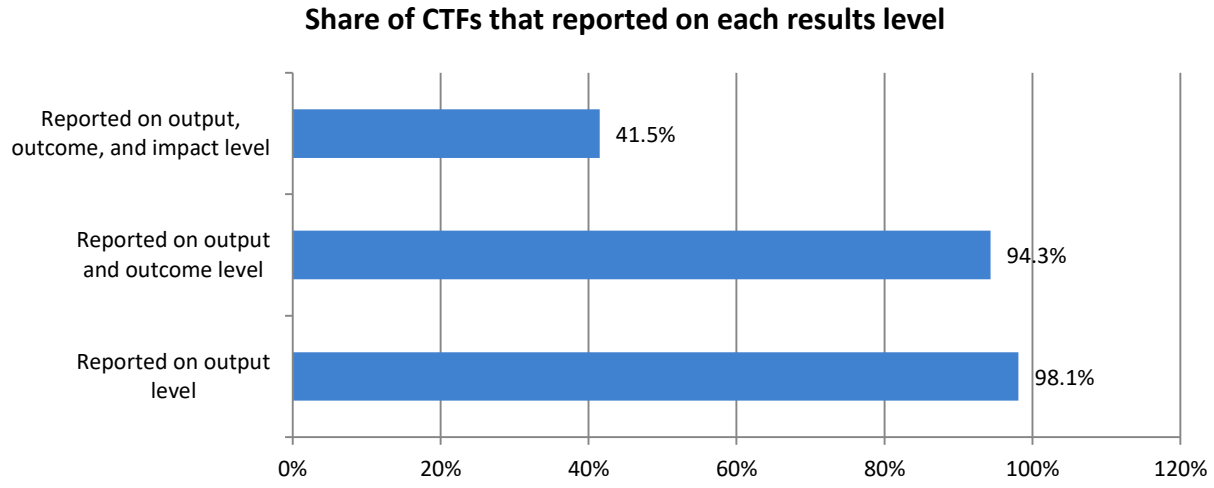

Figure 7. Share of CTFs that reported on each results level

[10] Moreover, one CTF's reporting did not involve any relevant conservation results due to the fact that the declared annual reports turned out to be financial statements instead, focussing on the financial performance of the CTF.

Another aspect studied by the systematic review was the quality of CTFs' results MRE, determined by whether the funds' reports mentioned having a baseline and/or theory of change and possibly further describing these to the reader. As displayed in Figure 8, 41.5 % of the CTFs publishing reports (22 in total) referred to having a baseline or conducting baseline analysis in their reports. Only 11.3 % of CTFs (six in total) further described their baseline scenario by explaining their methodology, the reasoning behind the baseline data collection, or disclosing the actual baseline data. A counterfactual analysis was not mentioned by any of the institutions. Furthermore, 17.0 % of the CTFs with published reports (nine in total) stated having a theory of change, logical framework, and/or strategic plan with clear goals and objectives against which achievements were evaluated in their reports. The share of CTFs presenting or further describing these elements decreased to 7.5 % (four in total).

While a theory of change does not directly relate to a fund's reporting quality, it indicates whether an institution is guided by clearly defined goals and objectives. Moreover, impact evaluations take their origin in a programme's/institution's theory of change by helping to clarify set goals and objectives through establishing measures of programme's success (Gertler et al., 2016). The screening for an underlying theory of change was purposely based on broader terms with also including elaborated strategic plans as an indicator. It was assumed that if a CTF could present clear and well-defined goals and objectives against which it evaluated progress, it would be likely that this fund had gone through the process of defining a theory of change.

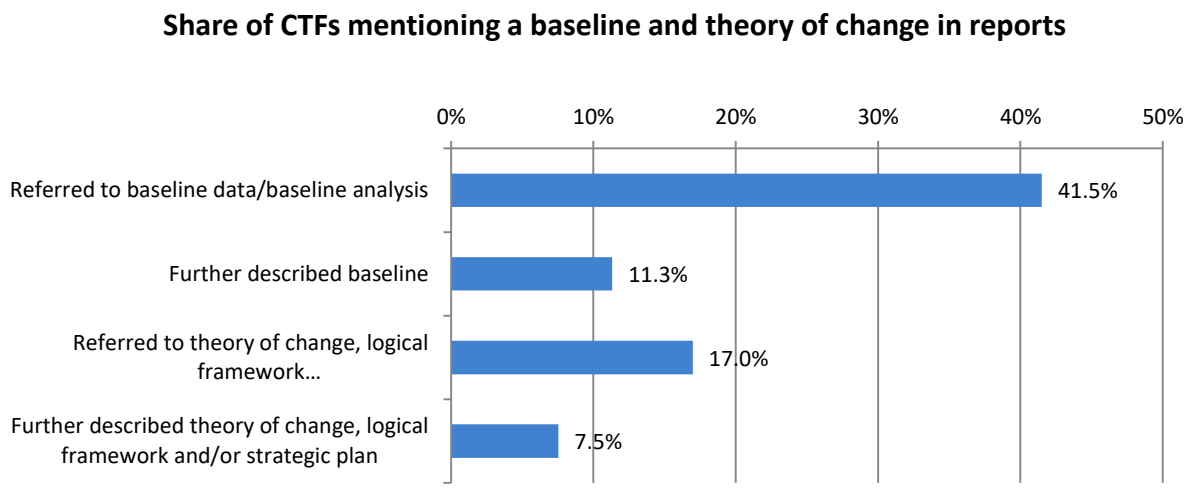

Figure 8. Share of CTFs mentioning a baseline and theory of change in reports

During the screening of reports, some common issues related to the quality of the CTFs' reporting were recognised, which are outlined in the following to provide a descriptive presentation of the funds' reporting as well. When going through the reports, two extremes made it difficult to extract relevant

data. Some CTFs stated achieved results as per individual project without or only scarcely presenting compiled results of their activities. Thus, it took significantly more time to gain an overview of the fund's presented achievements, if at all possible. On the other hand, some funds aggregated and generalised the presented results to an extent where the reported content lost meaningfulness. Detaching output results from the conducted activities by e.g. solely referring to "number of people trained" or "total number of individuals impacted" led to not considering these results. The most common problem encountered in CTFs' reporting was missing clarity in associating results to a project and time. In some cases, project results were stated every year while again being presented as cumulated findings when the project reached completion, without further indicating the double counting. Lastly, another issue encountered when reviewing the funds' reports was linked to the nature of CTFs as grant-making institutions, concerning grants funds in particular. Thus, some CTFs did not clearly differentiate between project results and achievements of grantee organisations as a whole, frequently missing to add a clear indication to what extend the reported results could be attributed to the fund's financial support. This list of common issues related to the CTFs' results reporting enquired during the screening should not give the impression that the reporting of all trust funds was problematic. However, it can be concluded that the difference in reporting quality between the CTFs was significant.

The systematic review moreover delivered results about the CTFs' performance in six programmatic areas, taking the CTFs' level of activity and the perceived appropriateness of action in each area as indicators. It needs to be stated that the scoring relied on the author's subjective opinion, even though the defined scoring scale[11] and the comparison with other CTFs ought to minimize a possible bias. The mean and median of the CTFs' scores in the six programmatic areas, depicted in Figure 9, both showed predominantly homogenous results. The focus of the CTFs' reporting, which is assumed to align with the funds' activities, thus lay on PA support, including institution building in a broader sense, and the programmatic area of alternative income-generating activities. The other four programmatic areas scored relatively similar in the evaluation, with additional environmental preservation, meaning restoring activities and land use management, overall having the lowest mean score.

[11] The scale ranges from 0 to 5, with 5 being the best. The exact definition of each score can be found in Table 1.

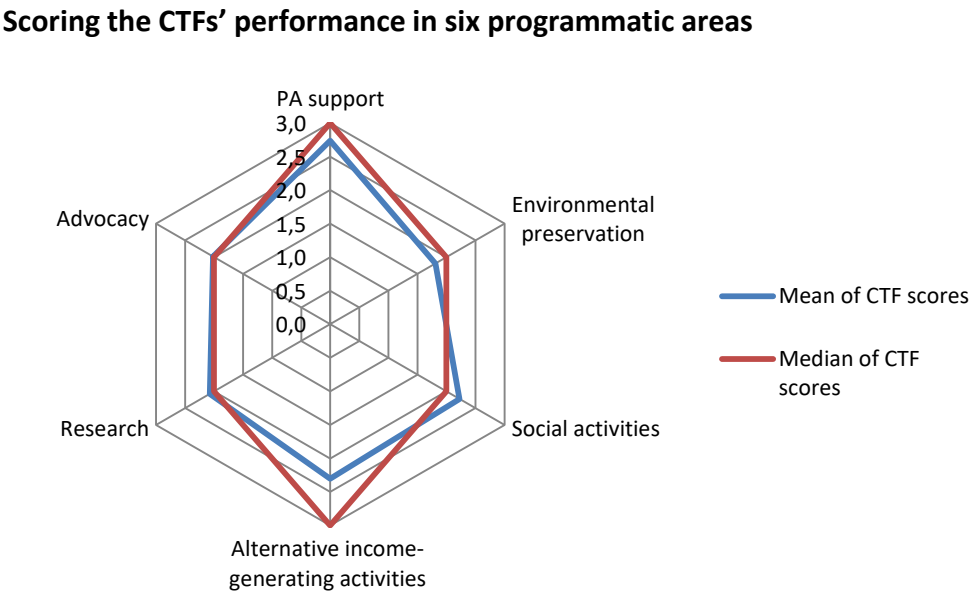

Figure 9. Scoring the CTFs' performance in six programmatic areas

4.1.2. Complementing findings from the survey

The survey conducted by Wolfs Company also included a question on the funds' programmatic areas, specifically questioning which areas received funding over the last ten years. The most common answers are presented in Table 2, showing a slightly different picture than the one obtained from the scorings. Also in the survey, PA management/support was stated as one of the most common programmatic areas CTFs are actively engaged in. In the survey, however, the majority of funds also stated "Habitat & natural process restoration" as a programmatic area receiving funding, a result which does not coincide with the impression obtained from CTFs' reporting. Based on the screening of the CTFs' reports, environmental preservation activities were perceived to be few compared to the action in other programmatic areas, with moreover often little to no tangible results being presented on activities in the environmental preservation programmatic area. Advocacy and research activities, which only reached medium scores based on reporting, were also not present among the most frequently funded programmatic areas mentioned in the survey.

The survey also included a question related to the topic of funding requirements. Participating funds were asked whether donors requested monitoring the performance and/or the impact of the CTF. Accordingly, 72 % of the institutions stated that donors requested performance monitoring, while also impact monitoring was demanded from 62 % of the CTFs participating in the survey. The requirements set by CTF donor organisations are further elaborated in the following section.

Table 2. Survey results on programmatic areas funded by CTFs over the last ten years[12]

Programmatic areas funded	Percentage of CTFs
Management of terrestrial protected areas	68.1%
Habitat & natural process restoration	61.7%
Awareness & communications	61.7%
Climate change adaptation	55.3%
Training of civil society	53.2%
Species management	46.8%
Management of marine protected areas	44.7%

4.1.3. Interview results

The following paragraphs present insights obtained from the interviews with representatives of CTF donor organisations. For consistency, differing terms used by interviewees when referring to conservation results have been replaced with the terminology used in this report. The overall aim of the conducted interviews was to better understand how and to what extent these organisations influence the CTFs' MRE activities.

A starting point therefore was to investigate the different roles the donor organisations take in their work with CTFs. The three consulted NGO representatives stated that performed activities in relation to CTFs range from helping to establish a CTF, offering advice and technical assistance, to channelling financial resources towards the CTF. It was also mentioned in all three cases that sometimes, but not necessarily, NGOs would become members of the CTF board to provide oversight and continue assistance. Curan Bonham from CI added that being involved in the project design as well as in its follow-up is another aspect of the organisation's work with CTFs. KfW representative Uwe Klug on the other hand stated that the development bank's main and foremost role concerning CTFs is its function as a funding organisation. In addition to that, the bank is also involved in establishing new CTFs and providing capacity development assistance to the CTF as an institution. Exceptionally KfW holds a seat on the CTF's board over a given period of time (G. Jeffries, personal communication, April 14, 2020; J. Tua, personal communication, April 15, 2020; C. Bonham, personal communication, April 21, 2020; U. Klug, personal communication, April 24, 2020).

A central aspect of the interviews was the enquiry on set requirements towards CTFs as condition for the organisations support, thereby focussing on requirements towards the MRE activities of CTFs. Glen Jeffries from the NatureVest team of The Nature Conservancy (TNC) emphasized that CTFs typically

[12] Preliminary results of the ongoing update of the 10-year review of CTFs led by Wolfs Company

need to have certain general requirements in place which would likely be of importance for any NGO or other institution putting money into the trust fund. Among these general requirements, Jeffries listed the CTF's independence from the government, the CTF's ability to receive a broad range of funding, to manage and then disburse that funding to a broad spectrum of project partners and the CTF's legal structure being appropriately set up. Similar basic conditions were also mentioned by the CI representative Curan Bonham. Jeffries further explained that in regards to results reporting donors typically require three kinds of reporting levels from CTFs: regularly provided project-related reporting, longer reports, showing the CTF achievements over five to ten years, and thirdly a self-analysis of the trust fund's overall progress and effectiveness. Grant or funding agreements will thus include a time plan when these reporting elements need to be delivered by the supported CTF. Typically also a strategic report is part of the donor's requirements, mapping the CTF's vision for the next three to five years. In regards to long-term results reporting Jeffries pointed out a general issue, namely, the large time spans it takes in practice to achieve outcomes or even impacts. Overall, all these named requirements are not just encouraged and "nice to have" but constitute actual conditions for support (G. Jeffries, personal communication, April 14, 2020). The obligatory nature of set requirements was also stressed by the CI and KfW representatives.

CTFs being supported by CI are generally obliged to report on determined aspects until ten years after the investment of the organisation. According to Curan Bonham, CI thereby focuses on financial aspects, while leaving MRE of conservation results mostly up to the CTF. Part of the requirements the organisation sets up when working with PA CTFs is the Management Effectiveness Tracking Tool (METT) developed by WWF and The World Bank[13], tracing enabling conditions rather than conservation results. Since the majority of PA CTFs supported by CI cover forest areas, the organisation aims to essentially track one clear conservation outcome by showing the evolution of deforestation rates in these areas. The deforestation rate calculation is conducted using remote sensing and spatial analysis and generally is not a duty of the CTF but organised by CI. When supported PAs that are rather small or cover non-forest area, CI instead requires the monitoring of the development of key species, while not specifying how the monitoring plan should specifically look like (C. Bonham, personal communication, April 21).

The interviews moreover included asking for the representatives' perception of the current state of the CTFs' MRE activities. Uwe Klug stated that from his perspective, CTFs were initially more focused on demonstrating institutional progress by e.g. showing financial returns, while nowadays reporting on the ground impacts of the funds' activities is part of every signed financing agreement (U. Klug, personal communication, April 24, 2020). Curan Bonham on the other hand pointed out an increased

[13] According to World Wide Fund for Nature and The World Bank (2007) the METT was developed to "provide a quick overview of progress in improving the effectiveness of management in individual [PAs]" (p. 5).

management quality of CTFs and PAs over time, while he did not perceive a change in the quality of CTFs' results reporting. Bonham also mentioned that while CTFs conduct a lot of outcome monitoring, impact monitoring on the other hand is seen rarely (C. Bonham, personal communication, April 21). WWF is actively engaged in Project Finance for Permanence (PFP)[14] initiatives, and Jon Tua's observations relate to CTFs that are part of PFPs. According to Tua (WWF), CTFs involved in PFP initiatives are generally doing well at measuring both outputs as well as medium to long-term results. Thus, for example, the Amazon Region Protected Areas (ARPA) PFP initiative tracks deforestation rates in its PAs, the Great Bear Rainforest PFP tracks the number of new sustainable jobs and enterprises created by Indigenous peoples, while the Bhutan for Life PFP[15] tracks populations of tigers and snow leopards. Tua moreover illustrated how M&E efforts of involved parties are intended to focus on a few but meaningful indicators, since tracking an endless list of indicators would require too much effort and too many financial resources (J. Tua, personal communication, April 15, 2020). Jeffries shared that from his point of view the quality of MRE has increased slightly in recent years. According to Jeffries, one reason for this quality improvement could be attributed to the framework of outputs, outcomes, and impact being used more consistently (G. Jeffries, personal communication, April 14, 2020).

All of the conducted interviews involved discussing the topic of monitoring, reporting, and evaluating conservation results in general, while particularly focussing on long-term results. Therefore it was considered to be highly relevant clarifying what the interviewed representatives defined as long-term conservation results, assuming that also CTFs would be influenced by the organisations' definitions. During the interviews, it became apparent that all three NGO representatives who were asked for how they defined long-term conservation results shared the OECD results definitions used in this research project. CI's representative Curan Bonham's description of the difference between outcome and impact level thereby added another aspect to the OECD definition. He described impacts as effects going beyond the scale of an intervention while outcomes fall into the scope a project controls. Bonham moreover confirmed that conservation practitioners are not necessarily sharing a common understanding of outcomes versus impact results and there exists a lack of clarity distinguishing these two results levels in conservation practice, which was also mentioned in other interviews (C. Bonham, personal communication, April 21). In a similar context, Jon Tua referred to the CMP's Open Standards, which encourage projects and programs to separate short-term versus long-term results. He added that while he would like to see a focus on longer-term results, outputs should not be seen as insignificant,

[14] Linden et al. (2012) describe the PFP approach as related to deal-making in conservation practice, setting itself apart through a particularly strong vision for permanence and integrating the process of project finance. PFP initiatives thus do not start until all the financial resources needed for long-term success are mobilised.

[15] The ARPA PFP, Great Bear Rainforest PFP, and Bhutan for Life PFP initiatives are three of five PFP initiatives worldwide that have reached a closing to date. In other words, these initiatives raised the financial resources to achieve specific conservation goals and met other policy, capacity, governance, and sustainable financing conditions that are necessary for long-term success (J. Tua, personal communication, April 15, 2020).

since ultimately these short-term results are needed to achieve longer-term results (J. Tua, personal communication, April 15, 2020).

The previous section already mentioned a topic further addressed in the interviews as well: initiatives related to the results MRE of CTFs, specifically focussing on standard-setting and capacity building. When being asked which initiative the interviewees perceived as especially useful in practice, all four representatives named the Practice standards for CTFs published by the CFA. Jon Tua furthermore indicated that the standards had a positive effect on the quality of CTFs' governance, management, and operations, also including results MRE, with many organisations using the standards like a checklist (J. Tua, personal communication, April 15, 2020). Glen Jeffries on the other hand stated that while these standards are a very useful starting point for a wide variety of stakeholders interested in CTFs, they do not contain all the information that is needed on how to design a CTF (G. Jeffries, personal communication, April 14, 2020). Besides, the interviewees also mentioned the METT and the CMP's Open Standards as initiatives being particularly useful and applied in practice (J. Tua, personal communication, April 15, 2020; C. Bonham, personal communication, April 21).

Another aspect the interviews dealt with was the aggregation of results, which would make it possible to demonstrate the overall effects a CTF had through the support of various PAs and/or projects. Jeffries indicated that CTFs already should be able to aggregate the results of all their activities while acknowledging that this could become significantly harder for funds covering several regions, countries, or ecosystem types. According to Jeffries, compiling results on the output level thereby would be relatively straight forward, aggregating outcomes on the other hand could get a lot more difficult since projects might cover locations varying significantly in their characteristics (G. Jeffries, personal communication, April 14, 2020). Curan Bonham shared the concerns of Jeffries regarding the aggregation of results on the outcome or impact level compared to outputs. While CI generally tends to compile information on the PA level, he moreover noted that aggregating results on the CTF level could be especially interesting for donors (C. Bonham, personal communication, April 21). Uwe Klug had similar thoughts on the topic, stating that the aggregation of results would be a good way for CTFs to prove their effectiveness since they are competing for financing with other sustainable financing instruments (U. Klug, personal communication, April 24, 2020).

When conducting these four interviews, the impression took shape that while the requirements of a few donor organisations should be manageable for a CTF, the multitude of different MRE stipulations could eventually become an overload of requirements. Jeffries stated in this regard that when working with CTFs, donors would mention the different requirements linked to their funding allocation. Accordingly there was no single report design which could satisfy different donor organisations at once. Overall,

Jeffries does not consider aligning the requirements among donor organisations to be practically feasible since the concerning organisations all work differently (G. Jeffries, personal communication, April 14, 2020). Jon Tua confirmed that requirements coming from donor organisations are often unique, while he attributed this fact to the individual preferences, own interests, and priorities of every institution supporting a CTF. He compared looking for standardised requirements for CTFs with standardising reporting for conservation practice around the world: In theory a common standard among organisations worldwide could be achieved, in practice however this would be a difficult and long process requiring all kinds of donors to be on board. In this context, Tua once more referred to the PFP approach, which tries to resolve some of the just mentioned inefficiencies by bringing together a number of donors agreeing on a plan, with one set of goals and activities and subsequently one set of indicators to track progress. To succeed in conservation in general including CTFs, Tua added, it needs partners working together, agreeing on common goals, bringing donors together to start big initiatives, which increase efficiencies and create economies of scale. Otherwise, money spent to achieve conservation impacts would remain fractured, with piecemeal resources coming in waves and being tied to different requirements and issues (J. Tua, personal communication, April 15, 2020).

4.2. Key indicators used by CTFs to measure their conservation impact

The information gathered through the systematic review, amongst others, comprises the indicators CTFs used in their annual and evaluation reports. During the evaluation of the review's findings, all of the funds' indicators were collected and subsequently merged and generalised to create an overview of the most frequently used indicators. The composed overview can be found in Figure 10. While still including numerous indicators, the overview constitutes a highly condensed list compared to the total amount of indicators extracted from the reports. The number stated in parenthesis behind each indicator in the list shows how many CTFs used it in their reporting. Generalised indicators, containing more project-specific indicators as well, are marked with an asterisk.

While output and outcome results were reported using quantitative indicators, all CTFs under review stated impact level results in more qualitative terms. Besides the research project's specific focus on impacts, this is why the following paragraph examines the impact indicators in more detail. All impact indicators identified in the CTFs' reporting were formulated as contributions towards national or international agreements related to nature conservation or sustainable development. The agreements which were addressed most frequently were the CBD Aichi targets and the UN Sustainable Development Goals (SDGs). When stating such a contribution, the CTF either referred to contributing to the agreement in general or specified in more detail, which part of the agreement its work addressed particularly. Applied to the SDGs, this meant six CTFs mentioning a contribution to the agreement as a whole, while five funds specified to which particular goal(s) of the agreement they were contributing to.

Only one CTF elaborated how its work helped to achieve the SDGs on the target-level[16]. The same pattern of mentioning general versus target-specific contributions was observed for the Aichi targets.

Output

Generally applicable indicators:

- Hectares of landscape covered by CTF support (43)*
- Number of projects supported/financed per year/in total (38)
- Total number of PAs, parks, reserves and/or conservancies supported by CTF (26)
- Hectares of landscape added to PAs, parks, reserves, conservancies and/or CTF supervision (13)*

CTF specific indicators:

- Number of people participating in education workshops, lectures and/or programs per year/in total (49)*
- Number of infrastructure works completed benefitting local population per/in total (32)*
- Number of people taking part in organised awareness raising events per year/in total (29)*
- Number of studies conducted per year/in total (28)*
- Number of trees and/or mangroves planted per year/in total (26)*
- Number of educational, promotional and/or informative materials produced or distributed per year/in total (26)*
- Number of people, households or communities benefitting from alternative income-generating activities per year/ in total (23)
- Number of CTF staff, PA staff and/or rangers trained per year/in total (22)
- Number of CTF strategic plans developed and/or updated in total (22)
- Number of media features on CTF's work published per year/in total (21)*
- Number of CTF's social media followers, YouTube subscribers or website users gained per year/in total (21)*
- Number or kilogram of inputs, equipment and/or production modules supplied for alternative income generating activities per year/in total (19)*
- Number of people or households reached through awareness raising campaigns, demonstrations and/or programs per year/in total (19)*
- Number of management or development plans for PAs, landscapes and/or communities developed or updated per year/in total (18)*
- Number of CTF and PA employees and/or people directly employed through project activities per year/in total (18)*
- Number of government officials, professionals and/or community leaders trained per year/in total (16)
- Number of education workshops, lectures and/or programs per year/in total (16)*
- Number of local enterprises established and/or supported per year/in total (15)*

Outcome

- Number of people trained to practice sustainable economic activities per year/in total (37)*
- Hectares of land reforested, afforested and/or restored per year/in total (28)
- Total number of species conserved in supported PAs, parks and/or reserves (20)*
- Total revenue generated through sustainable livelihoods per year (17)*
- Tons of CO2 equivalent emissions avoided and/or reduced per year/in total (14)
- Hectares of land brought under a sustainable management tool per year/in total (12)*
- Total number of books, book chapters and/or scientific articles published per year/in total (12)
- Hectares of land brought under improved agricultural management and/or a PES scheme per year/in total (9)*
- Number of studies, reports and/or articles published per year/in total (11)*

Impact

- Mentioned contribution to SDGs in general (6, overall 12 CTFs mention addressing SDGs)
- Mentioned contribution to SDGs, specifying which goals are addressed in particular (5)
- Mentioned contribution to Aichi targets, specifying which targets are addressed in particular (6, overall 10 CTFs mention addressing Aichi targets)
- Mentioned contribution to UNFCCC (5)
- Mentioned contribution to Aichi targets in general (4)

* Generalised indicator containing more project-specific indicators

Figure 10. List of most frequently used indicators by CTFs under review

[16] The United Nations (n.d.b) describe the SDGs as the central component of the 2030 Agenda for Sustainable Development, which was adopted by the UN Member States in 2015. The SDGs are composed of 17 goals, which are further structured by targets. The progress towards the targets is measured using determined indicators.

The quality of describing and thereby to some extent proving these contributions towards national or international agreements varied significantly. To illustrate this difference, two examples of the CTF's reporting are presented in the following. The Fondation Environnementale Tany Meva, a CTF operating in Madagascar, linked its work to a contribution to international agreements by listing the respective agreements introduced by the phrase: "Tany Meva also contributes to achieving the objectives of international conventions such as […]" (Fondation Environnementale Tany Meva, 2018, p. 4). While explicitly mentioning these conventions demonstrates the CTF's awareness for the global perspective of its work, the given statement does not describe how the work of the CTF aids achieving the named conventions. The second example is taken from the annual report of the Brazilian CTF Fundo Amazonia, in which the fund referred to its contribution to the SDGs. Therein the trust fund explicitly listed for which of the 17 goals it could identify a contribution through its activities and subsequently presented a table containing further descriptions on how its work contributed to the beforehand identified goals (Amazon Fund, 2018). The CTF therefore proves to some extent that its work indeed contributes to the achievement of the SDGs.

The created list of the most frequently used results indicators did not leave room for presenting indicators perceived as especially SMART, which were utilised by a few CTFs only. Therefore some best practice examples of such indicators are provided in the following. Since output indicators express the direct results of conducted activities, they usually capture particularly institution/project-specific aspects. Output indicators hence often fulfil the SMART criteria, while having limited applicability for other institutions. Outcome indicators on the other hand are deemed to serve as better examples here since CTFs overall aim to achieve similar or related goals and hence also one CTF's measures of medium-term effects might be applicable for other funds as well. The best practice examples of outcome indicators are displayed in Figure 11.

The reporting of the Brazilian CTF Fundo Amazonia is subsequently elaborated further to illustrate a best practice indicator in more detail. The fund structures its reports distinguishing between indicators linked to its general objective, reducing deforestation in the Brazilian Amazon with sustainable development, and project-related results indicators. Fundo Amazonia measures project-related results using numerous indicators, while here only two indicators are highlighted in particular. In its sustainable production component, the CTF included an indicator which also many other trust funds used in a similar version in their reporting, namely "Individuals trained to practice sustainable economic activities (total)". When examining this indicator, it could be argued to be questionable whether it constitutes an output or an outcome result. Following the logic that people who participated in such training were indeed capacitated to practice a sustainable job, it was decided to consider it as an outcome indicator. The actual best practice example here is the indicator, which Fundo Amazonia presented in addition to the

just mentioned one. By moreover reporting on the indicator "Individuals trained to practice sustainable economic activities effectively using the knowledge acquired (total)", the CTF leaves no doubt that this component of its work produces outcome results (Amazon Fund, 2018).

Best practise examples of outcome indicators

- Change in annual deforestation rates in % (3)
- Number of key species with stable or increasing population in conservancies (5)
- Change in poaching numbers of a specific species in % (3)*
- Change in human-wildlife conflict cases recorded in % (1)
- Change in average annual income of project beneficiaries in % (2)
- Change in conviction rate for wildlife crimes in % (2)
- Change in school enrolment rate for children living in communities bordering PAs in % (1)
- Individuals trained to practice sustainable economic activities effectively using the knowledge in total (1)
- Number of (re)discovered species per year/in total (5)
- Change in the PA management effectiveness score in % (3)*

* Generalised indicator containing more project-specific indicators

Figure 11. Best practice examples of outcome indicators used in CTF reporting

4.3. Conservation impact of CTFs from 2009 to 2018

While the research project's second sub-question focusses on the key indicators CTFs use in their reporting, sub-question 3 takes a step further by asking for the actual data on these key indicators. Since the systematic review did not only collect the indicators used in the trust funds' reporting but also extract the actual data on these indicators, it was possible to aggregate the CTFs' reported conservation results on selected key indicators between 2009 and 2018. In order to fit this task into the time span of this research project, it was decided to only compile data for the output indicators listed as generally applicable. Since the CTFs stated impact indicator in qualitative terms, impact results could not be aggregated further and hence are not included in the overview of compiled results. To avoid double counting, it was checked whether data reported by global and regional CTFs overlapped with results stated from national CTFs. The exclusion of data due to the given reason affected one regional CTF[17]. The aggregated results CTFs achieved and reported on over the given time span are presented in Table 3.

To put these conservation results into perspective, they are stated against an input value. The review also collected data on the indicator "Amount of allocated PA and/or project funding disbursed per

[17] Data on the indicators "Hectares of landscape covered by CTF support" and "Number of PAs, parks, reserves, and/or conservancies supported by CTF" reported by the Mesoamerican Reef Fund (MAR Fund) were excluded to avoid double counting.

year/in total", which was subsequently compiled for the same time span (2009 to 2018). The total value for this indicator is presented in Table 4, while Figure 12 displays the amount of allocated funding disbursed per year between 2009 and 2018.

Table 3. Output and outcome key indicators and their aggregated values for 2009 to 2018

Key indicator	Aggregated value
Hectares of landscape covered by CTF support (27)*	**153,617,900**[18]
Hectares of landscape added to PAs, parks, reserves, conservancies and/ or CTF supervision (5)*	**3,179,900**[18]
Total number of PAs, parks, reserves and/ or conservancies supported by CTF (30)	**965**
Number of projects supported/ financed (28)	**3,838**
Key indicator	**Aggregated value**
Hectares of land reforested, afforested and/ or restored (22)	**213,700**[18]
Total number of species conserved in supported PAs, parks and/ or reserves (13)*	**Ranging from 19 to 497**[19]
Hectares of land brought under a sustainable management tool (8)*	**28,185,500**[18]
Hectares of land brought under improved agricultural management and/or a PES scheme (9)*	**571,700**[18]
Tons of CO2 equivalent emissions avoided and/or reduced (10)	**524,312,800**[18]
Number of people trained to practice sustainable economic activities (22)*	**90,535**
Number of studies, reports and/ or articles published per year/ in total (11)*	**521**
Total number of books, book chapters and/ or scientific articles published per year/ in total (9)	**448**

* Generalised indicator containing more project-specific indicators

[18] Since the compiled results are high-level estimates and it is assumed that CTFs to some extent rounded up reported numbers, these compiled results are stated as approximated values to hundreds.

[19] The values for this indicator were not aggregated but instead presented in their range since it was assumed that CTFs would to some extent protect and hence list the same species. This is why aggregating the values would have most likely exaggerated the number of (different) species conserved.

Table 4. Input indicator and its aggregated value for 2009 to 2018

Input indicator	Aggregated value*
Total amount of allocated PA and/or project funding disbursed (28)	**USD 1,911,506,530**

* Value expressed in USD as of 2018 (adjusted for inflation and PPP)

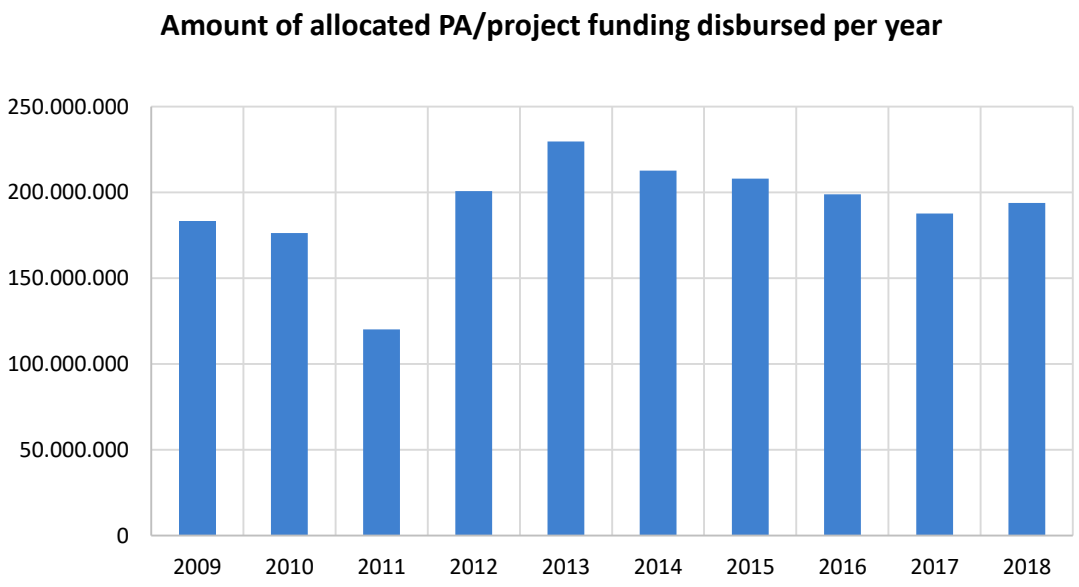

Figure 12. Amount of allocated PA/project funding disbursed per year in USD as of 2018 (adjusted for inflation and PPP)

The number stated in parenthesis behind each indicator listed in Table 3, as well as in Table 4, specifies for how many CTFs results data was available to calculate the presented aggregated value. When comparing these numbers to the ones shown in Figure 10, it stands out that the two numbers differ in some instances for the same indicator. These differences between the stated number of CTFs using an indicator and the number of CTFs in the end holding data on this indicator have multiple reasons. Firstly, to capture all the indicators used in the CTFs' reporting, also indicators stated in reports for which no actual data was presented were noted and went into the collection of indicators. Secondly, during the evaluation of the review's findings, indicators found in the reports were merged and, if necessary, generalised meaning that after this process multiple project-specific indicators fell into only one generalised indicator. In one case, the number of funds for which data was available on that specific indicator exceeded the amount of CTFs, which were stated to report on it. This difference must be attributed to a shortcoming in execution during the merging and generalising of indicators.

The compiled values shown in Table 3 are based on the reporting of the 53 CTFs which made their annual and evaluation reports publicly available and hence could be considered in the systematic review. The stated aggregated conservation results therefore come from 49.1 % of the operational CTFs worldwide. Output and outcome results were moreover compiled for selected key indicators, neglecting

available data on a multitude of other indicators used by the trust funds. The stated results should hence be treated as lower bound estimates.

With the current information at hand, it is moreover not considered feasible to further investigate the CTFs' efficiency in creating conservation impacts. Calculating a "conservation return on investment" ratio, showing which outcome was produced by the individual institutions for every euro invested, would require data on the overall input of financial resources towards CTFs over the given time span. Unfortunately, data on this aspect could not be found consistently in the CTFs' reports.

5. Discussion and conclusion

5.1. Answering the research question

The formulated research sub-questions built on top of each other, which is why this chapter is first answering the three sub-questions before responding to the overarching research question.

The following paragraphs summarise and evaluate the findings from the systematic review, interviews, and survey with regard to the first sub-question of this research project: **"What is the current status of CTFs worldwide regarding monitoring, reporting, and evaluating the conservation impact of their activities?"** Firstly, the review has shown that 49.1 % of the operational CTFs worldwide make their annual and evaluation reports publicly available. Having in mind that all trust funds should to some extent monitor, report, and evaluate their activities, and preparing an annual report is explicitly recommended by the Practice Standards for CTFs, this share is surprisingly small. Among the CTFs which published reports between 2008 and 2019, the vast majority (94.3 %) reported on the outputs and outcomes of their activities. 41.5 % of the institutions publishing annual/evaluation reports even considered some form of impacts in their reporting. When evaluating the CTFs' impact reporting also the quality of the used indicators needs to be considered, which is further elaborated when turning to sub-question 2. The interviews with representatives from donor organisations working with CTFs confirmed that reporting on output and outcome results became common practice. However, it was stated in the interviews that there exists a lack of common understanding on conservation impact and missing clarity in the distinction between outcomes versus impact results in conservation practice, including CTFs. This lack of clarity was noticeable in the funds' impact reporting, also discussed in more detail when answering the second sub-question. Overall, the interviewees perceived the scope and quality of CTFs' results MRE to have slightly increased during recent years, with especially Uwe Klug from the KfW stating an enhanced focus of reporting on the institutions' conservation impact. The findings from the systematic review confirmed that the CTFs' reporting increased in recent years, showing a constant upward trend in the number of CTFs' annual and evaluation reports made publicly available between 2008 and 2018. However, this trend could possibly also be attributed to an enhanced digital presence of the CTFs, increasingly publishing organisational documents online.

The systematic review findings related to the underlying quality of the funds' results reporting on the other hand were rather mixed, showing that less than half of all CTFs (41.5 %) which made their reports publicly available referred to having a baseline or conducting baseline analysis. Furthermore, none of the CTFs' reports mentioned a counterfactual analysis. The majority of CTFs whose reports were analysed (58.5 %) thus did not present any evidence allowing attributing the stated results to their activities. Hence, the additionality of the reported results seems questionable for most of the

institutions under review. The manual screening of the CTFs' reports as part of the systematic review moreover showed that the quality of the trust funds' reports differs significantly. Besides, only 17.5 % of the funds mentioned a theory of change, logical framework and/or strategic plan with clear goals and objectives in their reports. For 82.5 % of the CTFs which made reports publicly available it thus has to be assumed that they either did not formulate a theory of change or strategic plan with goals and objectives or missed to present it in their reports. While this aspect does not directly relate to a fund's reporting quality, it indicates whether an institution is guided by set goals and objectives. The existence of a theory of change is hence considered to influence a CTF's effectiveness in delivering conservation results.

As for the programmatic focus of CTFs as institutions, the scoring conducted as part of the systematic review evaluation as well as the survey conducted by Wolfs Company indicated that the support and management of PAs is a focal point of CTFs' activities. The survey results moreover pointed out that this refers to the management of terrestrial PAs in particular. The acquired insights correspond to findings in literature, naming the partial financing of PA long-term management costs as one of the main tasks assigned to CTFs (Bladon et al., 2014; Bonham et al., 2014; Spergel & Mikitin, 2013).

The survey also showed that requirements set by CTF donor organisations in most of the cases involve the performance (72 %) as well as impact monitoring (62 %) of trust funds. Taking the interviews with representatives from CTF donor organisations as a reference, the requirements these organisations set amongst others towards the results MRE of CTFs are assumed to influence the funds significantly, having in mind that set conditions are mandatory for receiving support. The organisations thereby enable passing on best practices, while assisting CTFs in the realisation of requirements through technical support, and thus contribute to the funds' good governance. On the other hand, the multitude of different requirements coming from donor organisation might lead to an overload of stipulations, distracting from the original purpose of the CTFs' work. In this regard, two of the interviewees confirmed that requirements tied to funding allocations are often unique, moreover saying that it was not considered feasible or at least very difficult to align donor requirements. Furthermore, it seemed to be common and also expected that the CTFs aggregate the results of their activities to present their overall impact. Yet, interviewees considered aggregating results to get more complex on the outcome and impact level, being especially challenging for funds covering locations with varying characteristics. The expectations towards CTFs and the feasibility of aggregating results thus did not seem to be levelled equally.

The representatives of CTF donor organisations named the Practice Standards for CTFs and the CMP's Open Standards as the initiatives perceived as most useful and frequently used by CTFs. The interviews

also clearly illustrated several aspects related to the results MRE of CTFs requiring further technical improvement and communication, i.e. the lack of clarity in the understanding of conservation impact, the distinction between outcomes and impacts, and the aggregation of the CTFs' long-term effects, particularly for operations covering locations with varying characteristics. It hence needs the continuative efforts of mentioned and other initiatives to further improve technical guidance on these aspects related to the CTFs' results MRE.

In sum, the systematic review, interviews, and survey provided comprehensive information on the CTFs' current status in monitoring, reporting, and evaluating the results of their activities. Examined aspects involved the scope and quality of funds' results reporting, the programmatic areas CTFs focus on, as well as the requirements set by CTF donor organisations influencing the trust funds' MRE. Lastly, it was explored which existing initiatives related to CTFs and results MRE are most commonly used while also listing which technical aspects still demand further clarification and refinement.

After indicating all relevant findings in the results section, the essentials related to sub-question 2 **"Which key indicators are used by CTFs to measure their conservation impact?"** are presented in the following. The review's findings showed which indicators CTFs used to report on the results of their activities. Thereby different facets were considered by not only illustrating the funds' most frequently used indicators but furthermore showing best practice examples of outcome indicators deemed especially SMART but being utilised less often. Findings on the qualitative impact indicators were moreover elaborated in further detail, demonstrating a considerable difference in reporting quality among the CTFs.

When designing the thematic scope serving as a basis for the systematic review, it was decided to consider any stated contribution towards national or international agreements as an impact indicator, taking the Indufor report as example (Indufor, 2018). When evaluating the review's findings, however, it was noted that most of these stated contributions were fairly limited in their meaningfulness. Examining the contributions indicated by CTFs in more detail allowed distinguishing them into three levels, with only the third and last level indicating impact results. Firstly, stating a contribution without describing how conducted activities helped to achieve national or international agreements at most demonstrates the CTF's awareness for the global perspective of its work. By simply linking its work to the national/international agreement, the CTF refers to impact results without proving if its work creates impact. Out of the 22 CTFs which stated contributions to national or international agreements in their reporting, and therefore were considered to report on impact, 15 described that their work contributed to achieving the agreements without further describing how. Six CTFs took their stated contributions to a next level by elaborating them further. These CTFs explained how they had contributed to a national

or international agreement by stating conducted activities and/or output/outcome results aiding to achieve the respective agreement's goals or targets. In addition to a qualitative description of the CTFs contribution, some of these trust funds used indicators to measure their contribution to national or international agreements. However, the used indicators could not prove a direct contribution to the agreement(s) since they did not correspond to the indicators determined in the national plan (e.g. named National Biodiversity Strategy and Action Plan (NBSAP) in the context of the Aichi targets), measuring progress against the pledged national contribution, or the indicators set in the national/international agreement itself. Lastly, the third level and actual indicator for impact results would be if a CTF could prove its contribution to a national/international agreement by using an indicator directly measuring achievement towards nationally pledged contributions to agreements, or indicators determined in the national/international agreements themselves. One CTF fell into this category by using indicators linked to Aichi target 11 which were proposed by the CBD secretariat, i.e. Palau's percentage of nearshore marine and terrestrial areas protected and in the Protected Area Network (PAN) and number of Palau's PAN sites assessed for PA management effectiveness (CBD Secretariat, 2016; Ministry of Natural Resources, Environment & Tourism & Protected Areas Network Fund, 2015). However, these indicators proving achievements towards Aichi target 11 were presented in the context of a PAN site analysis and were not clearly attributed to the CTF's work.

It is thus reasoned that none of the CTFs under review could clearly prove the long-term effects, hence the impact, of its work. This shortcoming in impact reporting could possibly be attributed to the existing lack of clarity in defining impacts and the vagueness in distinguishing outcome and impact results, which were discussed in the interviews. While the expressed contributions to national or international agreements in the CTFs' reporting could in the end not be considered as impact indicators, the stated contributions nevertheless underlined the global perspective of the CTFs' work. Stressing that the CTFs' efforts help to achieve milestones like the Aichi Targets or SDGs might aid underlining and communicating their importance.

To conclude, the systematic review was able to show which key indicators CTFs used when reporting on the outputs, outcomes, and, according to the thematic scope, impact of their activities. However, when examining the mostly qualitatively stated impact in more detail, it was concluded that none of the impact indicators captured the long-term effects of the CTFs' work.

Turning to the last sub-question of this research project, namely: **"What has been the conservation impact of CTFs from 2009 to 2018 based on existing information?"** The systematic review enabled to cumulate the retrieved data for key output and outcome indicators, effectively presenting the achieved and reported impact of CTFs between 2009 and 2018. These numbers illustrate the conservation impact

CTFs had over ten years as accurate as possible based on existing information and within the scope of this research project. However, the limited data availability needs to be considered when evaluating the stated figures. The conservation results were to some extent put in perspective by moreover presenting the aggregated value of an input indicator for the same time period.

Answering the project's sub-questions provided the necessary insights to finally respond to the overarching question set for this research project: **"How to capture the conservation impact of Conservation Trust Funds?"** Combining the lessons learnt from the research project enables the author to present suggestions aimed at improving the CTFs' results MRE, giving direction on how to capture the institutions' conservation impact. After all, it comes down to two attributes: Transparency and accuracy. While this may sound trivial, the most common issues encountered in the trust funds' reporting related to these two aspects. A CTF should start being transparent by including the methodology used for measuring and evaluating presented results into its reporting, which may include, if applicable, mentioning and describing the utilised baseline scenario. Proving before-and-after comparisons linked to interventions to some extent proves that stated results can be attributed to the CTFs work, thus the reported results gain meaningfulness. Moreover, if a CTF developed a theory of change or strategy including clearly set goals and objectives against which progress is measured, it should become a part of the trust fund's reports too. Indicating that the selection of supported activities follows an elaborate plan led by the trust funds overarching goal(s) adds to the institution's credibility. Once the basis, namely M&E methodology and theory of change, is set and made transparent, the results reporting needs to be as clear as possible. Compiling results is deemed indispensable to show the CTFs' overall impact, which is why it should be applied to a certain extent while making sure to not completely detach results from relevant context. Moreover, aggregated results should always be linked to a clear time frame reference. Results reporting should of course not be limited to aggregated numbers only, since presenting the results of individual activities and projects allows the trust funds to provide valuable in-depth information. However, when stating project-related as well as cumulated results, a clear distinction between the two levels is needed in order to avoid double counting. Also, when reporting on achievements of grantee organisations or projects which involve multiple donors, it is crucial to be clear and transparent about which results can in fact be attributed to the financial support of the CTF. If such a clear distinction is not possible, it is still the best option to be transparent, stating all achieved results while adding a note to put them into perspective.

To conclude, capturing the conservation impact of CTFs is a comprehensive task this research project contributed to by compiling lessons learnt from the conducted systematic review and interviews and presenting derived suggestions for improving the results MRE of CTFs.

5.2. Limitations of the research

There are some limitations of this research project, which need to be considered when interpreting the presented results.

The key limitation of this research project was data availability. The systematic review was based on the reports made publically available by CTFs, which were only 49.1 % of all operational CTFs worldwide. Moreover, it had to be assumed that the results covered by the CTFs' reporting correspond to their efforts carried out in M&E and all available information on CTFs' achievements was indeed published in the considered reports. These data constraints need to be considered when interpreting the systematic review's findings, especially in regards to the presented aggregated results CTFs had over ten years.

Another significant limitation relates to the systematic review and the already mentioned deviation from the C2 protocol by not involving more than one researcher into the review process. According to the protocol, two researchers should have been involved in multiple steps of the review, namely the screening of relevant reports for their eligibility according to inclusion and exclusion criteria (step four) and producing data extracts/results summaries (step five) (Petrosino, A., Boruch, R. F., Soydan, H., Duggan, L., & Sanchez-Meca, J., 2001). Comparing results summaries would have allowed checking whether all relevant information was spotted and retrieved, while also the exchange of opinions on ambiguities in the CTF reporting would have improved the quality and reliability of the review results.

The limited time scope of this research project is considered as another constraint, especially in regards to the scope of the systematic review. Having more time would have allowed critically questioning the information found in the trust funds' reports to a greater extent.

A methodological weakness relates to the analysis guideline which was used as a basis for screening the CTF reports was intentionally created as an adaptive format, being continuously updated to incorporate new insights. While this added to the suitability of the guideline and allowed making use of the learning process during the review, it also created inconsistencies. While e.g. the aspect of institutional strengthening was not considered at the beginning of the screening process, it was added to the guideline after recognising that it was repeatedly mentioned in CTFs' reporting. Hence, the first CTF reports screened might have contained relevant information on this aspect, which due to the guideline change was only considered for subsequent reports.

5.3. A way forward

The introduction of this thesis highlighted the governments' and (donor) organisations' need to know whether conservation mechanisms, like CTFs, create a measurable conservation impact in order to decide how to invest limited resources available for nature conservation (Baylis et al., 2016). While this

research project was able to present the aggregated conservation impact CTFs had over ten years, the stated results were significantly limited by the availability of data. Only approx. 50 % of the operational CTFs worldwide made their annual and evaluation reports publicly available, but also the variety of used indicators limited the possibility to compile results. Hence, the consideration came up whether it would be feasible to establish standardised results indicators to some extend applicable for all CTFs, which would allow harmonising the results MRE of the financial mechanism as a whole. One known initiative investigating the idea of indicator standardisation among CTFs came from the impact monitoring working group of RedLAC, short for Latin America and Caribbean Network of Environmental Funds. A manual dating back to 2012 presented an approach towards "Developing and Validating a System of Impact Indicators for Environmental Fund projects related to Biodiversity Conservation in Terrestrial and Marine Protected Areas" (Putney & Bath, 2012, p. 6) with the overall aim to align the impact measurement systems of projects financed by RedLAC members. The presented system suggested focussing on threat reduction indicators and impact indicators relating to the status of conservation targets. It furthermore proposed the calculation of a threat management index, compiling information for multiple supported PAs on the CTF level, even suggesting to calculate the same index for RedLAC, incorporating information from all member trust funds as well (Putney & Bath, 2012). However, the approach focussed on parks funds only and did not seem to find much application in practice. According to the author's knowledge, no further effort was made to revive the idea of standardised indicators.

On first sight it seems both simple and appealing to set up a list of standardised indicators, subsequently used by CTFs worldwide to monitor, report, and evaluate the results of their activities. However, several aspects need to be considered. First of all, CTFs operate in different countries, ecosystems, and contexts around the world, hence have different goals and objectives and support a huge range of projects and activities. Thus a "one size fits all" approach for setting up a CTF results MRE system would fall short by not considering the individual situation of each CTF. The described range of activities and projects would moreover make it difficult to determine common indicators to compare results. Furthermore, the conducted interviews with representatives of CTF donor organisations showed that set requirements for support vary and are often unique for each funding allocation. It is therefore considered unlikely that donors would agree to a list of standardised indicators.

A mix between standardisation and individuality in the CTFs' results MRE could possibly bring together the best of both worlds. While generally leaving the setup of the results MRE system and choice of indicators up to each CTF, the conservation community could agree on a few, meaningful indicators, which all trust funds would be required to report on as well. Project-specific results indicators could possibly be differentiated according to the kind of CTF (parks or grants fund), while basic indicators, mapping the scope of the institutions' activities, could be applied uniformly.

It is hence recommended for future research to further investigate how a minimum set of common indicators for CTFs could look like.

To conclude, the financial mechanism “CTF” encompasses an astonishing institutional variety, which secures the adaption on individual needs and local circumstances. However, the same variety makes setting up best practices, not only but also, for results MRE and the task of eventually aggregating the CTFs’ results a complex undertaking. Nevertheless, the field around CTFs seems to be on the move, working on solutions to fit these unique institutions and their challenges.

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Appendices

Appendix A: Steps of the systematic review

The following sequence indicates the steps of a systematic review as prescribed by the C2 protocol (Ministry of Foreign Affairs of the Netherlands, 2013; Petrosino, A., Boruch, R. F., Soydan, H., Duggan, L., & Sanchez-Meca, J., 2001).

1. **Formulate research question(s)**

2. **Determine inclusion and exclusion criteria**

    - Criteria related to evaluation subject
    - Criteria related to evaluation quality

3. **Search for potential studies**
    - Develop search strategy beforehand
    - Conduct search, can include a first screening of results

4. **Select studies according to inclusion and exclusion criteria**
    - **First selection process:** Potentially relevant reports get screened for their eligibility according to the criteria related to evaluation subject
        - Preferably, this is would be done by more than one researcher - In my case not possible
        - A full listing of excluded reports must be kept together with the reasons for their unsuitability
    - **Second selection process:** After selecting the relevant reports, the quality of these reports must be determined - Using criteria related to evaluation quality
        - This, too, should to be done by more than one person - In my case not possible
        - Results of selection process need to be registered in an Excel sheet, reports are classified according to the following groups: excellent quality, good quality, sufficient quality, insufficient quality (just an example, could be altered)

5. **Produce data extracts/summaries of results**
    - The resulting overview provides the set of information as source to address the research questions, and hence the key findings from the study

- At this stage, too, it is better for more than one person to be responsible for producing summaries. - In my case not possible

6. Analyse data and elaborate conclusions

- The final step is the interpretation of the results. At this point, researchers consider limitations, the strength of the evidence, applicability, statistical power, economic implications, and implications for further research.
- Consider issues like:
    - Limitations, including publication and related biases
    - Strength of evidence
    - Applicability
    - Statistical power

Appendix B: Guideline for the analysis of reports

Sequence followed when analysing reports and articles:

1. Start review of evaluation report(s) if existent, then going from the CTF's newest to oldest annual report

2. If existent, check the table of contents to identify sections which typically contain relevant information (i.e. summary of projects, progress, monitoring and evaluation etc.)
   Include checking the reports' appendices, often includes useful and detailed information on indicators used for M&E etc.

3. Start screening the report from the beginning onwards, paying particular attention when reading the beforehand relevant sections, and browsing rather quickly through less relevant parts of the report like opening letters, people behind the CTF, testimonials etc.
   Looking for relevant information (indicators and data on output, outcome and impact results) using the table below to categorise findings

4. Findings of each report are noted in the Excel sheet of the respective CTFs, specifying from which report/year the finding was retrieved from to ensure traceability

Structure to categorise findings:

Categories	Key aspects	Possibly used keywords and indicators	Findings from reports
Inputs			
Financial resources			
Funding from donor organisations and other sources	Starting point of trust fund capital when being established	Initial capitalisation when being established	

	Funding received from donor organisations; size of CTF	Funding received for endowment/sinking fund; grants received; other sources of funding received; total assets managed;	
Resources effectively going into PA management and/or nature conservation projects	Resources (generated through interest, grants or other sources of income) granted and subsequently disbursed for PA management and nature conservation projects	Amount approved/granted for PAs and/or projects; amount disbursed; Money invested into project development	
Partnerships			
Level of connectedness	Range and kind of partnerships across different sectors;	Partnerships with e.g. local banks or companies; number of this kind of alliances; financial or other kind of support (e.g. a credit card branded for the CTF etc.)	
Outputs			
Created and/or maintained PAs	Newly established PA(s)	Number of new PA establishments supported; hectares of newly protected area(s) created or expanded	
	Scope of efforts	Number of PAs supported; number of stewardship agreements; hectares covered by supported PAs, parks, reserves etc.	
	Maintaining PAs: Infrastructure & staff	Boundary demarcation; status of land tenure; staff resources; staffing; improving infrastructure	
	Maintaining PAs: Park surveillance and protection	Number of patrols conducted; number of man-days spend patrolling; number of people arrested; share of PAs/hectares covered by surveillance etc.	
Tools, plans and capacity building products for PA management (CTF and PA staff)	Courses, trainings, seminars conducted for employees (PA & CTF)	Number of people trained; number training workshops held; number of training days conducted	
	Tools, material for capacity building	Training/workshop produced; developed tool(s)	

	Development of conservation management plans to increase management efficiency	Existence of a management plans for PAs; revision, periodic review of management plans; creating, reviewing species action plans	
Direct results, products and services of conservation actions financed	Scope of efforts	Number of conservation programmes/projects initiated; Number of beneficiaries of nature conservation and sustainable development programmes	
	Restoring nature and land use management	Planting trees; removing invasive species; developing land-use plans	
	Creating employment and supporting local, sustainable businesses	Direct employment related to site management (including patrols, research and monitoring); number of businesses created or supported; investments into permanent infrastructure to benefit local businesses, farmers etc.; encouraging eco-tourism	
	Institutional strengthening (supporting implementing organisations, government, science etc.)	Workshops for government officials, CBO, grantees; networking events; partnerships created; sharing expertise	
	Improving education of local population (also but not only environmental education)	Education programmes conducted; numbers of lectures and debates; schools involved	
	Increasing awareness and communications	Environmental awareness programmes/campaigns; number of lectures and debates held; improving awareness for work of CTF; CTFs communication	
	Improving local infrastructure	Building hospitals, schools, roads, radio stations etc.	

	Benefitting local community	Providing health services; donations; indigenous support; medical support	
	Keeping and improving the relationship between CTF and local community, stakeholders, institutions etc.	Stakeholder meetings; support by local community; conflict resolving mechanisms; number of active volunteers; size of CTF community	
	Conducting research and M&E activities	Addressing socio-economic research needs and biodiversity research needs; Ecological monitoring installed at x sites, number of studies conducted	
Standards and policies to support conservation	Advocacy: Improving existing systems, standards and or policies	Influencing policy relevant to conservation, climate change and sustainable development; influencing/promoting national biodiversity plans, mechanisms for biodiversity offsets, environmental taxes etc.; lobbying efforts	
	Supporting global initiatives on standard-setting etc. for CTFs	Being involved in Conservation Measures Partnership (CMP); CTFs networks etc.	
Outcomes			
Status of the conservation targets	Biological indicators covering environmental service preservation, ecosystem integrity and habitat quality	Species with improved management; Protected sites are home ranges of x species classified as threatened by the IUCN; coral reef health; hectares of land afforested/reforested	

Threat reduction			
Decrease of internal direct threats	Margoluis and Salafsky (2001): "Factors that have a direct impact on biodiversity and are caused by the stakeholders living at the project site" (p. 9)	Decrease in hunting of animals, cattle grazing, agriculture, aquaculture activities in PA or buffer zone; transformation towards sustainable practices, land-use transformation; reduced human wildlife conflict; average annual deforestation rate in a PA/buffer zone/outside PA	
Decrease of external direct threats	Margoluis and Salafsky (2001): "Factors that have a direct impact on biodiversity and are caused by outsiders"(p. 9)	Decrease in e.g. corporate logging or mining activities in PA or buffer zone; reduced reliance on single industries in target region	
Decrease of indirect threats	Margoluis and Salafsky (2001): "Social, political, and economic factors that induce changes in the direct threats" (p. 9)	Improved well-being of local population measured through e.g. reduced poverty rate/unemployment rate; current political agenda increases efforts in combatting biodiversity reduction, climate change etc. measured through passed legislation	
Effects of the outputs	Support of natural resource-based/sustainable industries (fisheries, agriculture, forestry and tourism etc.)	Revenue in natural resource-based, sustainable industries; Number of jobs in natural resource-based industries created; Number of people with alternative income generating livelihood as a consequence of training sessions (training = output, jobs resulting from training = outcome);	
	Leaning processes enabled	New scientific findings; increased public awareness for ecosystem values	
	Strengthened regulations	Passed legislation in favour of biodiversity protection etc.	
	Strengthened governance of natural resources and protected areas	Increased effectiveness of PA management, possibly measured through METT tool or other tools	

	Innovations in CTF/conservation practice	Innovative framework(s), tool-kit developed; approach replicated in x other projects/trust funds	
Impacts			
Effects expressed in contribution to agreements like the Sustainable Development Goals, Aichi Targets etc.	Firstly, contribution to international/national agreements mentioned?	Yes/no/and if so, is the contribution further described, quantitatively or qualitatively; depending on agreement: contribution related to e.g. goal or target level (example of SDGs)?	
	Carbon sequestration	Sequestered tons of carbon/CO2; sequestered tons of carbon per hectare;	
	Safeguarding biodiversity	Number of species not endangered anymore; number of threatened species with stable or increasing population; change of status in IUCN listing of a species etc.	
	Protected water sources	Preserving fresh water flows; volume of fresh water delivered downstream	
	Promote sustained, inclusive and sustainable economic growth	Example taken from SDG 8: "Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services" (United Nations, n.d.a)	
Quality of results MRE			
Theory of change	CTF's work/progress is evaluated against a **theory of change** with set goals and objectives	At least one report mentions or presents visualisation of: theory of change, logical framework, strategy/strategic plan with goals and objectives against which process is measured	

Additionality of results	CTF proves to some extent additionality of presented results	At least one report mentions conducted counterfactual analysis or collected baseline data and if baseline data mentioned, is it further described, are presented results compared to baseline scenario etc.	

Appendix C: References to annual and evaluation reports included in the systematic review

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