

GUIDE FOR FUNDERS TO ASSESS AND VALUE IMPACT

A guide for impact investors and philanthropists to assess and value the expected impact of organisations and/or projects.

Version 1.0

impactinstitute.com



About Impact Institute

Vision

One of the greatest opportunities of the 21st century is the realisation of the impact economy: an economy in which work, entrepreneurship, innovation, and technology engender a better world. To achieve this requires a global system shift that retains valuable components of the old market system while embracing new economic models. In turn, the shift to the impact economy necessitates a common language for impact that is integrated into every aspect of our economy.

Mission

Our mission at the Impact Institute is to empower organisations and individuals to realise the impact economy. We do this by creating a common language for impact through the publication of open source standards and by providing the tools, training, and services to implement those standards.

More information can be found here: www.impactinstitute.com.



The text in this document is licensed under a Creative Commons Attribution-ShareAlike 2.0 Generic. For more information consult [Attribution-ShareAlike CC BY-SA 2.0](https://creativecommons.org/licenses/by-sa/2.0/). Available at: <https://creativecommons.org/licenses/by-sa/2.0/>

Cover photo by Sasin Tipchai

Authors: Emmanouela Varoucha, Megan Roux, Reinier de Adelhart Toorop and Adrian de Groot Ruiz

Corresponding author: Emmanouela Varoucha (Associate; emmanouela@impactinstitute.com)

Cite as: Impact Institute, 2020: *Guide for Funders to Assess and Value Impact*. [Authors: Varoucha et al.]. Amsterdam.

Acknowledgements:

This publication would not have been possible without the financial and intellectual support of the consortium of impact investors and philanthropists consisting of ACEE BV Investments (Nancy de Ruiter), PCG Investments / Jazi Foundation (Robert Boogaard), 2050 Capital / 2050 Foundation (Martijn Kaag) and Kellie Liket.

In addition, we would like to thank Jennifer Kuiper for the research behind and contributions to the writing of Appendix C (Needs assessment, landscape mapping and gap assessment) as well as for her advice on the overall research design.

Finally, we would like to acknowledge the following reviewers:

- Robert Zochowski III (Impact-Weighted Accounts at Harvard Business School)
- Michiel Lenstra (Wire Group)
- Luka Skorochod (Skopos Impact fund, Anthos Fund & Asset Management)
- Julian Koelbel (University of Zurich, Center for Sustainable Finance and Private Wealth)
- Liang Hao (Singapore Management University)



Foreword

When I entered the world of impact investing a couple of years ago, I expected a space where financial "quants" were pursuing impact metrics with the same rigor they were pursuing financial returns. These expectations contrasted sharply with reality. I found that many impact investors treat "impact" as a quality that is evaluated through instinct and emotion alone. Even if attempts are made for quantification, comparison of impact between different investment opportunities is often difficult or impossible, especially if those opportunities are targeting different types of impact. More importantly, comparisons between impact investing opportunities and philanthropic interventions are often settled through general arguments ("philanthropy doesn't work!"), because comparisons on a case-by-case basis are impossible using existing frameworks.

This status quo worries me. The challenges our world is facing are vast, and the funds allocated to tackle these challenges are very limited in comparison. Given these scarce resources, we cannot afford to make suboptimal decisions. We should aim to maximise the impact of our funds if we want to have a chance of solving some of the most pressing issues in time. Settling for "some impact" just isn't good enough.

Maximising our impact requires that we pick the most impactful interventions. Also, we should be able to look at total impact over time on *a portfolio level*: philanthropy may have a higher impact today, but the returns from (impact) investment may be used to generate impact (again) after the investment period. Although existing frameworks can be suitable for comparing similar projects within a specific cause area, they often fail to express impact in a language that enables comparison over time between (impact) investments, philanthropic interventions and other (traditional) assets. I believe that this common language is of fundamental importance to solving the most pressing issues of our time with the scarce resources at our disposal.

Together with like-minded impact investors and philanthropists, we set out on a journey to contribute to solving this challenge. We were lucky to be able to onboard Impact Institute as an advisor, and we supported the development of this Guide, because it provides the language and understanding required to express impact over various asset categories.

This Guide provides a way for investors and philanthropists to study the direct and indirect effects of an organisation they have in mind as a potential investment or grant receiver. It provides support on both quantifying and valuing impacts. This means that the impact on people and the planet can be valued in a common (monetary) unit. Using this approach, organisations which work to limit CO₂ emissions and those that focus on fair labour conditions, for example, can be compared more objectively. The instructions in this Guide are supplemented with a working example. This Guide demonstrates how impact forecast and evaluation works for Rosie's Roses. In this way, the Guide provides concrete guidance towards an estimate of the impact of the organisation and towards making sound impact-based investments or philanthropic decisions.

This Guide builds upon an extensive body of existing literature and many expert consultation sessions held during the writing process. Impact assessment is an evolving field, and there is still much work to be done to apply impact assessment to investments. This Guide is therefore certainly not the final word on the topic. It does, however, offer a concrete next step towards harnessing the considerable power of impact investors and philanthropists to create positive change.



Working with Impact Institute on this Guide has been a very rewarding experience. Their openness to heated debate and their passion to apply quantitative rigor to do good has been an inspiration to me personally. The depth of their knowledge is impressive, and their objective review of existing approaches is a very valuable deliverable in itself. This Guide written by Impact Institute is much more than we asked or hoped for, and it provides the required language to express and compare impact.

Our journey does not end here though. This Guide is a first version, and input from academics and practitioners is required to further improve the approach. Moreover, trained advisors and software solutions are necessary to make execution of an impact assessment more palatable for the practitioners. In time, the cost and effort required for an impact assessment should go down to a level that allows it to become common practice for (impact) investors and philanthropists. We are not there yet, but I feel grateful that Impact Institute has guided us in the right direction.

Amsterdam, August 6, 2020

Martijn Kaag

2050 Capital / 2050 Foundation

Also on behalf of

Dr. Kellie Liket

Dr. Nancy de Ruiter

ACEE BV Investments

Robert Boogaard

PCG Investments / Jazi Foundation



List of abbreviations

DALY	Disability-Adjusted Life Year
EA	Effective Altruism
EPA	United States Environmental Protection Agency
ESG	Environmental, Social and Governmental Criteria
EVPA	European Venture Philanthropy Association
FAO	Food and Agriculture Organisation
FCF	Financial cash-flows
FIS	Framework for Impact Statements
GHG Protocol	Greenhouse Gas Protocol
GIIN	Global Impact Investing Network
GIIRS	Global Impact Investing Ratings System
GLWC	Global Living Wage Coalition
GRI	Global Reporting Initiative
IAM	Integrated Profit & Loss Assessment Methodology
IASB	International Accounting Standards Board
IEA	International Energy Agency
IFRS	International Financial Reporting Standards
IGP	Impact Genome Project
IIRC	International Integrated Reporting Council
ILG	Investors Leaders Group
ILO	International Labour Organisation
IMF	International Monetary Fund
IMM	Impact Multiple of Money



IMP	Impact Management Project
IRIS	Impact Reporting and Investment Standards
IRR	Internal Rate of Return
LCA	Life-cycle assessment
NCC	Natural Capital Coalition
NCP	Natural Capital Protocol
NCVO	The National Council for Voluntary Organisations
NFI	Non-financial information
NPC	New Philanthropy Capital
NPV	Net Present Value
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
PRIL	Principles of responsible investing
PwC	PricewaterhouseCoopers
QALY	Quality-Adjusted Life Year
RIVM	Rijksinstituut voor Volksgezondheid en Milieu 'National Institute for Public Health and the Environment in the Netherlands'
SDGs	Sustainable Development Goals
SIMM	Social Impact Measurement Model
SROI	Social Return on Investment
TCFD	Task Force on Climate-related Financial Disclosures
TEEB	The Economics of Ecosystems and Biodiversity
TIMM	Total Impact Measurement & Management
ToC	Theory of Change



True NPV	True Net Present Value
UNEP	United Nations Environment Programme
UNHR	United Nations High Commissioner for Refugees
WBCSD	World Business Council for Sustainable Development
WHO	World Health Organisation
WICI	World Intellectual Capital/Assets Initiative
WWF	World Wildlife Fund



Table of Contents

Foreword.....	iii
List of abbreviations.....	v
Table of Contents.....	viii
Part I: Introduction.....	1
1. Introduction - Guide for Funders to Assess and Value Impact.....	3
1.1 Rationale and motivation.....	3
1.2 The Guide's added value.....	4
1.3 Summary of guidance stages and steps and their key results.....	6
1.4 Roadmap of this document.....	7
2. Impact.....	8
3. About the Guide.....	9
3.1 Scope.....	9
3.2 Who should use this Guide?.....	10
3.3 Reader's guide.....	10
Part II: Guidance.....	11
4. Introduction to the Guidance.....	13
4.1 Stages of an impact forecast assessment.....	13
4.2 Key decisions required at each step.....	15
4.3 Application principles.....	16
4.4 Introducing the case study.....	17
5. Stage 1: Scoping.....	18
5.1 Step 1: Identify.....	18
5.2 Step 2: Select the impacts.....	32
6. Stage 2: Assessment and valuation.....	37
6.1 Step 3: Conduct a financial analysis.....	38
6.2 Step 4: Establish impact pathways.....	41
6.3 Step 5: Assess future impact.....	48
6.4 Step 6: Value impact.....	60
6.5 Step 7: Aggregate impact.....	63
6.6 Step 8: Assess sensitivity and uncertainty.....	66
7. Stage 3: Application stage: Reporting.....	71



7.1	Step 9: Interpret and validate results.....	71
7.2	Step 10: Report results	74
8.	Concluding remarks.....	76
	Bibliography	77
	Glossary	84
	Appendix A: List of key impacts.....	87
	Appendix B: Overview of reliable data sources	93
	Appendix C: Needs assessment, landscape mapping and gap assessment	98
	Needs assessment.....	98
	Landscape mapping.....	99
	Gap assessment.....	105
	Appendix D: Additional background and technical information.....	108
	Key references.....	108
	Impact	110
	Types of impact.....	114
	Impact valuation and its techniques.....	118
	Key assumptions, limitations and uncertainty factors.....	124
	Appendix E: Additional guidance on Rosie’s Roses II	128



Part I: Introduction

Part I: Introduction

The aim of this section is to introduce the rationale and motivation behind the Guide, as well its main elements (such as the concept of *impact*) and the scope and applicability of the document.

This section provides the justification for the creation of the Guide, before explaining the concept of impact. It concludes with an overview of the Guide's scope and audience and gives directions to help readers navigate it.



1. Introduction - Guide for Funders to Assess and Value Impact

1.1 Rationale and motivation

Through their investments and grants, impact investors and philanthropists aim to create a positive impact and ultimately make the world a better place: for impact investors, this goes hand-in-hand with seeking a reasonable financial return on their investment—either to fulfil commercial or private needs, or so they can fund further impactful initiatives; for philanthropists, the only goal is to create impact. In addition to financial considerations, an impact investment may be preferable to a grant in cases when a business model is a more effective intervention than a non-profit model.

A key question for all impact investors and philanthropists is which organisations or initiatives can they best allocate their funds to. Making informed decisions requires comparable information about the expected future impact of the potential funding opportunities. This information enables them to assess how much positive impact an opportunity is expected to have and whether the chances of that happening are realistic. In addition, it helps them determine how the expected future impact compares to that of alternative funding opportunities.

As revealed by a literature review, there are several challenges with regards to assessing impact. Firstly, there is a dearth of information on expected future impact (WBCSD, 2018). Secondly, existing information, even when available, is often contradictory and troublesome to interpret as there is a lack of clarity on the definitions of impact and sustainability (OECD, 2018). Thirdly, there is no universally accepted method to quantify social returns on investments similar to that for financial returns on conventional investments (Addy, Chorenge, Collins, & Etzel, 2019). An extensive overview of the literature review is presented in Appendix C.

This means that funders currently lack reliable, relevant, comparable and consistent *impact information* on the opportunities they fund or are considering funding (the term ‘impact information’ refers to estimates and metrics of impact, valued or non-valued). As a result, the selection of funding opportunities is mostly based on heuristics or guesswork. Without the right impact information, the answers that impact investors and philanthropists arrive at may not reflect the *actual* impact of funding opportunities, which could potentially lead to a sub-optimal allocation of their funds. Given that the differences between opportunities can be large, assessing future impact rigorously becomes of high importance.

Therefore, the question that arises is, *how can funders overcome these challenges and rigorously assess future impact?*

This *Guide for funders to assess and value impact* responds to the abovementioned needs of impact investors and philanthropists, and the related challenges that they face, by providing a foundation for rigorous assessment of expected future impact. It aims to contribute to the creation of reliable, relevant, consistent and comparable impact information at an acceptable cost, and does so by offering funders an open source method to assess and value impact, together with a foundation of relevant concepts and techniques. Funders can thus gain a better understanding of the various types of impact and receive guidance on how to establish a reliable basis about the size and value of various types of impact.



Note that in this context, it is up to the investment team (guided by the principle of proportionality) to determine what research expense is acceptable: in principle, the time and effort spent on assessing a potential opportunity should be in proportion to the expected gain in impact (see Application principles in Part II).

In addition, the Guide aims to provide a comprehensive overview of the existing knowledge available to funders for assessing and valuing impact of funding opportunities. It does this through an extensive literature review, as well as interviews with experts, leading to three main outcomes: an overview of the needs of impact investors and philanthropists when it comes to making informed funding decisions; an overview of the existing landscape of associated frameworks and initiatives; and an analysis of the gaps related to open source methodologies.

1.2 The Guide's added value

The Guide enables funders to obtain crucial information on the expected future impact of potential funding opportunities—i.e. the total impact of a funding opportunity, except for the contribution of the investor. In this way, the Guide provides concrete guidance on creating and interpreting impact information that can serve as input for funders' decision-making processes.

Funders looking for more fact-based funding decisions will still have various decision-making processes and needs as to how to process and use impact information. This Guide also caters for such needs: assessing and quantifying impact will be germane to all of them, and valuing impact will be applicable to a substantial number of them.

At the same time, the Guide contributes to existing knowledge by building on and extending existing frameworks and initiatives for assessing and valuing the impact of impact investments and grants. Based on an extensive analysis that we conducted on a selection of existing frameworks and initiatives (see Appendix C), we identified the following main gaps in the existing landscape: (i) theoretical foundations; (ii) practical guidance for impact investors and philanthropists; (iii) quantitative impact assessments applicable to non-profits and enterprises, and which are mainly forward-looking; (iv) impact valuation; (v) impact aggregation; (vi) impact reporting; (vii) impact steering. The Guide focuses on the first four topics.

The Guide follows an impact valuation approach formalising explicit normative preferences and employs impact monetisation. Impact valuation refers to expressing impact results in a way that makes their (positive or negative) impact to society explicit. Various existing frameworks also employ some form of impact valuation.¹ It is worth mentioning here that as a valuation technique, there are both benefits and challenges linked to monetisation: it helps to make all impacts comparable (with each other but also with other traditional financial metrics), and provides a common language for steering and communication that funders can base their decisions on; however, it also requires gathering data and making assumptions and the extent that several impacts can or should be monetised can be debated, especially when it comes to impacts linked to human rights. Furthermore, monetisation might also be seen as leading to the commodification of nature. Nevertheless, though not perfect, the authors of the Guide regard monetisation as the best tool for making impact information comparable and actionable, thereby facilitating decisions that optimise impact.²

¹ For more information on impact valuation and the concept of monetisation and how it is applied in this Guide, see Impact valuation and its techniques in Appendix D.

² For a discussion on the merits and drawbacks of monetisation, see Appendix D.



The Guide also provides a more rigorous distinction between various types of impact (marginal vs absolute, direct vs indirect) and a more rigorous specification of the reference scenario than existing frameworks do.³ Getting these aspects right may require some technical knowledge but it is key to obtaining consistent and comparable information. In addition, we have aimed to provide a straightforward but rigorous step-by-step manual for assessing and valuing the expected future impact of potential funding opportunities: we did not find that this had been fully developed in the existing literature.

The Guide lays out ‘how-to’ instructions on how to independently assess and value impact, complemented by practical examples. In addition, it includes a full illustrative example on how to apply the Guide, using a hypothetical yet realistic case study of a company similar to those that many impact investors would consider investing in. Throughout the various steps, the relevant considerations that must be born in mind are provided. This Guide is also among the first that enables the analysis of both investments and grants.

Following the steps described in the Guide will provide tangible and actionable results about the assessed funding opportunity. The results are well-defined monetised metrics that express the impact that the organisation or project is expected to have. To accommodate funders’ distinct needs, various aggregation options are available and, therefore, different metrics can be obtained. This ensures that the various types of impact obtained can be aggregated to metrics that are easy to compare and act upon.

Figure 1 shows an example of how the resulting metrics of an analysis of the expected future impact of a funding opportunity might look.

Well-defined metrics, such as the direct marginal impact,⁴ can be obtained over multiple years, comparable to the financial cash flow that is typically used by more traditional investors. Funders can use these metrics to gain insights into the expected future impact of an opportunity, as well as compare it to other potential ones, thereby facilitating well-informed funding decisions.

³ For a comparative analysis of the similarities and differences between the approach taken in this Guide and that of existing frameworks, see Appendix D.

⁴ (Direct) marginal impact shows the degree to which the organisation in scope produces differently to its alternatives. A positive value means that a more positive impact is made, or a less negative impact occurs. For a more complete explanation of concepts such as direct marginal impact, see Appendix D.



Direct marginal impact on society of the organisation /project (in thousand EUR) - Survival rate: 98%, NPV is calculated with an 3% real discount rate.

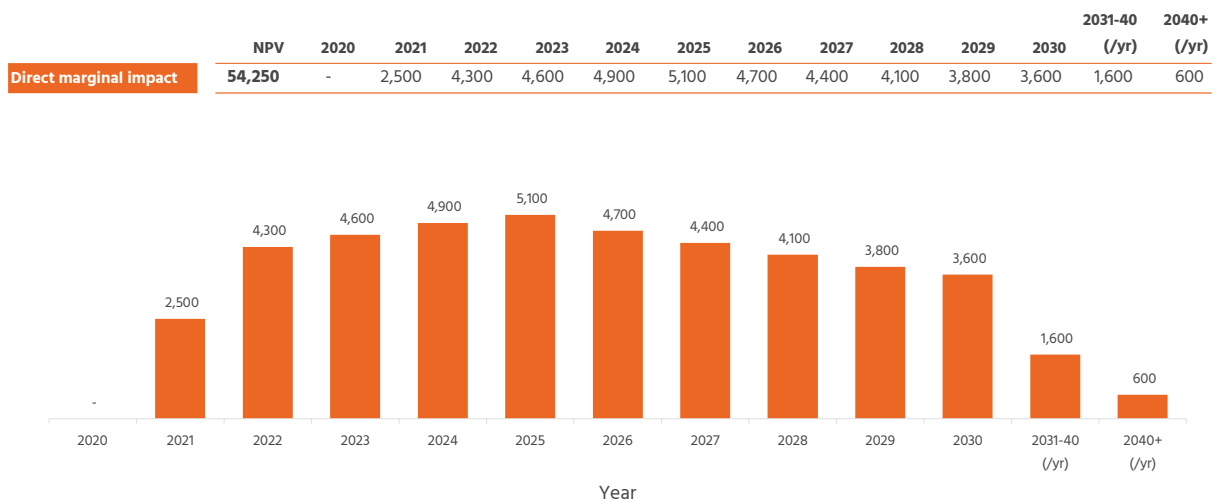


Figure 1: Example of metrics that can be obtained by applying the Guide.

1.3 Summary of guidance stages and steps and their key results

The guidance provided in the Guide follows three main stages, the completion of which enables users to obtain concrete impact information, or metrics, on the expected future impact of a funding opportunity.

These three stages are: the scoping stage, the assessment and valuation stage and the application stage. Each stage comprises several steps. An overview of the steps, together with their key results, is presented in Figure 2. Note that as the scope of this Guide is to provide guidance on assessing and not managing impact, the application stage is limited to reporting.

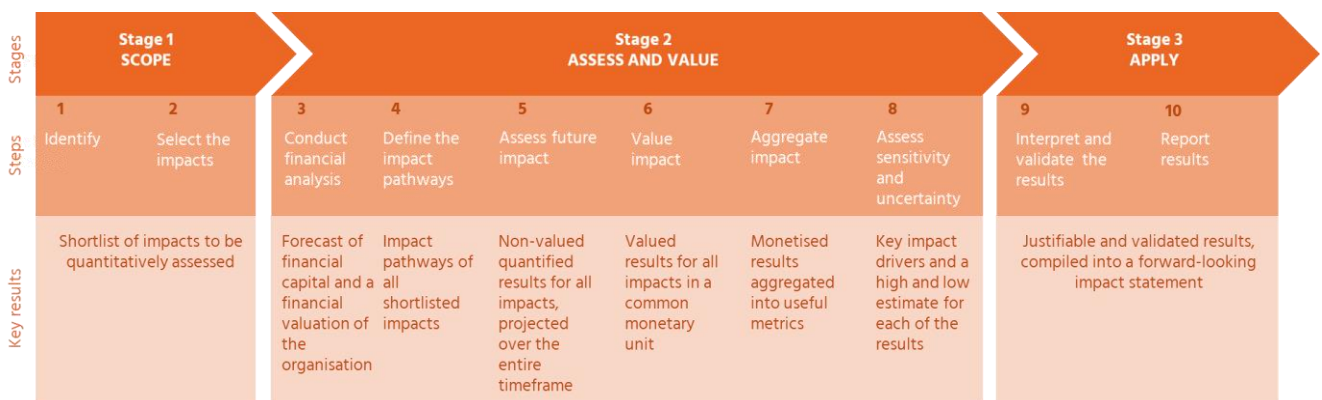


Figure 2: Overview of guidance stages and steps and their key results.⁵

⁵ The stages and steps in this figure are adapted from the Framework for Impact Statements (Impact Institute, 2019).



1.4 Roadmap of this document

The main body of the Guide consists of two parts comprising six chapters. Part I gives an overview of the Guide, while Part II provides guidance on assessing and valuing expected future impact.

Part I comprises Chapters 1–3:

- Chapter 1 discusses the rationale and motivation for the Guide and its added value, and describes the guidance contained in it.
- Chapter 2 introduces and explains the concept of impact.
- Chapter 3 outlines important elements of the Guide, including the scope, target audience and the contents and main terminology used.

Part II comprises Chapters 4–7, which contain all procedural and content guidance on performing a forward-looking impact assessment.

- Chapter 4 introduces the guidance section and outlines the phases of the assessment
- Chapter 5 outlines the scope phase of an impact assessment.
- Chapter 6 focuses on the assessment and valuation phase.
- Chapter 7 discusses the application phase, with a specific focus on reporting.

Five appendices provide additional detailed information to complement the main Guide.

- Appendix A provides a list of key impacts.
- Appendix B contains an overview of reliable data sources that can be useful throughout the process of assessing and valuing impact.
- Appendix C presents a comprehensive literature review, including a needs assessment, landscape mapping and gap analysis.
- Appendix D includes additional background and technical information.
- Appendix E provides additional guidance, complementary to Part II of the Guide.



2. Impact

In this Guide, the concept of ‘impact’ is central. As mentioned, impact investors and philanthropists are specifically eager to create positive impact. Although many practitioners have an intuitive understanding of impact, what it is exactly remains somewhat elusive. The lack of a clear definition makes it difficult to determine what is meant by ‘impact’ and by ‘impact investments’. In this regard, the OECD (2019) notes the following:

While public and private investors engaging in this activity agree that financial and sustainable development returns can go hand-in-hand – and can often strengthen the sustainability of the investment – the challenge lies in defining impact. (p.7)

To provide clarity on the concept and how it is applied in this Guide, a definition of impact is provided below.

Impact can be understood intuitively as “the difference one makes in the world by having an effect on the things valued in society.”

An analysis of this intuitive formulation reveals three key elements:

1. Impact is about the *effects* and not the *intentions* of the actions of an individual or organisation.
2. Impact is about effects on things that matter.

From an impact perspective, an effect is only relevant if it affects something of value, such as health, reduced suffering or freedom, whether directly or indirectly. This also means impact necessarily has a subjective component, as people in society can value these things differently.

3. Impact is about making a difference.

This means that the question of *what would have happened* had an activity not taken place (or had an organisation not have been active) becomes central. This introduces the necessity for counterfactual (‘what if’) thinking.

Based on these elements, impact can be defined generically as a change in a valuable and measurable outcome with respect to a reference scenario, during a given timeframe. It can be positive or negative, intended or unintended.

A fundamental component of impact is the ‘reference scenario’: impact represents a ‘difference-in-difference’—a comparison of the difference between a valuable in the actual scenario against the difference in a valuable in the reference scenario during a given timeframe.

This definition is in line with the common understanding of practitioners in the field. See, for example, Impact Management Project’s definition of impact as “a change in an outcome caused by an organisation. An impact can be positive or negative, intended or unintended.” (IMP, n.d.b).

For a more technical definition of impact, an explanation of why focusing on impact is relevant for impact investors and philanthropists, and an introduction of different types of impact, as well as a discussion on why these can be relevant in decision-making, see Appendix D.



3. About the Guide

3.1 Scope

In line with the rationale as presented above, the goal of the Guide is to contribute to the creation of reliable, relevant, consistent and comparable impact information at acceptable cost, through a freely available methodology to assess and value the expected future impact of funding opportunities. In particular, it provides procedural and content guidance to impact investors and philanthropists on how to identify, quantitatively assess, value and monetise expected future impact. It also provides guidance on (informal) reporting of impact. Impacts on all types of Capital (Natural, Human, etc.) and various types of stakeholders (employees, society-at-large, etc.) are in scope.

The Guide focuses on expected future impact and therefore, on a forward-looking type of assessment. Assessing realised impact (backward-looking assessment), as well as monitoring and evaluating impact, is beyond its scope, as is guidance on aggregating impact, formal internal and external reporting on impact, and managing impact.

The Guide also does not provide prescriptive guidance on issues for which there is still methodological uncertainty, for example, funder impact and ‘investor additionality’ (see below). Funder impact—i.e. the impact that the investor or philanthropist makes through their investment or grant—is of relevance when taking funding decisions, as it provides additional information on the impact of the investment or grant. IMP specifies the following about the impact of an investment:

An investment’s impact is a function of:

1. The impact of the underlying asset(s)/enterprise(s) that the investment supports (the x-axis), plus
2. The contribution that the investor makes to enable the enterprise(s) (or intermediary investment manager) to achieve that impact (the y-axis). (IMP, 2018)

The first part of the impact, what IMP calls the ‘x-axis’, is precisely what this Guide provides guidance on. The second part, what IMP calls the ‘y-axis’, falls under funder impact.

Funder impact is complex and consists of various parts. It includes, for example, the notion of ‘investor additionality’ or, simply put, an investor’s contribution to the impact of an organisation. This implies, therefore, that funding only has an impact if it changes an organisation’s outputs in a way that would otherwise not have happened (So & Staskevicius, 2015). Funder impact, including investor additionality, is beyond the scope of the Guide as it is not sufficiently well understood at present.⁶

⁶ A useful resource on the contribution of investors is the Guide to Classifying the Impact of an Investment, published by IMP (IMP, 2018), which identifies four possible investment strategies, often used in combination, for an investor to contribute to the impact made by an enterprise: signaling that impact matters, engaging actively, growing new or undersupplied capital markets, and providing flexible capital.



3.2 Who should use this Guide?

The Guide is written mainly for impact investors, philanthropists, and their advisors. There are several envisioned users who will apply the guidance included in Part II to perform an impact assessment, including external parties, the investment team or even the potential investee organisation, or a combination of these.

The method outlined in the Guide is applicable to small and medium-sized mission-driven organisations, such as social enterprises, non-profits and their projects. In its current form, the Guide is not directly applicable to corporations or public equities, although with the necessary adaptations it could be made applicable to such organisations as well. The same applies to impact investing funds.

It is worth mentioning too that, while this Guide is directed specifically at funders and philanthropists, academics and professionals in the policy field may also find it a useful tool for assessing and valuing impact.

It must be noted that while the Guide provides key guidance on how to perform a forward-looking impact assessment of impact investments and grants, it should not be used in isolation: the right data, tools and competencies are also necessary for users to perform impact assessments independently.

As with any kind of analysis, the quality of impact assessments grows with the experience of the user. To perform an impact assessment, the user should, as a rule, be able to perform financial projections for the organisation in question. Projecting impact has all the key challenges that financial projections have (conflicting sources, the complexity of projecting markets, discussion on discount rates, etc.), as well as some additional ones (such as the need to analyse the value chain of enterprises and the need for monetisation factors). The Guide discusses these latter challenges, while assuming the user has most of the former as pre-existing knowledge.

3.3 Reader's guide

For the sake of brevity, the Guide uses various terms or words to denote the following:

- 'Expected impact' refers to *expected future impact*.
- 'Organisation' refers to any type of enterprise or organisation, including small to medium-sized (social) enterprises, non-profits or projects that impact investors and philanthropists finance.
- 'Funder' refers to impact investors and philanthropists, while 'funds' refer to the money that they invest in, or give to, investees and beneficiaries.
- 'User' refers to any person or entity that makes use of the guidance provided in this document to perform a forward-looking impact assessment.

Some of the principles and definitions have been taken and/or adapted from the Framework for Impact Statements (Impact Institute, 2019) and the Integrated Profit and Loss Assessment Methodology (IAM) (Impact Institute, 2020), but the Guide can be read and understood as a standalone document.

Throughout the document, definitions of key terms and concepts are provided in blue text and are preceded by the word Glossary. A definition is provided when a term or concept is first introduced. A complete Glossary is provided at the end of the document. Part II also contains multiple 'key considerations', which are highlighted in orange, as well as illustrative examples, which are presented in light grey boxes.



Part II: **Guidance**

Part II: Guidance

This section provides guidance on how to assess and value the expected impact of an organisation or project successfully.

In general, there are four stages that should be followed in the process of performing an impact assessment. In practice, these stages need not be followed in the same detail in every impact assessment performed and the process can be more iterative than described below.

The result of these stages will be a set of monetised metrics that represent the expected impact of an organisation or project. These metrics can be used to make sound impact-driven funding decisions.



4. Introduction to the Guidance

4.1 Stages of an impact forecast assessment

The four stages of performing an impact forecast assessment are adapted from the Framework for Impact Statements (FIS)⁷ (Impact Institute, 2019), that was in turn inspired by the Natural Capital Protocol (NCC, 2016). See Table 1 and Appendix D.

Table 1: The stages of an impact forecast assessment.

Stages of an impact forecast assessment	Description of the stage	Included in this Guide
Frame	Initiates the assessment of an organisation’s impact	Not included
Scope	Entails defining the scope of the assessment and selecting impacts	Included
Assess and value	Includes defining the impact pathways; assessing and valuing the impacts; performing a sensitivity analysis on the results	Included
Apply	Consists of interpreting, verifying and reporting the results	Included

The ‘frame stage’ is not included in this Guide. During the frame stage, the user identifies the goal of the assessment and thereafter chooses the type of assessment that will be completed. The goal is to provide guidance on performing an impact forecast assessment and so it is assumed that the user has already made the decision to pursue this sort of assessment. Each chapter in this section focuses on one of the other three stages and includes the aim and importance of the respective stage, a description of it and the steps that should be taken to successfully complete it. A summary of the stages and steps in this assessment is provided in Figure 3.

Glossary

Impact assessment and valuation is the process of quantitatively assessing, valuing, and attributing impact to understand the impact of an organisation’s activities.

Impact assessment is a process that can refer both to backward-looking impact measurement and forward-looking impact forecasting.

⁷ The FIS is a set of guiding principles for the backward-looking measurement of impact. This Guide follows many of the same stages as the FIS but while the FIS measures impact that has already occurred, this Guide focuses on forecasting future impact.



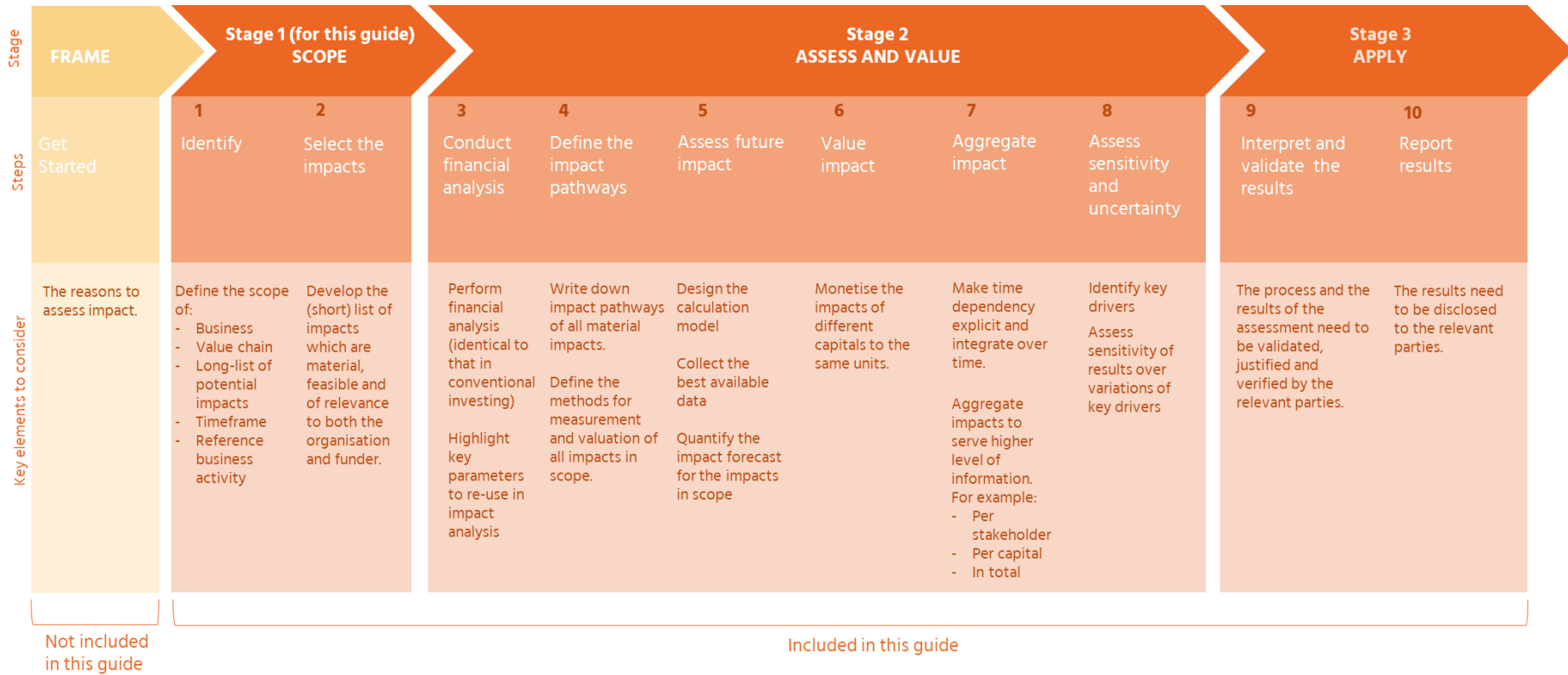


Figure 3: Stages of an impact forecast assessment. Blocks coloured yellow are not covered in this Guide.



4.2 Key decisions required at each step

In all the stages and steps of this Guide, the user will be confronted with decisions that need to be made. These include decisions such as which impacts to assess or what time horizon to consider. The following table describes the key decisions the user will need to make in each step.

Table 2: Key decisions required at each step.

Stage	Steps	Key decisions
Scope	1. Identify	<ul style="list-style-type: none"> - The scope of the assessment (e.g. specification of business activities) - The marginal reference scenario (the most likely counterfactual scenario(s), if the organisation were not to exist) to use for analysis and how many marginal reference scenarios to consider
Scope	2. Select the impacts	<ul style="list-style-type: none"> - Impacts to include in the assessment
Assess and value	3. Conduct financial analysis	<p>All decisions related to a 'conventional' financial forecast, in particular</p> <ul style="list-style-type: none"> - Time horizon - Financial discount rate - Survival rate - Terminal growth rate
Assess and value	4. Establish impact pathways	<ul style="list-style-type: none"> - Establish which potential causal pathways to consider - Establish which causal pathways are sufficiently material to quantify
Assess and value	5. Assess future impact	<ul style="list-style-type: none"> - How to quantify the impact - Calculation tool to use - If multiple marginal reference scenarios are used, which ratio to use to average them - Use of extended input–output databases to measure average sector impact, specifically relevant in the context of the impact of suppliers - Various case-specific assumptions - What data to include if there are multiple sources
Assess and value	6. Value impact	<ul style="list-style-type: none"> - Decision on which monetisation factors to use
Assess and value	7. Aggregate impact	<ul style="list-style-type: none"> - Survival rate - Discount rate for non-financial streams - Metrics to study
Assess and value	8. Assess sensitivity and uncertainty	<ul style="list-style-type: none"> - Key drivers for a sensitivity analysis
Apply	9. Interpret and validate the results	<ul style="list-style-type: none"> - Selection of a reviewer
Apply	10. Report results	<ul style="list-style-type: none"> - Best visual presentation of results



4.3 Application principles

Assessing and valuing impact cannot be done by relying on scientific methods and objective data only: a substantial amount of professional judgement is also required. It is therefore important to adhere to various application principles when conducting impact assessment and valuation. These principles offer general guidance and set the tone for assessing and valuing impact, providing discipline and structure. The guidance presented in this part of the Guide should always be interpreted with these principles in mind. A set of application principles of impact assessment and valuation that also apply to the Guide are listed below.

Principle: Objectivity: the user should use objective, neutral (i.e. free from bias), factual and verifiable data as much as possible.

Principle: Consistency: the user should assess and project impact consistently. Stark differences between impacts are also assessed in this step. Some impacts may require the use of assumptions, calculations, imputations or estimates, which should all be consistent.

Principle: Rigor: the user should use scientifically and economically robust data and methods when assessing and valuing impact. Robust data and methods can be ensured by going through a due process, i.e. a carefully followed procedure where choices reflect the actual situation as well as possible.

Principle: Proportionality: the time and effort invested in an impact assessment should be proportional to the total expected impact of an opportunity.

Principle: Materiality: the assessment should cover the aspects that reflect the organisation's significant economic, environmental, and social contributions; or that substantively influence the results of the assessment and decisions of funders (Global Reporting Initiative, 2019).

Principle: Uncertainty and transparency: the user should transparently define and test any data and elements of model design that have high uncertainty regarding sensitivity to the impact assessment. The user should fully disclose any material assumptions, uncertainties and limitations in the data and model design that result from input, calculations or estimates.

Principle: Conservativeness: the user should make assumptions, calculations, imputations or estimates *conservatively*. This means that, if during the assessment or valuation process there are various equally reasonable approaches, the approach that has the least favourable impact must be chosen. In other words, the chosen estimates or assumptions should make negative impact relatively large (any other set of estimates and assumptions used would *reduce* the impact) and positive impact relatively small (any other set of estimates and assumptions used would *increase* the impact).



4.4 Introducing the case study

To illustrate each stage and step of this Guide, a hypothetical case study is introduced. It runs throughout this section and serves as a practical example for each stage.

Rosie's Roses II

Example Box 1

Background on Empower Impact fund—the impact investors

Empower Impact fund is a fund for impact investors who seek financial investments that produce social and environmental benefits.

Empower Impact also looks for concessionary investments, meaning it accepts lower financial returns if higher social and environmental benefit can be realised, and searches for investments that may otherwise be overlooked but that have high potential. Concessionary investments are considered because it is possible that the funding opportunities with the highest impact have lower financial returns than regular investment opportunities with a comparable risk profile. This need not always be the case but Empower Impact does not want to exclude such high impact opportunities.

Empower Impact's investments focus on developing countries and on improving the lives of women.

Background on Rosie's Roses – the potential investment

Rosie's is an existing rose farm in Kenya.

Rose-growing is known to have several negative social and environmental externalities. See for example, True Price and Hivos (2015). Rosie's aims to show that this does not have to be the case, and Rosie's roses do indeed have lower external costs than conventionally-grown roses.

Rosie's would like to expand and purchase a neighbouring conventional farm and to implement improvements that make it more sustainable. Rosie's (Rosie's I) desires to make the newly acquired farm a daughter company (Rosie's II), and management is looking for an impact investor to take a 50% share in this company.

Empower Impact fund wants to assess whether this is a venture that it should invest in.



Photo author: africa924

5. Stage 1: Scoping

The scoping stage defines the depth of the impact assessment. In the stage, boundaries and areas of focus should be identified and choices should be made on what to incorporate in the assessment. This is not always a linear process. Decisions can be made iteratively, and users may have to return to this stage during later analysis.

Objectives

- Determine a list of impacts to be assessed
- Decide which business activities and parts of the organisation's value chain are included in the analysis
- Understand how impacts arise from the business activities and value chain
- Select a timeframe in which to assess these impacts
- Define the reference scenario against which the activities of the organisation should be compared

Steps

In this stage, two steps should be completed:

Step 1: Identify the impacts

Step 2: Select the impacts

5.1 Step 1: Identify

The goal of identification is to determine the boundaries of the assessment. For example, which of the company's business activities are important? Or, what part of the value chain should be included?

Main results from this step

- A preliminary list of impacts
- A timeframe for the assessment
- Defined reference scenario(s)

Five scoping decisions should be made in this step. Figure 4 presents a brief overview of these decisions. They are then discussed in more detail:

1. Identify business activities: Identify the business activities of the organisation and decide which are in scope.	2. Map the value chain: Map the organisations' own operations as well as upstream and downstream activities.	3. Identify impacts: Develop a preliminary list of impacts to be evaluated.	4. Select the timeframe: Select an appropriate timeframe for their impact forecast.	5. Identify the reference scenario: Identify the reference scenario- the situation that would have occurred without the activities of the organisation.
--	--	---	---	---

Figure 4: Decisions to be made in the identification stage.



5.1.1 Identify business activities

In this stage, the user should get a full picture of the organisation so that they can select a focus for the assessment.

Activities

1. Obtain in-depth knowledge of the organisation's business activities
2. Choose organisational focus (for direct impact)

In principle, all business lines and products should be analysed for direct impact.⁸ However, it is not uncommon in financial projections to reduce the scope by excluding business lines or products that contribute little to the overall revenue or profit. A similar principle can be applied here. However, in this case a business line or product may only be excluded if it contributes a small amount to revenue *and* is unlikely to generate a large impact (either in the absolute or marginal scenario).⁹

Organisational focus of value chain partners should at least include all activities that are linked to the operations of the organisation being studied—i.e. the production of all input materials and the use and disposal of all outputs need to be in scope. (This is discussed in more detail in the next sub-chapter.) If the organisation in scope influences others (that contribute to its indirect impact),¹⁰ their activities might also be in scope.

Glossary

Organisational focus is the portion(s) of a business to be assessed. There are three levels of organisational focus: organisation, project or product (NCC, 2016).

- An assessment of the **organisation** entity entails all divisions, subsidiaries, business units and geographies. In this case, the user may limit the scope to certain business lines or geographies, perhaps focusing on activities in one country.
- If the assessment is of a **project**, then only the related site and activities need to be considered.
- An assessment of a **product** entails the evaluation of goods or services and the materials used in its production.

In this Guide, most of the content reflects a focus on the organisation.

⁸ For more information on direct impact, refer to Chapter 4.1.3 or to Appendix D.

⁹ For more information about the reference scenarios, absolute or marginal, refer to Chapter 4.1.5.

¹⁰ For more information on indirect impact, refer to Chapter 4.1.3 or to Appendix D.



Rosie's Roses II

Example Box 2

Identify business activities

Activity 1. Obtain in-depth knowledge of the business activities

Rosie's II is a rose farm operating in Kenya. Research revealed that the social issues on farms in Kenya include underpayment, harassment of female workers, forced labour and child labour. Environmental issues include scarce water use, water and soil pollution and energy used to transport the rose crop.

Rosie's II will operate in the same way as Rosie's I and information about its activities was obtained from the company. Rosie's II has 40 ha of land and the rose farm requires three major inputs: labour, water and fertiliser (organic). Rosie's is committed to the production of sustainable roses and has three initiatives that it implements on its farm:

1. An auditing system for reporting harassment

This has been shown to substantially lower the rates of harassment on farms.

2. A living wage for all employees

3. A vertical hydroponic system

Hydroponic systems require less water and fertiliser than conventional farming methods and the vertical configuration of the system uses no energy to operate.

Rosie's II would also like to have a broader influence by setting an example for sustainability that the sector can follow. To facilitate this, it has a public relations team and campaign.

Activity 2. Choose organisational focus

To study the impact of the investment, the scope of the assessment is limited to the activities of Rosie's II. Their business consists almost entirely of the production of one product, roses, although it also produces and sells a small amount of compost. This accounts for less than 1% of revenue and there are no indications that this leads to significant external costs or benefits. For this reason, it is excluded from the scope of the assessment.

The indirect scope includes the value chain (in the next section), and the rose production of its competitors (insofar as they are influenced by the efforts of Rosie's to change the sector).

Key considerations

Information about the business activities of the organisation can often be obtained from the owner(s) or manager(s).



5.1.2 Map the value chain and wider system

Companies are responsible not only for their own operations but have a co-responsibility for their entire value chain (Impact Institute, 2019). (This is further elaborated on in Appendix D). As a result, to understand the impact of an organisation, it is necessary to understand its full value chain.

The value chain consists of three components: 'upstream', 'own operations' and 'downstream'. An impact assessment should include all three components, unless it is clear that one of them does not contribute significantly to any external cost or benefit at all. This is not often the case.

In addition, some organisations may have influence in the wider system. This refers to organisations and activities beyond the value chain of the organisation in scope. For example, in the wider sector or industry.

Activities

1. Map the value chain(s) to identify which impacts occur in each step
2. Map the system beyond the value chain to identify which impacts occur there

Glossary

Value chain of an organisation is the combined upstream, downstream and own operations activities used to produce all products and services to which the organisation contributes.

Upstream operations are the activities of suppliers, including purchased energy.

Own operations are all the activities over which the business has direct control.

Downstream operations are the activities relating to further processing, purchase, use or disposal of any products or services produced by the organisation.

Value chain responsibility is the view that some impact is the responsibility of multiple organisations in a value chain, even if the impact directly occurs as a result of the operations of just one of them.



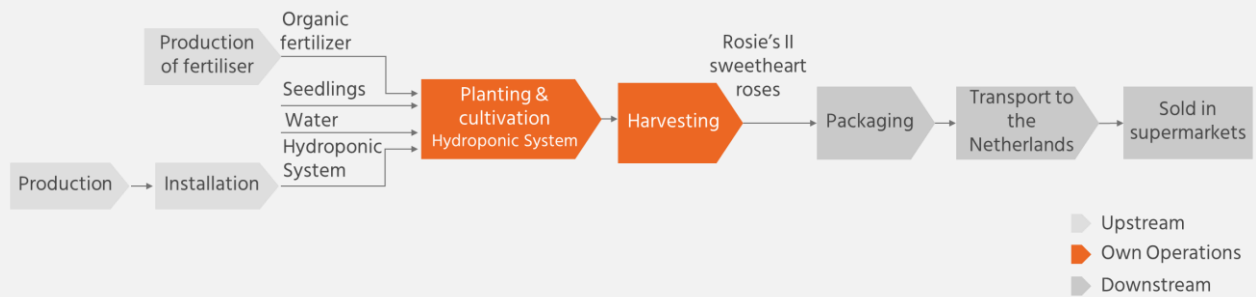
Rosie's Roses II

Example Box 3

Map the value chain and wider system

Activity 1. Map the value chain

The value chain of Rosie's is described below:



Activity 2. Map the system beyond the value chain

As industry leader in sustainability, Rosie's II aims to act as a role model for similar farms. It plans to lead by example, presenting a case for how rose farms can operate in a financially, socially and environmentally sustainable way. In this way Rosie's II influences the wider system outside of its own value chain.

Key considerations

Often the most material impacts are upstream or downstream.



5.1.3 Identify impacts

The user should develop a preliminary list ('long list') of impacts that are potentially relevant. In the next step, a selection is made about which impacts to focus on in the quantitative analysis.

As discussed in Chapter 2, IMP's definition of impact is 'a change in an outcome caused by an organisation'. Impacts should be measurable and valuable, and they can be both positive and negative. Impacts can arise intentionally but can also be unintended consequences of the organisation's activities (IMP, n.d.a).

Three types of impact should be distinguished:¹¹

1. Direct impacts: these are impacts that come about from the operations of the organisation itself.
2. Indirect impacts from value chain operations: these can be separated into upstream and downstream impacts.
3. Indirect impacts from the system: these are impacts from outside the organisation's own value chain.

For instance, this can be through lobbying activities that help third parties innovate and improve their impact. These impacts are usually more difficult to assess as they depend on forecasting the actions of (and getting information about) organisations and value chains far removed from the organisation being studied. Estimates of this impact can often be less accurate than of the other types. It is worth considering this when deciding whether to conduct an assessment of an organisation. If the organisation has mostly impact that is indirect and system-wide, such as advocacy or lobbying, the assessment will be more difficult and will, potentially, produce less accurate results.

Activities

1. Develop a preliminary list of impacts.

A list of key impacts is supplied in Appendix A. These are commonly observed impacts across many geographical locations and sectors. The user should develop their own preliminary list of impacts by first selecting relevant impacts from this list in consultation with the information sources provided below. If the operations of the company give rise to impacts that are not included in the list of key impacts, these should be added.¹²

Information sources

1. Information on the company based on the business activities and value chain

The information will help the user to select the relevant impacts from the standard list and should allow the user to add impacts that might be specific to the organisations' business activities or a portion of the value chain.

2. Research on the industry and geographical location of the organisation

¹¹ For more information about the different types of impact, refer to Appendix D.

¹² If the user selects impacts that are uncommon or have not regularly been assessed, complications might arise in later steps of the impact forecast assessment. For instance, monetisation factors might not be available.



This could take the form of desk research or interviews with people who have industry-specific or local knowledge. Again, the user should use this information to build on the standard list of impacts.

3. Information from other impact measurement sources.

These include the impact dimensions and data categories from the Impact Management Project (IMP, n.d.b) or the impact categories from IRIS+ (GIIN, n.d.), which can also be used as valuable material for selecting impacts to measure.

Glossary

Impact is a change in a valuable and measurable outcome with respect to a reference scenario during a given timeframe. Impact can be both positive or negative and intended or unintended (IMP, n.d.a).

Direct impact of a specific organisation in scope is the impact that follows from the own operations of that organisation.

Indirect impact is the impact that arises outside of the organisation itself as a result of its actions, and where that organisation in scope has a form of influence, direct or indirect, on the occurrence and/or size of that impact.

Indirect impact within the value chain (or 'value chain impact') is the impact that is generated somewhere in the organisation's value chain, either upstream or downstream.

Indirect impact within the system (or 'system impact') is the impact that is generated outside of the organisation's own value chain.

5.1.4 Select the timeframe

This chapter discusses the choice of period over which the impacts are projected.

Activities

1. Determine an appropriate timeframe for the assessment

It may be convenient to use the same timeframe here that is normally used for financial projections. One reason is that data from financial projections, especially that concerning future yields, is used to forecast impact. Also, it allows for ongoing comparisons between expected financial and impact performance. However, in some cases a different timeframe may be required, for example, if it is expected that the most material impacts of the organisation may only arise in a broader timeframe.



Rosie's Roses II

Example Box 4

Identify impacts

Activity 1. Develop a primary list of impacts

A review of the list of key impacts (Appendix A), as well as research on Rosie's, its value chain and the rose-growing industry in Kenya contributes to the creation of a *long list* of potential impacts.

	Indirect: upstream	Own operations	Indirect: downstream	Indirect: system
Positive impacts				
Net profit	✓	✓	✓	-
Profit tax paid	✓	✓	✓	-
Employee payments	✓	✓	✓	-
Tax on employee payments	✓	✓	✓	-
Wellbeing effects of employment	✓	✓	✓	-
Negative impacts				
Contribution to climate change	✓	✓	✓	✓
Air pollution	✓	✓	✓	✓
Water pollution	✓	✓	?	✓
Scarce water depletion	✓	✓	-	✓
Land use, land transformation and related loss of biodiversity	✓	✓	✓	-
Soil pollution	✓	✓	-	✓
Scarce materials depletion	✓	✓	✓	✓
Underpayment	✓	✓	-	✓
Child labour	?	?	-	?
Forced labour	?	?	-	?
Occupational health and safety incidents	✓	✓	✓	✓
Harassment	?	✓	?	✓
Gender discrimination	?	✓	?	✓
Disruption of the local economy from higher wages	-	✓	-	-

For more information on this table see the continuation of Example Box 4 on the following page.



A '✓' indicates that this impact is likely to apply in these steps of the value chain, even if its size may not be significant (i.e. it is not 'material').

A '?' indicates that further research would be required to assess whether the impact applies.

Note that the list above is not exhaustive. In any assessment, one should aim to be as complete as realistically possible.

See the list of key impacts in Appendix A for definitions. Note that 'Disruption of the local economy from higher wages' is not in the list of key impacts, but has been added here to reflect the potential relevancy of these topics in the context of Rosie's II.

Rosie's Roses II

Example Box 5

Select the timeframe

To account for possible developments in the industry and in keeping with Empower Impact fund's protocols, a 20-year timeframe was chosen for the analysis.

Key considerations

The best choice of timeframe may also depend on the objective and Theory of Change (ToC) of the funder, as well as the particular funding opportunity and the relevant impacts in scope.



5.1.5 Identify the reference scenario: alternative to the activities of the organisation

To fully appreciate the impact of an organisation, two types of impact must be calculated: absolute impact and marginal impact. This is briefly discussed below, but in more detail in Appendix D. The assessment of each requires the definition of a reference scenario: this describes what would occur if the organisation did not undertake the activities in scope. This information is required to assess which impacts can be attributed to the organisation, and which impacts would have occurred anyway.

Absolute impact

Absolute impact provides information on the absolute scale of the outcomes of the organisation's activities. It is informative to understand the impact of the activities, regardless of the question by whom they are performed. For absolute impacts, the reference scenario is the one that is closest to the no-activity scenario: in particular, competitors do not replace lost production, governments do not compensate for services not being present, etc. Carbon emissions, as they are ordinarily talked about, are an example of an absolute impact. Companies report the volumes they actually emit, not the difference to a reference. The example also shows that absolute impact is, for instance, particularly relevant to governments that wish to manage the total carbon emissions in their country.

Marginal impact

Marginal impact provides information on the outcomes of the organisation's activities relative to the most likely outcomes in the absence of that organisation. For 'marginal impacts', the reference scenario describes the activities that would most probably have occurred had the organisation not undertaken its activities. Marginal impact is informative for understanding the impact of a specific organisation performing the activities. Selecting the reference scenario for marginal impact can be difficult, yet it is one of the most important decisions to be made as it can have a very large effect on the results. Often, more than one reference scenarios should be selected because there are multiple plausible reference scenarios. The best approximation of marginal impact is then a probability-weighted average of results that arise from multiple reference scenarios. The Rosie's example shows why marginal impact is also very important for understanding how well an organisation performs. Rosie's *raison d'être* is specifically to produce roses that are the most sustainable, when compared to the competition.

Information about marginal impact is particularly relevant for impact investors who, by themselves, represent a small part of the market and whose main impact is through their individual investment decisions.

Activities

1. Identify and define the absolute reference scenario.

The absolute reference scenario is largely straightforward. The reference scenario for absolute impacts is a stylised situation in which (i) the organisation is not active, (ii) no other organisation (competitors, for example) takes over its activities, and (iii) other actors behave the same as in the actualised scenario. For more information on absolute impact and the reference scenario, see Appendix D.

2. Identify and define the marginal reference scenario(s).

Defining the marginal reference scenario (or 'counterfactual') is more complicated than it is for the absolute reference scenario. The user should identify which other organisations (if any) are its competitors (or, in the case of non-profits, are substitute organisations to its operations), or which other organisations would



most likely take over its production or clientele. Doing this means that it is possible to determine which alternative production would be most likely to take place in the reference activity. For more information on marginal impact, see Appendix D.

In most cases, the sector-wide or local average production is a good choice for a reference activity. If there are strongly different alternatives, percentages can be used to combine the options (see the example with electric and gasoline/diesel cars below). It is important to be as specific as possible when deciding what average values to use. The situation in different regions or different sectors can vary significantly and the exact reference scenario the user chooses should depend on the situation at hand. The user should consider whether it is better to have more than one reference scenario to capture the different activities that could occur in the absence of the organisation.

3. Consider how the reference scenario may change over time.

If the aim of the assessment is to project impact over an extended period, the user will also have to consider how the reference scenario may change over that time. Key drivers are the management decisions of other businesses, market developments (specifically regarding volumes produced), and politics or public pressure (often specifically for negative impacts). It is critical that the user considers these trends so that the scenarios can be meaningfully compared.

Again, different reference scenarios may arise based on different possible futures. The user should be willing to move on from this step with more than one marginal reference scenario.

Two examples of selecting marginal reference scenarios

1. An education non-profit offers job and interview training for refugees. At the start of the training, none of the refugees has employment. This training increases their chance of finding employment. In the reference scenario, the organisation does not offer any training. There are also no other organisations that offer this sort of training. As a result, the probability of these refugees finding a job remains at the baseline. This does not mean that none of them finds a job. The average probability of employment for refugees in the area can be used as the reference instead. In this case, because the most likely reference scenario is that no training takes place, the marginal reference scenario is very similar to the absolute reference scenario.
2. When a new manufacturer of affordable electric cars enters the market, some of its growth might come at the expense of other electric cars. Another part of its growth is at the expense of combustion engine (i.e. petrol or diesel) cars. If the manufacturer aims to sell 100,000 cars, the reference scenario can be the production, sale and use of 40,000 other electric cars, and 60,000 combustion engine cars. This reference scenario takes the sale of both types of cars into account. Other reference scenarios that can be considered might assume a different ratio or might include other alternatives.

For example, in the past when electric mobility was still in the early stages of development, the reference scenario for the marginal impact of the first commercially available electric car would have looked rather different. The likely scenario then was that, in the absence of the invention, everyone would use conventionally-powered cars, at least in the short term. However, there was a possibility that an alternatively-powered car would soon be developed.



Glossary

The **activity** of an organisation includes actions taken or work performed by the organisation in the timeframe.

Reference activity is a specified counterfactual activity to the activity undertaken by the organisation that would have occurred in the chosen timeframe if the organisation had not undertaken that activity.

Absolute impact is the impact in which the activities of the organisation under consideration are compared to a reference scenario in which no activities occur.

Marginal impact is the impact in which the activities of the organisation under consideration are compared to a reference scenario in which alternative activities occur. In particular, these alternative activities are those that can be expected to occur were the organisation absent.



Rosie's Roses II

Example Box 6

Identify the reference scenario

This is the result of Activities 1 and 2.

Absolute reference

The absolute reference scenario is simply that Rosie's II does not exist, and that its production is not taken over by other parties. As a result, global rose production is lower. Furthermore, the roses that are not produced need not be transported, etc. So the activity of value chain partners is also reduced. For simplicity, we assume that prices of roses are not affected.

Marginal reference

The marginal reference scenario(s) represents the situation(s) where Rosie's II does not exist, but where the market reacts in the most likely way.

Rosie's II is an expansion of Rosie's I, in which Rosie's I takes over an existing farm and transforms it into Rosie's II. This new farm is made both more sustainable and more efficient. Its production increases, which displaces other existing roses (less sustainable ones) in the market.

In the reference scenario the existing farm still exists but there are several possibilities as to what it does. This also holds for the roses from other farms that are displaced because of the establishment of Rosie's II. Three scenarios are defined below that capture a range of likely possibilities:

1. **Business as usual**

In the absence of Rosie's II, the existing farm continues its production of roses, which obviously are not produced in accordance with Rosie's standards. In fact, it is assumed i) that they have the properties of the average rose grown in Kenya, and ii) that their sustainability does not improve over the timeframe. Rosie's II will obviously not influence the sector, and this role is not taken by any other company or organisation. Furthermore, the sustainability of the sector does not improve independently. For simplicity, prices of roses are assumed not to change significantly.

2. **Slow trend towards sustainability**

Additional production at other farms equals that of the production a Rosie's II. Again, at least initially, these roses have the properties of the average rose grown in Kenya. In this case, however, it is assumed that the Kenyan rose industry, and so the existing rose farms, follows a (slow) trend toward sustainability, similar to that which has been observed in other markets. Rosie's II does not exist and so does not influence the sector; but independently, due to general societal trends, the sustainability of the sector and average Kenyan rose slowly starts improving.

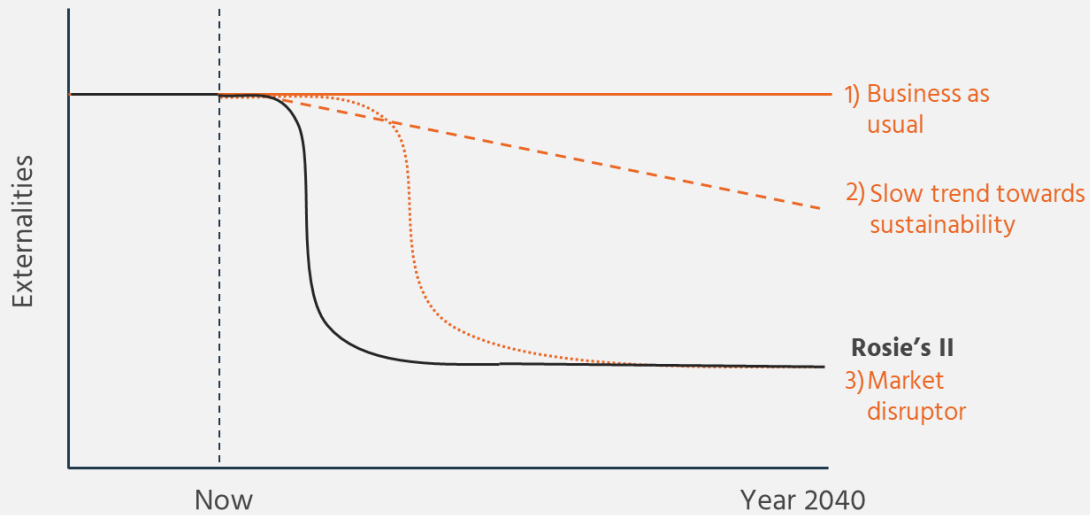
3. **Market disruptor**

Some kind of market disruption takes place. Examples of this could be the growth of another sustainable company similar to Rosie's II, legislation surrounding worker conditions and environmental practices or widespread consumer mobilisation against unsustainable products. As a result, the roses produced by

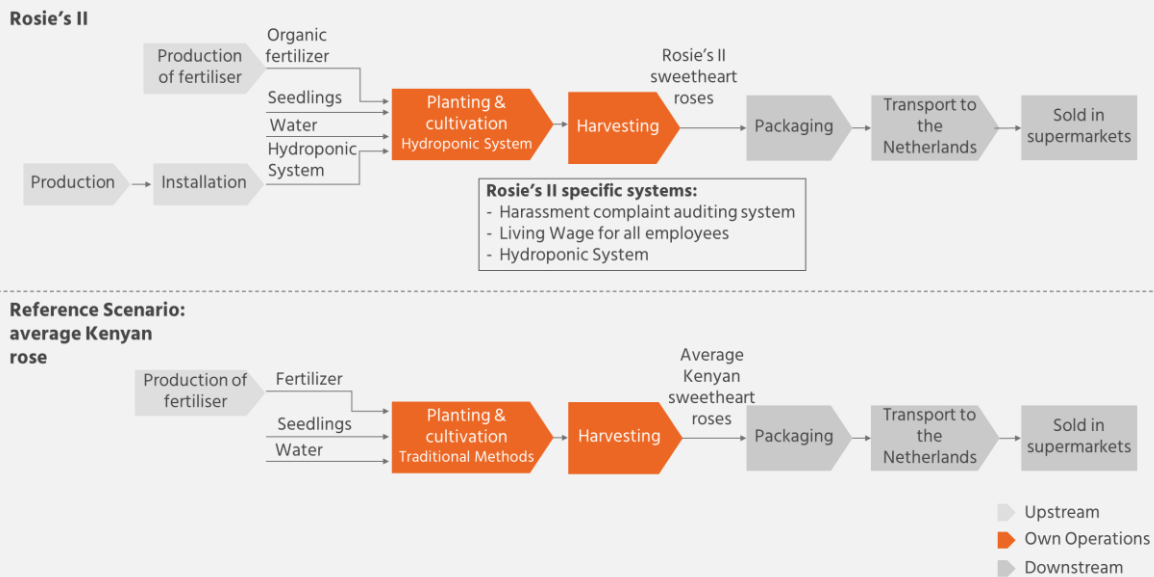


the existing farm and others become sustainable much faster and the sector develops rapidly, even without the help of Rosie's II.

The combination of these three reference scenarios captures the ways the average Kenyan rose (and the sector) could change over time—either rapidly (due to market disruptor similar to Rosie's II), slowly (slow trend towards sustainability), or not at all (business as usual).



The value chains can be mapped to represent the differences between the actual scenario and the marginal reference scenario, as shown below.



5.2 Step 2: Select the impacts

The goal of this step is to select, from the preliminary list of impacts determined in the previous step, which impacts should be quantitatively assessed in the next stage.

Main result from this step

- A shortlist of impacts to be quantitatively assessed

To be selected for the shortlist, an impact should meet three criteria. The user should start with the preliminary list of impacts developed in the previous step and should then qualitatively assess whether the impact meets each criterion. Impacts that do not meet each criterion must be excluded.

1. Materiality : Does the impact contribute significantly to the total impact, or influence the results of the assessment?	2. Feasibility: Given the constraints, is it possible to calculate the impacts to a reasonable degree of accuracy?	3. Strategic focus: Does the investor have a specific strategic focus and/or alignment with fund objectives related to this impact?
--	--	---

Figure 5: Criteria to be met when selecting impacts.

5.2.1 Assess materiality

A materiality assessment is an evaluation of the materiality or relative importance of each impact. A specific goal of the materiality assessment is to determine impacts that the user is sufficiently sure are *not* material. They can then be excluded from the detailed analysis.

Activities

1. Consult the literature and previous impact assessments to establish what impacts are most relevant in the context. This can be based on which impacts are mentioned most often or are regarded as being more significant than others. In addition, there are global databases that provide information on which impacts are typically associated with various activities in specific countries and economic sectors.¹³
2. Analyse key data points relating to the organisation to determine the order of magnitude of the impacts.
3. If possible, and if data is available, perform simple calculations based on rough estimates.
4. Assign a materiality score (from 1–4) to each impact based on the expected order of magnitude of the impact using findings from the first three activities.
5. Consult with experts and relevant stakeholders to generate consensus on the assigned score.

¹³ See for instance the Social Hotspot Database (Social Hotspot Database, n.d.), the EORA global supply chain database (EORA, 2018) and Impact Institute's Global Impact Database (Impact Institute, 2020). Note that these databases typically charge a license fee.



Glossary

An impact is **material** if it reflects the organisation's significant economic, environmental, and social contributions, or if it substantively influences the results of the assessment and decisions of funders (Global Reporting Initiative, 2019).

5.2.2 Assess feasibility

The scope of an assessment is sometimes circumscribed by what is feasible given existing knowledge on the subject, time constraints and data availability. If impacts are excluded based on feasibility concerns, this should be mentioned explicitly in the report as it can lead to inaccurate results.

Impacts that cannot be assessed with a reasonable degree of accuracy, and as a result are not part of the quantitative analysis, can still be taken into account when taking investment decisions. This Guide, however, does not provide advice on how to do so.

Activities

1. Perform a preliminary search of available data concerning the impact.
2. Estimate the time needed to calculate the impacts and compare this to how much time is available.
3. Assign a feasibility score (from 1–4) to each impact based on whether it is feasible for the impact to be calculated to a reasonable degree of accuracy.

5.2.3 Consider strategic focus

Users without a specific strategic focus need not include this criterion in the selection of impacts. However, users who do have a strategic focus or a specific ToC can bear it in mind when determining which impacts are chosen. For example, an environmental preservation fund might not focus on Intellectual Capital impacts, but would instead require detailed insight into Natural Capital impacts. However, material negative impacts are important to consider irrespective of strategic focus as excluding them can lead to inaccurate and biased results.

Activities

1. Review the specific goals and the focus of ToC of the organisation and/or funder.
2. Assign a strategic focus score (from 1–4) to each impact based on whether the impact is of interest to the funder or organisation, given their strategic focus.



Rosie’s Roses II

Example Box 7

Select the impacts

This is the result of all the activities regarding the materiality, feasibility and strategic focus assessments.

For materiality, earlier studies, for example (True Price & Hivos, 2015), were assessed and results were compared to the average impact of agricultural sector as a whole in Kenya. Feasibility was evaluated based on the current state of impact models and typical data requirements. Strategic focus was assessed based on the vision and mission of Empower Impact fund.

After consultation and research, each impact was given a score for materiality, feasibility and strategic focus; these are ranked and the impacts with the highest scores are selected.

Nr.	Impact	Materiality	Feasibility	Strategic Focus	Included (✓/-)
1	Net profit	●	●	●	✓
2	Profit tax paid	◐	●	◐	✓
3	Employee payments	◐	●	●	✓
4	Tax on employee payments	◐	●	◐	✓
5	Contribution to climate change	◐	◐	◐	✓
6	Scarce water depletion	◐	◐	●	✓
7	Harassment	◐	◐	●	✓
8	Underpayment	◐	◐	◐	✓
9	Disruption of the local economy from higher wages	◐	◐	◐	✓
10	Water pollution	◐	◐	◐	-
11	Air pollution	◐	◐	◐	-
12	Land use, land transformation and related loss of biodiversity	◐	◐	◐	-
13	Soil pollution	◐	◐	◐	-
14	Scarce material depletion	◐	◐	◐	-
15	Occupational health and safety incidents	◐	◐	◐	-
16	Gender discrimination	◐	◐	◐	-
17	Well-being effects of employment	◐	◐	◐	-
18	Child labour	○	◐	◐	-
19	Forced labour	○	◐	◐	-



5.2.4 Define the shortlist of impacts

Here, findings from the last three steps are integrated to define a final shortlist of impacts. The impacts on the shortlist are quantitatively assessed in the next step.

Activities

1. Rank the impacts based on their materiality, feasibility and strategic focus scores.
2. Choose a selection of impacts that have the best overall score. The number of impacts chosen will depend on individual time constraints. It is also worth considering proportionality,¹⁴ as the number of impacts included in the assessment will greatly affect the time and resources the assessment requires. It is also important to strive for objectivity, and so material negative impacts should be included even if they score lower on criteria such as strategic focus.

¹⁴ For more information on proportionality, see the application principles in the introduction of Part II: Guidance.



Rosie’s Roses II

Example Box 8

Impact selection: define a shortlist of impacts

This is the result of Activities 1 and 2.

Based on the above assessment, nine impacts are selected as being material, feasible and/or strategic focus and so are selected for quantitative analysis.

Shortlist of impacts:

Impacts	Indirect: upstream	Own operations	Indirect: downstream	Indirect: system	Capital
Positive impacts					
Net profit	✓	✓	✓		Financial
Profit tax paid	✓	✓	✓		Financial
Employee payments	✓	✓	✓		Financial
Tax on employee payments	✓	✓	✓		Financial
Negative impacts					
Contribution to climate change	✓		✓	✓	Natural
Scarce water depletion		✓		✓	Natural
Harassment		✓		✓	Social
Disruption of the local economy from higher wages		✓			Social
Underpayment		✓			Social

Not all stages of the upstream and downstream parts of the value chain are material. For example, downstream from Rosie’s II there is first a transportation stage where the roses are transported by airplane to Europe (which is a material contribution to climate change), and then a stage where the roses are sold in grocery stores and flower shops. This second stage is immaterial in this case because while a supermarket may have a large impact overall (for example, contribution to climate change through the use of cooling systems), it is shared over the hundreds of products they sell, so that each one individually (in this case Rosie’s roses) does not contribute much.



6. Stage 2: Assessment and valuation

It is in the assessment and valuation stage that the main part of the impact forecast assessment is performed. In this stage, the user should define the impact pathways, assess and value impacts, and ultimately assess sensitivity.

Objectives

- Understand the organisation and its business and financial context, performance, history and outlook
- Understand how the organisation creates impact
- Define the methods for assessing and valuing the impacts in scope
- Quantify and express all impacts in scope in a monetary value
- Compile results into relevant groups for analysis
- Validate, interpret and justify all results

Steps

In this stage the user should complete the six following steps, as illustrated by Figure 3:

Step 3: Conduct a financial analysis (if it has not already been done)

Step 4: Establish the impact pathways

Step 5: Predict relevant future values and make a model to calculate impact

Step 6: Value impact

Step 7: Aggregate impact

Step 8: Assess sensitivity and uncertainty

Each step is explained in the sub-chapters that follow.

Glossary

Impact forecasting is the forward-looking process of quantitatively assessing, valuing, and expressing impact in a single common unit to understand the future impact of an organisation's activities. The common unit is often monetary.

Impact measurement is the backward-looking process of quantitatively measuring, valuing, and expressing impact in a single common unit to understand the past and current impact of an organisation's activities. The common unit is often monetary.

Impact valuation is an assessment of the normative desirability of an impact from the perspective of a stakeholder in a common quantitative unit that reflects that impact's value to that stakeholder. The common unit is often monetary.



6.1 Step 3: Conduct a financial analysis

A standard financial analysis is a pre-condition for a meaningful impact analysis, certainly for investments in organisations with a business model. In some cases, a financial analysis will already be available or will be developed by a financial advisor. In others, the user will have to develop it. Either way, the user should be able to perform such an assessment and be aware of its subtleties. However, as financial analysis is not the focus of this Guide and many resources are available on the topic, a high-level description of the activities will suffice here.

Together with the impact forecast report, the results of the financial analysis will serve to help the user to make investment decisions or build a portfolio. Key intermediate results are also used as drivers for impact forecasts. The development of the production volume over time is an example. This not only drives revenues, but also, for example, drives all Natural Capital impacts that correlate in scale with the volume of units produced.

Main result from this step

- Business analysis and financial model with a forecast of Financial Capital and a financial valuation

Activities

1. Analyse the business and historical performance

It is crucial to first develop an understanding of the organisation's history, evolution, governance and ownership structure, and to examine historical measures of financial performance. Industry benchmarks can act as a frame of reference to assess the organisation's past performance. Additional factors, such as non-operating assets, should also be considered. The historical financial results have to be transformed from an accounting to a cash basis.

2. Perform a market analysis

This entails developing an understanding of how the market has and continues to evolve. In particular, look for potential market disruptors, as well as at past and present innovations. If the user is unfamiliar with the industry in which the organisation is operating, this analysis may have to be detailed and may take considerable time, but an understanding of the market and the organisation's competition will be invaluable in the steps that follow.

3. Forecast performance

An organisation derives value mainly from its ability to generate value in the future. While the purpose of this Guide is primarily to forecast performance of the other Capitals, financial forecasts reveal critical information about the organisation's ability to survive and continue to generate impact. Furthermore, the information gleaned, and the skills used here, will be needed in future calculations. An assessment of the organisation's outlook requires insight into its operations, continued strategy and expected performance of investments. This assessment should include a forecast of cash flows, invested capital, the Profit & Loss (P&L) and balance sheet and could include a detailed forecast of market share data, revenues, expenses, taxes, capital requirements and cost of capital, as well as a scenario and risk analysis of these forecasts.

4. Perform a valuation

There are several industry-approved valuation approaches. The user should first choose their preferred valuation method and then use financial disclosure information and the results from the forecast to



complete the valuation. The user should keep in mind that the best method may differ, based on the circumstances.¹⁵

Information sources

This is a brief summary of the financial analysis that should be performed by the user. For more detailed guidance, refer to the extensive investment literature, for example:

1. McKinsey & Company's Valuation: Measuring and Managing the Value of Companies, *6th ed, 2015*
2. Aswath Damodaran - Valuation Toolkit, NYU Stern (Damodaran, n.d.)

¹⁵ A discounted cash flow approach aligns best with the impact valuation approach recommended in this Guide.



Rosie’s Roses II

Example Box 9

Financial analysis

This is the result of Activities 1–4.

Based on the historical performance of Rosie’s I and a market analysis, the following financial forecast results and valuation of Rosie’s II were generated.

Aggregate financial metrics (in thousand EUR, price level 2020) - assuming an 8% real discount rate and a 98% survival rate

Organisation/project	Expected	Low	High
Valuation post-money	-1,300	-2,100	430
IRR	6.8%	6.0%	8.4%

Financial flows organisation/project (in thousand EUR, price level 2020) - assuming an 8% real discount rate and a 98% survival rate

Financial cash flows	NPV	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-40 (/yr)	2040+ (/yr)	terminal growth
Investment cash flow		-11,500													
FCF of operations	-1,300		700	800	900	900	1,000	900	900	900	900	900	700	600	0%

Volume forecast (in million roses)

Forecast of rose volume	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-40 (/yr)	2040+ (/yr)	terminal growth
Volume of roses		34	37	41	44	47	47	47	47	47	47	47	47	0%

The financial returns of an investment in Rosie’s II are modest. Although the Internal rate of return (IRR) is less than that of alternative investments,¹⁶ it is above zero (so it is at least better than money conservation) and is considered acceptable, provided there is a clear impact opportunity.

¹⁶ If the IRR is smaller than the discount rate used to calculate the NPV, then the NPV is negative.



6.2 Step 4: Establish impact pathways

The goal of this step is to define all plausible impact pathways, thereby enabling the user to understand how the organisation creates value for society.

Main result from this step

- Impact pathways of all impacts selected to be quantitatively assessed in the scoping stage

6.2.1 Make impact pathways for the impacts in scope

In this step, the user should establish all plausible impact pathways for the impacts in scope. The organisation's activities have been identified, as have the impacts that occur as a result of them. An impact pathway explains the way in which an organisation's activities eventually lead to an increase, decrease or transfer of capitals, stock or welfare. It includes all the cause and effect steps, as well as calculations, that are done to explain the way an organisation's activity results in an impact.

Impact pathways are an extension of a more traditional input–output–process model used in operations management. But in this case, inputs are the resources the organisation uses to carry out its activities, the outputs are the products or services delivered, and the processes are all the organisation's activities that make the outputs possible. For example, consider a car manufacturer: the inputs of the activities would include, materials (such as aluminium and steel), financial resources (funding and investments) and human resources (the employees and their skills). The activities include the welding, painting, assembly and inspections required that result in the output—which is the car.

An impact pathway extends this traditional model in two ways:

1. There are five steps in the general impact pathway: activity, inputs, outputs, outcomes and impact. The definitions of some steps are broader, in the sense that they consider a wider range of 'capitals' than is traditional in business.
2. There is a reference scenario in the impact pathway. Instead of 'just' describing the results of a business activity, they are always compared to an alternative: what else would have happened if the business had not have performed the activity?

Inputs

The inputs of an impact pathway are similar to those described above for the traditional input–output process model. They include all financial, human, manufactured, natural and other resources used by the organisation to carry out its activities (Hornsby & Blumberg, 2013). Technically, inputs are direct effects of an organisation's activity that occurred over a specified period, and which constitutes a voluntary and positive capital change to the organisation.

Activities

The organisation's activities are the business operations it undertakes in the timeframe. This is similar to a standard input–output process model, and so the explanation and example given above apply.



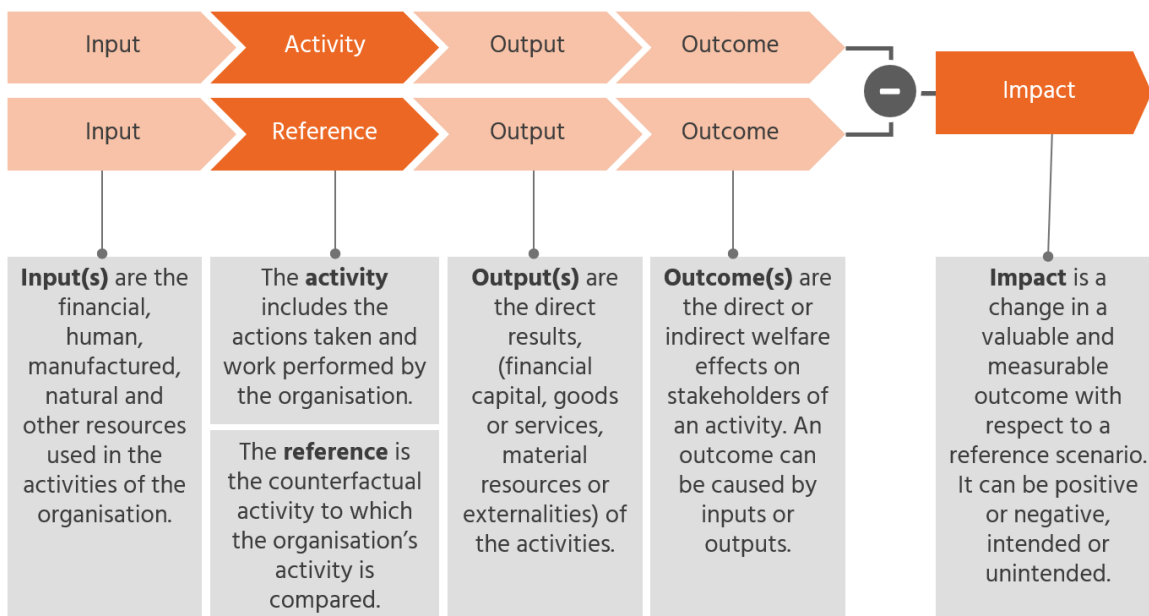
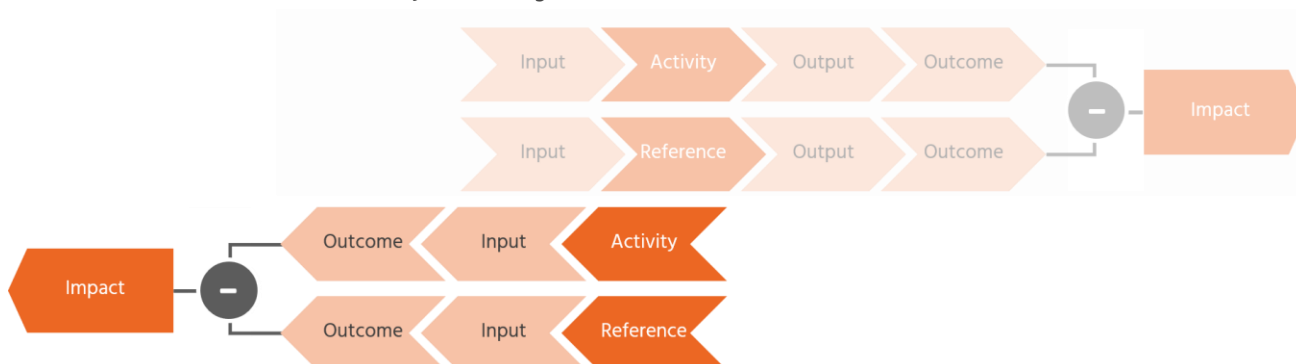


Figure 6: The impact pathway.¹⁷

Outputs

The definition of outputs is extended from the traditional input–output process model to include all financial capital changes, goods and services provision, and resource creation or externalities that occur as a result of the organisation and its activities. Technically, it is a direct effect of an organisation’s activity that occurred during a period chosen in the timeframe, and which is not an input. An organisation usually has some degree of control over its outputs. Taking the car manufacturer as an example again, outputs include: the car itself (which consumers purchase), payments made to employees for their work, the CO₂ released during production, and labour rights issues (such as occupational health and safety) that may occur in factories. This shows that outputs can include both intended and unintended effects.

¹⁷ As mentioned, inputs can also lead directly to outcomes. This merits a different impact pathway, one that directly connects activities to inputs and outcomes. As compared to the ‘standard’ impact pathway, it points left instead of right, as illustrated below. Using the car manufacturer as an example again, consider the use of the non-renewable material aluminium in manufacturing processes. A direct result of using the input material is a (slight) contribution to the depletion of the global resource. This results in lower availability for future generations.



Outcomes

Outcomes are the likely or actual effects on the welfare of stakeholders (OECD, 2002). These effects can arise as a result of the use of inputs or as a result of the outputs of the organisation. Affected stakeholders can either be people (for example, employees, clients and other communities), society or the planet itself. Technically, outcomes are the direct or indirect welfare effects on stakeholders of an activity that occurred over a specified timeframe.

Unlike inputs and outputs, outcomes are usually not under the direct control of the organisation. But as with outputs, outcomes can be both intended and unintended (IMP, n.d.a). For a car manufacturer, for instance, an intended outcome as a result of an output is the increased consumer welfare from using the car. There may be other factors that contribute to this welfare gain. This means that the organisation does not have full control of this outcome. An example of an unintended outcome is the contribution to climate change from the CO₂ released (both in production and use of the vehicle). This affects the welfare of people and society as a whole negatively. Other examples are the welfare loss for employees who experience labour rights issues.

Reference scenario

For all impacts, both direct and indirect, their absolute and marginal component should be calculated (see Appendix D for detailed explanation). To do this, a reference scenario must be used. To draw the impact pathway for a reference scenario, the user must again identify inputs, activities, outputs and outcomes that are used or occur in that scenario.

For marginal impacts, it is necessary to map the reference scenario as identified in Chapter 5.1.5. If multiple marginal reference scenarios have been defined, then more impact pathways will have to be drawn to reflect each alternative.

For example, consider that the car manufacturer is now actually an electric car manufacturer, as described in Section 5.1.5. For electric vehicles, the contribution to climate change in the use phase (an outcome) is much lower than for combustion engine vehicles. In the marginal reference scenario, in the absence of the electric vehicle manufacturer, more combustion engine vehicles would be sold, which would result in the outcome of a larger contribution to climate change.

The user should also define the scenario where the organisation is not active, and no alternatives are modelled. This is used for absolute impacts.

Impact

Impact is the difference in the outcome produced by the activity versus the outcome produced in the reference scenario.

In the electric vehicle example, the impact is the difference in climate change contribution between the actual and reference scenario. In the reference scenario for marginal impact, combustion engine vehicles have a greater contribution to climate change than in the scenario of the electric vehicle producer. As a result, the marginal impact is a reduction in the overall contribution to climate change. In other cases, where the organisation's activities and the reference scenario activities lead to outcomes of the same degree, depth and magnitude, the marginal impact will be zero. It is often useful to draw the impact pathways to determine if this is the case.



An impact pathway, with all five stages, should be created for all impacts in scope in both the absolute and marginal cases.

Activities

1. Identify the inputs and activities of the organisation that are involved in the creation of the chosen impacts

Identify how these inputs and activities may differ in both reference scenarios. This process may motivate the user to revisit the scoping stage of the assessment and consider including additional impacts.

2. Consult existing or accepted standards

For each impact in scope, it is advisable first to consult impact pathways in existing standards and sources listed below. Environmental impacts, in particular, have been well mapped in other sources. Often existing pathways may require some tweaking to fit the specific circumstances, but they can serve as a good base. If existing methods are inadequate for the selected impact, the user can create their own pathway using the steps below.

3. Brainstorm impact pathway stages

For each identified input of the organisation, consider whether the use of it has a direct impact on the people or planet, in other words that it leads directly to an outcome. If it does, consider what the outcomes would be in the reference scenarios and then link this outcome(s) to relevant impacts.

For each of the organisation's activities, brainstorm possible outputs and outcomes. A single business activity, for example, assembling a car, can lead to multiple outputs and outcomes. Identify how this differs in the reference scenario and map to impacts.

The number of pathways that are necessary will depend on the number of impacts and reference scenarios in scope.

4. If necessary, add extra items based on a review of literature



Why establish impact pathways?

- Establishing impact pathways forces the user to think in a structured way about how impacts occur
- After impact pathways have been drawn, the next calculation steps are far simpler
- In some cases, establishing impact pathways for a specific impact might remind the user of a related impact that might have been overlooked in the scoping stage. In that case, it can be added

Information sources

In addition to inductive and deductive reasoning, several sources can be used to establish the impact pathways.

These include:

1. Generally accepted standards (e.g. ReCiPe life cycle assessment methodology (Huijbregts et al., 2016) for Life Cycle Assessment - LCA)
2. (Scientific) research
3. Organisational information
4. Expert and stakeholder opinion

Glossary

Impact pathway is a quantifiable chain of effects and counterfactual effects linking a specific activity of an organisation to its (non-valued and valued) impact.

Actual scenario is the chain of realised and/or expected effects of inputs, output and outcomes as a result of the reference activity.

Reference scenario is the counterfactual chain of effects of inputs, outputs and outcomes as a result of the reference activities.

Input(s) are the financial, human, manufactured, natural and other resources used in the activities of the organisation over a chosen timeframe. Technically, an activity's **input** is a direct effect of an activity of the organisation that occurred over a period chosen in the timeframe and that constitutes a voluntary and positive capital change to the organisation.

Output(s) are the direct results (financial capital, goods or services, material resources or externalities) of the activities that occur over a chosen timeframe. Technically, an activity's **output** is a direct effect of an organisation's activity that occurred during a period chosen in the timeframe and that *is not* an input.

Outcome(s) are the direct or indirect welfare effects on stakeholders of an activity that occurred over a chosen timeframe. An outcome can be caused by inputs or outputs.



Rosie’s Roses II

Example Box 10

Make impact pathways of the impacts in scope

This is the result of Activities 1–5.

The result of the activities in this section are the impact pathways. Here, only the impact pathways for the *contribution to climate change* (through fertiliser and transport) are shown. This is not complete: it shows the impact pathways of only one of the nine impacts (the impact pathways for two more impacts, *harassment* and *payments to employees*, can be found in Appendix E) in scope, and only deals with one of the three marginal reference scenarios. However, the other pathways can also be drawn based on this example.

Contribution to climate change

This impact is only found upstream and downstream of Rosie’s II and through indirect system effects. Upstream, Rosie’s II purchases fertiliser from suppliers. However, hydroponic systems use much less fertiliser than traditional farming. Both the absolute and marginal upstream pathways are defined. Hydroponic systems also use no energy, while traditional farming methods do. Rosie’s II thus requires that no energy is supplied to their farms; this contributes to the marginal impact and can be shown in a second impact pathway (not shown here). Furthermore, as a leader in sustainability in the sector, Rosie’s acts as an example to other rose producers and demonstrates that hydroponic systems are cost effective. It therefore has an influencing effect on the sector, which is the indirect effect.

Absolute impact: indirect impact in the value chain (upstream).

		Input	Activity	Output	Outcome	Impact
Activity	Rosie’s II is in operation	Fertiliser (small amounts) required as input	Rosie’s II orders fertiliser from suppliers. (A low amount as their demand is low)	GHG (CO ₂ and N ₂ O) emissions during fertiliser production	Contribution to climate change (low because of low fertiliser use)	Absolute impact Contribution to climate change (a negative impact)
Reference	Rosie’s II is not in operation. Global volume of roses drops (their volume is not taken over by competition)	No fertiliser required as input	No fertiliser supplied	No GHG emissions	No contribution to climate change	

Marginal impact: indirect impact in the value chain (upstream).

		Input	Activity	Output	Outcome	Impact
Activity	Rosie’s II is in operation	Fertiliser (small amounts) required as input	Rosie’s II orders fertiliser from suppliers (a low amount as their demand is low).	Low volumes of GHG (CO ₂ and N ₂ O) emissions during fertiliser production	Contribution to climate change (low)	Marginal impact The roses grown by Rosie’s II replace some conventional roses from the market. A lower amount of climate change contribution than without Rosie’s II. (positive impact)
Reference	Rosie’s II is not in operation. Global volume of roses stays constant (extra volume is taken over by competition)	Fertiliser (large amounts) required as input	Other rose farmer’s orders fertiliser from suppliers (a high amount as demand is high).	Large volumes of GHG (CO ₂ and N ₂ O) emissions during fertiliser production	Contribution to climate change (large)	



Marginal impact: indirect impact in the system.

		Input	Activity	Output	Outcome	Impact
Activity	Rosie's II is in operation	Fertiliser (small amounts) required as input	The sector observes the example set by Rosie's II & applies hydroponics to some degree thus using less fertiliser.	GHG (CO ₂ and N ₂ O) emissions decrease quickly over time at suppliers who produce less	Low contribution to climate change in sector	Marginal impact: The example set by Rosie's II leads to a sector-wide decrease in climate change contribution in that part of the value chain (positive impact)
Reference	Rosie's II is not in operation and therefore does not act as an example	Fertiliser (large amounts) required as input	Other farms grow autonomously without the Rosie's II example and don't use hydroponics.	High GHG (CO ₂ and N ₂ O) emissions which decrease slowly over time at suppliers who produce a lot of fertiliser	High contribution to climate change in sector	

This pathway would look different in the other reference scenarios.

Downstream, the roses produced by Rosie's II travel by airplane to the Netherlands. Although it is considering transport by ship, this has challenges and it is assumed Rosie's II will continue to employ air transport. Hence, the downstream value chain of Rosie's II looks the same as that of the rest of the sector. As a result, the marginal impact is zero. There is no indirect impact for this impact as Rosie's II does not act as an influencer for the sector.

Absolute impact: Indirect impact in the value chain (downstream).

		Input	Activity	Output	Outcome	Impact
Activity	Rosie's II is in operation	Kerosene required as input	Roses transported to Netherlands via airplane from Rosie's II	Engine emits CO ₂ during flight	Contribution to climate change	Absolute impact Contribution to climate change (a negative impact)
Reference	Rosie's II is not in operation. Global volume of roses drops (their volume is not taken over by competition)	No kerosene required as input	No transportation required for roses from Rosie's II	No CO ₂ emitted	No contribution to climate change	

Marginal impact: Indirect impact in the value chain (downstream).

		Input	Activity	Output	Outcome	Impact
Activity	Rosie's II is in operation	Kerosene required as input	Roses transported to Netherlands via airplane from Rosie's II	Engine emits CO ₂ during flight	Contribution to climate change	Marginal impact 0 Rosie's II roses replace some conventional roses from the market. There is the same climate change contribution upstream as with competition.
Reference	Rosie's II is not in operation. Global volume of roses stays constant (extra volume is taken over by competition)	Kerosene required as input	Other roses transported to Netherlands via airplane from other farms	Engine emits CO ₂ during flight	Contribution to climate change	

Key considerations

It is important to define the impact pathways in a consistent way and in line with the standards in the sector, with the aim to ensure comparability over years and companies.



6.3 Step 5: Assess future impact

The goal of this step is to assess all impacts in scope in a quantitative manner. In this step, the user will gather all required data, make projections where necessary and ultimately quantify all the selected impacts.

Main results of this step

1. A calculation method for each impact
2. Data points that fit into the model, including a projection of these data points over the entire timeframe
3. Quantified non-valued estimates for each impact in scope, projected over the entire timeframe

6.3.1 Define the method for assessing and valuing the impacts in scope

In this step, the user should define the methods for assessing and valuing the impacts in scope, based on the impact pathways established in the previous step.

Activities

1. Consult existing or validated impact assessment methods

For some impacts, predominantly environmental, comprehensive guidance already exists. For each impact in scope, it is advisable first to consult methodologies described in existing standards and the sources listed below. These sources are also necessary if a ‘footprint factor’ is needed for calculations. Footprint factors are conversion factors between outputs (or inputs) and outcomes, and as such form part of the calculation trees. For example, a footprint factor converts kwh of electricity to kg CO₂-eq. (see Figure 7).

Environmentally (and socially) extended input–output databases can give an indication of the impact per unit of economic activity in a given combination of economic sectors and countries, often already in monetised form. For example, these databases can provide the monetised contribution to climate change outcome per dollar spent/invested in the agricultural sector in Germany.

The benefit of using this value is that it simplifies analysis. However, it is unlikely to be very useful for the assessment of the impact of an investee itself (as impact investors are likely to specifically select organisations that do better than the peers in their sector). Nevertheless, it is a good way to for considering the impact of (indirect) suppliers in a pragmatic way—these impacts are less likely to deviate too much from their sector averages. Input–output databases can help to assess that indirect impact. For example, when assessing a German supermarket, many of its suppliers might come from the agricultural sector in Germany so that individual differences average out.

If existing methods are inadequate for the selected impact, the user can create their own method/s.

2. Create calculation trees that map the calculation steps of each impact pathway

Calculation trees show the values that must be multiplied (or divided, added or subtracted) together to get the total monetised impact (see Figure 7 for more detail). These calculation trees should be based on the selected method.

Calculation trees that use input–output analysis are, in theory, very simple. All they require is an input–output factor that directly provides the impact per unit of economic activity. That input–output factor is then multiplied by the economic activity (for example, the added value) to give the resulting input.



The direction of the impact must be considered when creating calculation trees: an effect that is, by nature, negative should result in a negative impact. In that case, it is necessary to multiply the valued (monetised) impact by -1 .

3. Identify what data inputs are required to complete calculations

These data inputs should capture the *size* of an effect or output—for example, injuries per employee, or water usage per hectare. Subsequent forecasting is made easier if outputs are calculated per a standardised unit: forecasted impact can then be calculated by forecasting both the output per unit and the number of units. Using the injuries per employee example, the injury rate per employee could be forecast based on sector averages, while the number of employees could be forecast based on projected growth.

Information sources

If there are established methods for impact assessment, then they should be used to create the calculation trees. The user should consult the following sources, in the following order of preference:

1. Generally accepted standards (e.g. Greenhouse Gas Protocol)
2. Guidelines with wide adoption (e.g. ReCiPe life cycle assessment methodology (Huijbregts et al., 2016) for LCA, ISO 14040:2006, ISO 14044:2006)
3. Peer-reviewed scientific literature
4. Professional literature

Figure 7 illustrates the kind of calculation tree that could be created. Although parts of the tree may appear somewhat complicated, most are intuitive. They start with input data in a form that is most likely to be available and can typically only be multiplied or divided in a single way to get to the actual impact. It is important to keep track of units carefully here, as they serve as a guide. This particular calculation tree required multiple steps and footprint factors to calculate the impact per unit. However, for some cases, especially for environmental impacts, this value is already available in some form in an existing study or LCA.



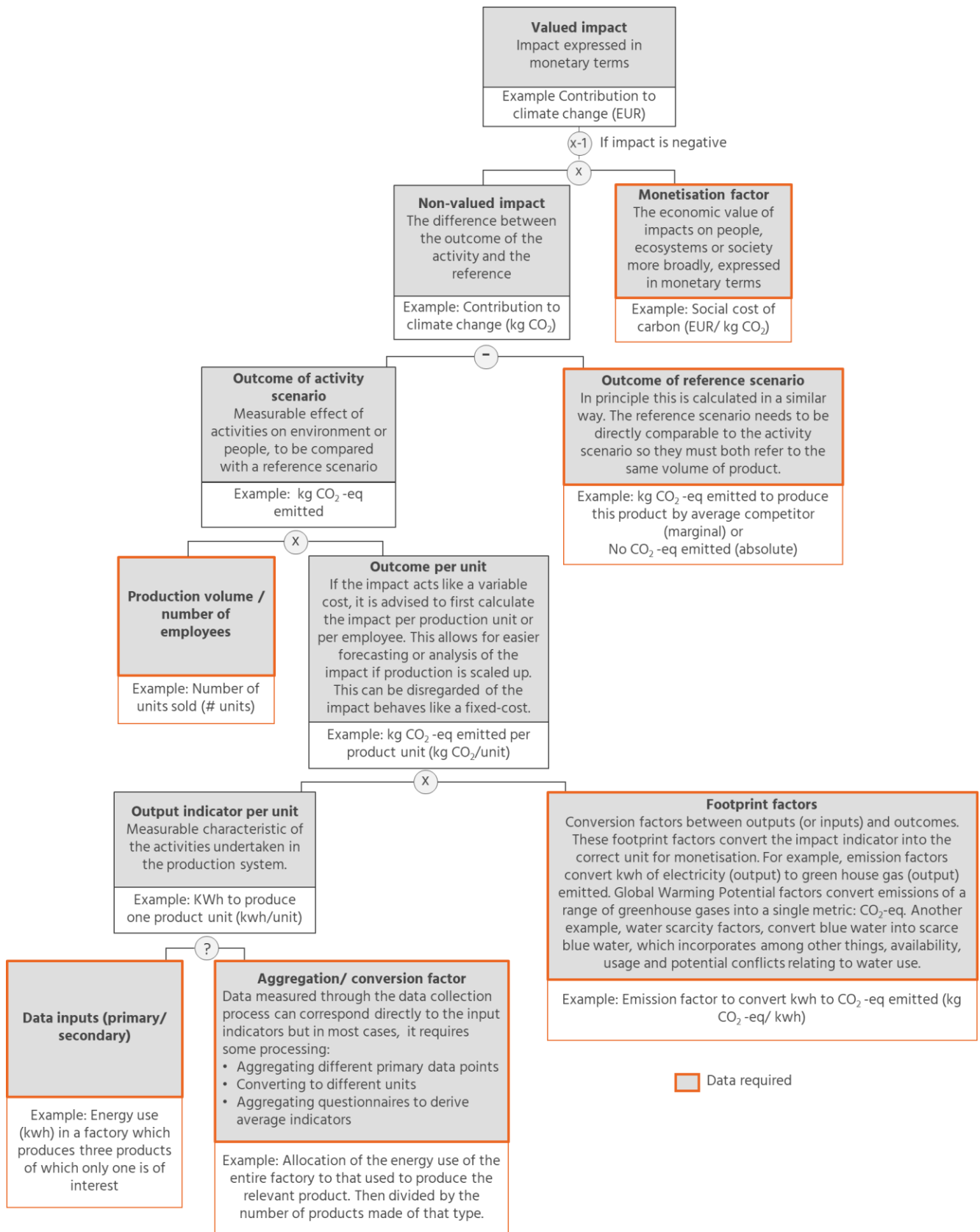


Figure 7: Calculating impact using a calculation tree.



Rosie’s Roses II

Example Box 11

Define the methods for assessing and valuing the impacts in scope

This is the result of Activities 1–3.

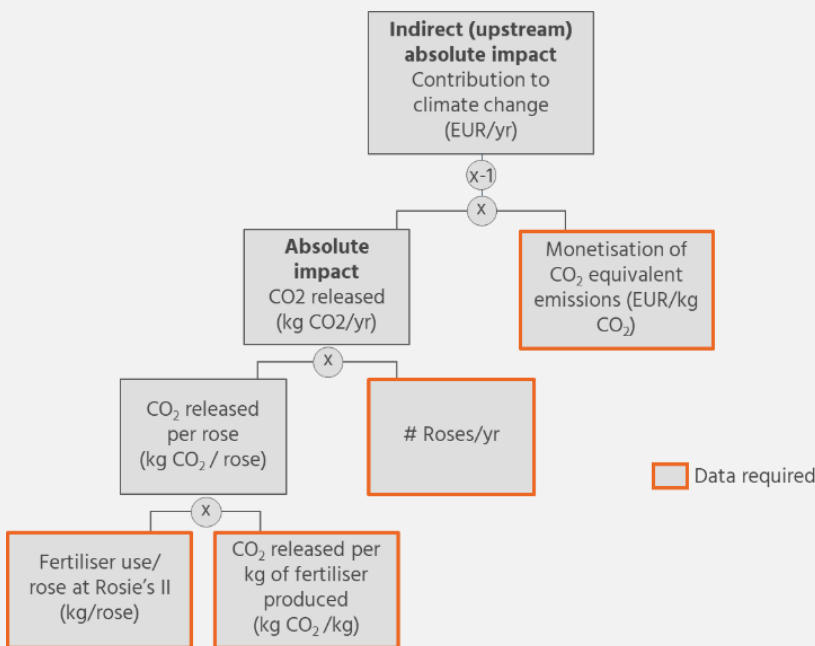
After consulting existing the literature, the following calculation trees were drawn. (Again, only the calculation trees for *contribution to climate change* are shown: the calculation trees for two other impacts, *harassment* and *payments to employees*, can be found in Appendix E). All calculations are on an annual basis. Required data inputs were identified and are highlighted in the calculation trees by orange outlines. Rosie’s has a relatively simple supply chain. (For example, it knows all its suppliers). Therefore, all calculation examples here are bottom-up rather than top-down using input–output analysis.

Contribution to climate change

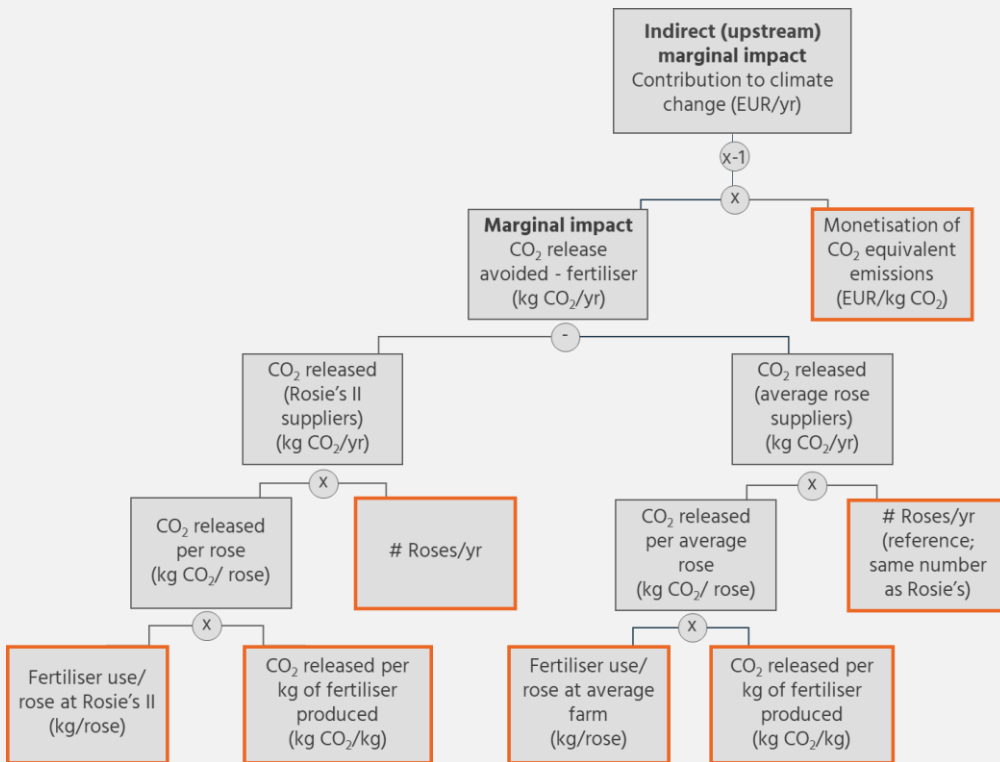
Again, as shown by the impact pathways in the previous step, this impact is only found upstream and downstream of Rosie’s and through indirect system effects.

Absolute impact: indirect impact upstream.

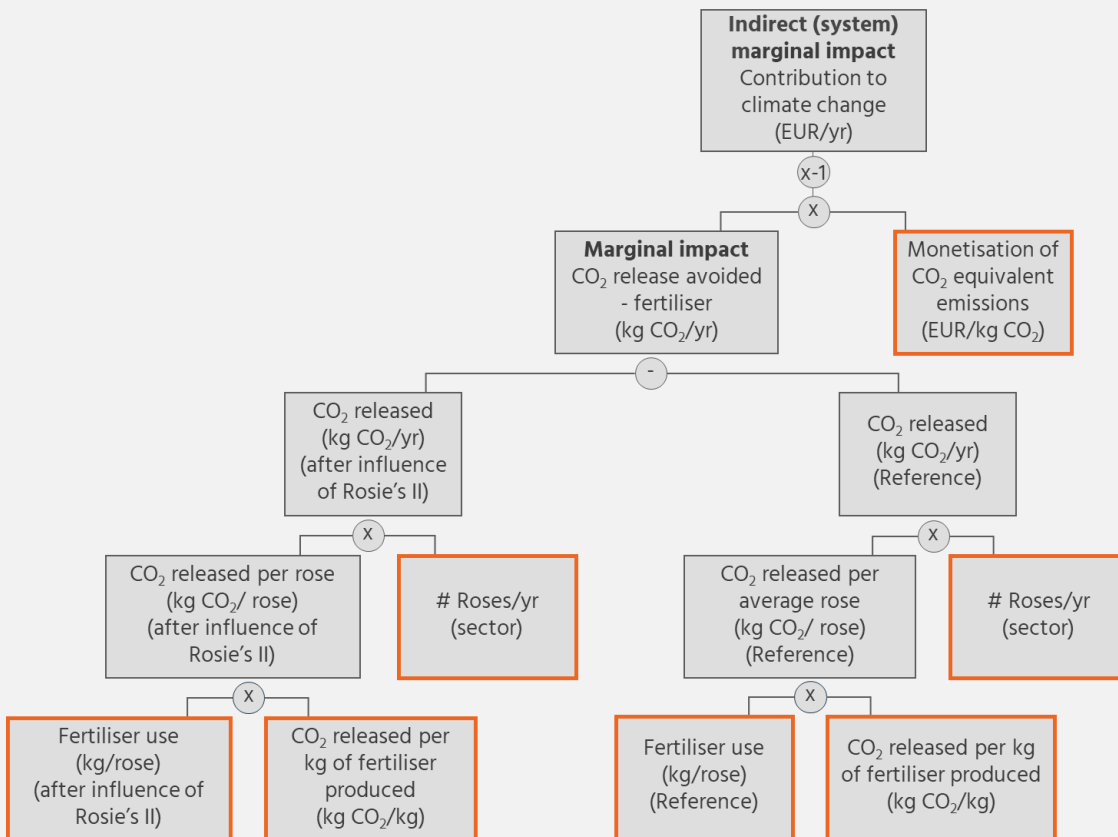
Fertiliser-use and the climate change impact thereof is a commonly studied impact, so CO₂ emitted per kilogram of fertiliser produced was an already existing datapoint that required no additional calculation.



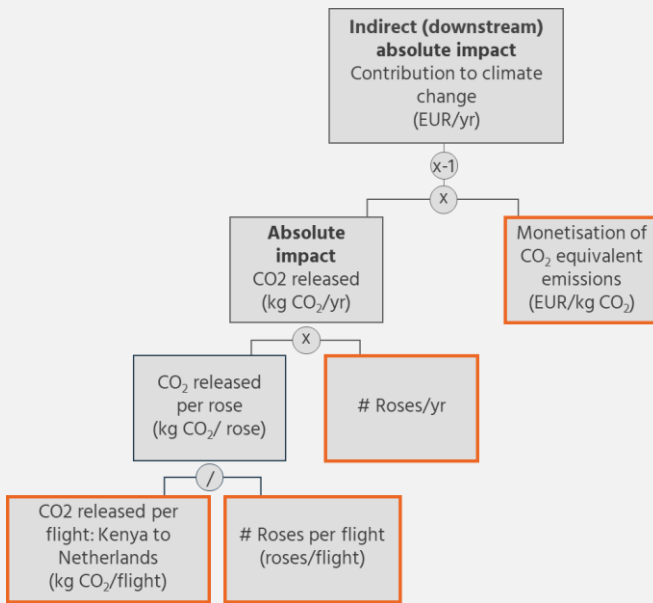
Marginal impact: indirect impact upstream.



Marginal impact: indirect impact in the system.



Absolute impact: indirect impact downstream.



In the process of drawing the impact pathways, it became clear that downstream the contribution to climate change had a marginal impact of 0. Therefore, a calculation tree need not be created. Rosie's also has no influence on this impact so there is no system impact for the downstream contribution to climate change.

Key considerations

It may not always be possible to obtain the exact data you want, so it may be necessary to manipulate the available data for it to be useful. For example, if data on the number of injuries per employee the previous year is needed but the only data available is five years old, the number of injuries per employee could perhaps be extrapolated from the older data based on current trends within the organisation and industry.

Decide on the length of a single period that impact will be calculated for. This is usually a year, but it could also be a month or a quarter. For example, if the period chosen is a year, then it is necessary to calculate the number of injuries per employee *per year*.



6.3.2 Collect the best available input data and projections

In this step, the user should fill in the input data identified in the previous chapter. This involves collecting data from the organisation, doing desk research, consulting experts and importantly, forecasting the way these impacts change over time.

Activities

1. Collect input data

This entails collecting data to fill in the data points identified in the calculation trees. Here, the starting point (or Year 1) data is gathered and reflects the current situation. It is preferable also to collect all the historical impact-relevant data that is available. A range of types of data may be required. They are listed below, along with a hierarchy of the best data sources to use for each type of data required.

2. Forecast how this data will change over time

Many of the data values are likely to change in the long run. After receiving funds, the organisation is likely to grow or implement changes. For example, if a company is planning to expand, the number of employees it hires will probably increase; or if a company implements a new safety strategy that makes the use of helmets in its factories mandatory, the number of injuries per employee is likely to decrease. So the user must forecast how the data inputs identified in the calculation trees are likely to change over time; this is very similar to, and is dependent on, financial forecasts.

The reference scenario is also unlikely to remain the same. General industry standards or improvements may occur and must be considered. Consulting reputable secondary data sources and experts can help with these estimates. Impact is calculated on a yearly basis and so these inputs should be forecast similarly.

If, in Step 1, multiple marginal reference scenarios were identified, then it is important to collect or estimate data and make projections for all of them.

Information sources

The choice of which data sources to use depends mainly on which type of data is required as input. For more suggestions see Appendix B, where additional useful data sources per impact are provided.

Table 3: Relevant data sources for each data type.

Types of data	Data sources
Organisation specific	Primary data from the organisation
Value-chain specific	Primary data from the relevant organisations, where possible; otherwise proxy sector data
Sector specific	Secondary data (academic studies, LCA literature, etc.)
Region/country specific	Secondary data
Transnational data	Secondary data



When reviewing available secondary data sources, it is important to consider the following two factors:

1. Validated vs non-validated sources

Preferred sources are those that represent the highest level of quality and reliability.

Examples of validated sources are official national or global statistics, peer-reviewed academic research articles or published lifecycle analyses.

Non-validated sources include reports or single studies by research organisations or producer organisations based on data collected in the same region as the production system being studied, as well as unpublished data or opinions of trusted experts.

2. Same/similar scope vs different scope

Preferred sources are those most relevant to the external impact assessment study and that are undertaken in the same geography, period and under similar conditions to the situation being studied.

The combination of these two factors generates a hierarchy, as shown in Figure 8.

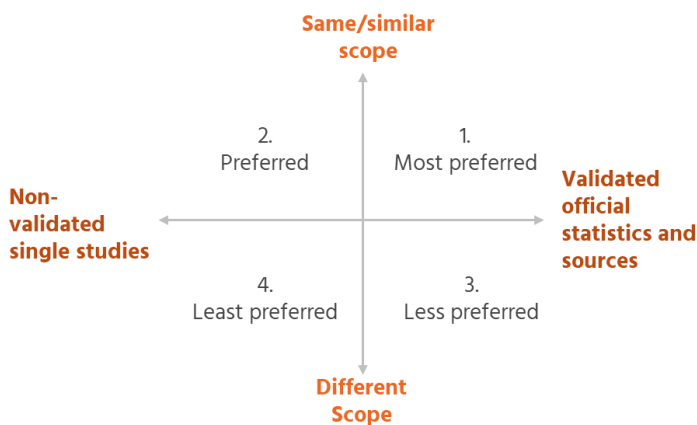


Figure 8: Data hierarchy for selection of sources.



Rosie’s Roses II

Example Box 12

Collect the best available input data and projections

This is the result of Activities 1 and 2.

Here the data inputs identified in the previous step are collected and are projected over the 20-year timeframe. Most of the data on Rosie’s II came from the organisation itself. The effects of its hydroponic monitoring system were well recorded during their implementation at Rosie’s I and so they are used here to predict their success. Data on the output of Rosie’s I was also provided by Rosie’s I and was checked by the accompanying financial due diligence report. Finding data on the reference activity involved consulting secondary data sources and up-to-date academic literature. A summary of the data and corresponding projections is found in the table below, which only shows the data required for the *contribution to climate change* impact. (Data for the other two impacts can be found in Appendix E). Conservativeness was applied throughout the data process in order to not overstate the impact of Rosie’s II.

Rosie’s data

Input data point	Starting value	Projection and source
# Roses/ha/ year	850,000	Hydroponics increases yield by a maximum of 39% and this comes into effect 5 years after implementation. The volume of roses increases steadily from industry average in Year 1 to 39% higher in Year 5 and then remains constant.
Size Rosie’s II (ha)	40	Obtained from Rosie’s II data
Kg fertiliser/rose	0.00094	Hydroponics reduce the use of fertiliser by 60% after the first year of implementation. Use of fertiliser therefore starts high but decreases after one year.
kg CO ₂ /kg fertiliser produced	1.18	This data was obtained via a secondary study and is predicted to remain the same for the foreseeable future. Therefore, this input remains constant throughout.
kg CO ₂ -eq/rose from Kenya to the Netherlands	0.14	This data was obtained via a secondary study and is predicted to remain the same for the foreseeable future. Therefore, this input remains constant throughout.



Key considerations

Data quality: estimates should only be used if no better data is available at reasonable cost. If data from different sources is combined, the user should take measures to guarantee data consistency.

Conservativeness: the user should make all assumptions, calculations, imputations, or estimates conservatively. This means that if during the measurement process there are various equally reasonable approaches, the approach will be chosen that has the least favourable impact. In other words, the chosen estimates or assumptions make negative impact relatively large (other sets of estimates and assumptions would reduce the impact) and positive impact relatively small (other sets of estimates and assumptions would increase the impact). Furthermore, approaches and assumptions are chosen that make the impact of the organisation in scope the most negative and the impact of the alternatives the most positive.

These choices are potential key drivers of the results and should provide input for the scenario analysis in Step 8.



6.3.3 Quantify and calculate non-valued impact over time for the impacts in scope

This step involves following the calculations laid out in the calculation trees up until the monetisation stage. This process should be done for each year of the decided upon timeframe.

Activities

1. Use a calculation tool to input data collected in the previous step

The user should use a calculation tool to input the calculation trees created previously (the data collected in the previous steps should be used as inputs).

For relatively simple calculations, spreadsheets such as Microsoft Excel and OpenOffice Calc suffice, but for longer and more complex calculations, specific software tools can be used, if available.

2. Combine marginal reference scenarios

If, in Step 1, multiple marginal reference scenarios were identified, then for each impact there will be multiple streams of non-valued marginal impact. These streams should then be combined linearly to create a single marginal impact stream for each impact that can then be applied in the next steps. The linear combination should be based on the user's best estimate of the likelihood of each scenario.

3. Assess the non-valued impact of each impact in scope for each year in the timeframe

More generally, this entails using the input data and following the steps laid out in the calculation tree. This should be done annually (unless a different time unit has been selected—see Chapter 5.1.4).



Rosie’s Roses II

Example Box 13

Quantify and calculate the non-valued impact over time for the impacts in scope

This is the result of Activities 1–3.

The calculation trees are used to set up a model in a calculation tool. The input data is used to generate absolute and marginal impact. The three marginal reference scenarios are now combined using a weighted average: this weighting is based on the likelihood of each scenario. A slow trend toward sustainability is estimated to be more likely than the other two scenarios and so it is given the largest weighting. Then, using the calculation tool, the non-valued impact is calculated. The table below shows the results for the climate change impact. Note that negative numbers represent avoided emissions.

Climate Change impact streams

Non-valued (in kg CO2-eq/year)		2021	2022	... 2030	... 2040+
Indirect: upstream	Absolute	200,000	<10,000	<10,000	<10,000
Indirect: upstream	Marginal	-	-200,000	-200,000	-40,000
Indirect: downstream	Absolute	4,700,000	5,200,000	6,500,000	6,500,000
Indirect: system	Marginal	-	-	-200,000	-1,400,000



6.4 Step 6: Value impact

In the previous step, impact is expressed in the customary unit of each impact, some of these may already be monetary. The goal of this step is to express all impacts assessed as part of the impact forecast assessment in a single common monetary unit. This is an important step because it allows for aggregation and comparison of impacts of many different types. Without it, it is difficult to compare the magnitude or severity of different environmental, social, human and financial impacts (for more information on valuation and techniques, see Appendix D).

Main result from this step

- All assessed impacts are expressed in a common monetary unit

Monetisation factors are in general quite complex to calculate and so, where possible, it is best to refer to commonly used monetisation factors or commonly used methods for calculating a monetisation factor. Only calculate your own factor if there are no suitable sources available.

Activities

1. Use a directly available monetisation factor from a reputable source (see, for example, the monetisation factors developed by True Price (True Price, 2020)).

If no monetisation factors are available, then:

1. Select monetisation paradigm and technique

Common techniques for impact monetisation can be categorised as either an ‘abatement-cost paradigm’ or a ‘cardinal utility paradigm’.

- Abatement-cost-based monetisation includes monetisation based on the costs of preventing an impact or on the costs of restoration to the previous state.
 - Cardinal utility approaches estimate the monetary equivalent of the welfare or wellbeing effects. When possible, cardinal utility approaches usually use market prices as a reflection of goods that have a market price. For goods that do not have a market price, stated and revealed preference techniques are used to directly or indirectly elicit or estimate the value of a good to individuals.
2. Create your own monetisation factor based on chosen technique



3. Ensure that all impacts are expressed in the same currency and within the same base year¹⁸

This can be achieved by using exchange rates and inflation rates, which is important for consistency and comparability across multiple years. Preferably, there should be consistency in the paradigm used to monetise the different impacts.

Glossary

A **valued impact** is an impact expressed in a quantitative unit that reflects the normative desirability of an impact from the perspective of a stakeholder. In the context of this Guide, valuation refers to expression in monetised form.

Impact monetisation is the process of translating an impact that is expressed in a non-monetary unit into an impact that is expressed in a monetary unit.

¹⁸ Using the same monetisation factor for every year means that all impact streams are measured at the same price level. For example, using monetisation factors expressed in year 0 euros for all years, will result in year 5 impact being expressed in year 0 euros. Similarly to financial flow calculations, if real impact streams are calculated excluding inflation, then the discount rate used should be the real discount rate, i.e. one that does contain the effect of expected inflation (choice of discount rate is relevant for Step 7). If monetisation factors are instead inflated to produce nominal impact flows, a nominal discount rate should be used in Step 7.



Rosie’s Roses II

Example Box 14

Impact valuation

This is the result of Activities 1–3.

Here all the relevant impacts can be monetised. All monetisation factors were first converted or inflated as needed, in order to be expressed in 2020 euros. Thus, all monetised impact values are expressed in 2020 euros. This example shows the monetisation of *contribution to climate change*.

Contribution to climate change:

Monetisation factor for contribution to climate change EUR/ kg CO₂-eq 0.152

This value expresses the abatement cost for reducing greenhouse gas emissions to meet the 2 degrees policy target set by the Paris Agreement. It is based on a meta-study of 62 marginal abatement cost estimates (Kuik, Brande, & Tol, 2009). This value is available in the open-source Monetisation factors for True Pricing (True Price, 2020).

Climate Change impact streams

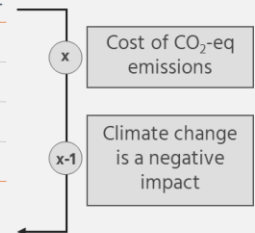
Non-valued (in kg CO₂-eq/year)

		2021	2022	... 2030	... 2040+
Indirect: upstream	Absolute	200,000	<10,000	<10,000	<10,000
Indirect: upstream	Marginal	-	-200,000	-200,000	-40,000
Indirect: downstream	Absolute	4,700,000	5,200,000	6,500,000	6,500,000
Indirect: system	Marginal	-	-	-200,000	-1,400,000

Monetised (in EUR, price level 2020)

		2021	2022	... 2030	... 2040+
Indirect: upstream	Absolute	-30,000	>-1000	>-1000	>-1000
Indirect: upstream	Marginal	-	30,000	30,000	10,000
Indirect: downstream	Absolute	-700,000	-800,000	-1,000,000	-1,000,000
Indirect: system	Marginal	-	-	30,000	200,000

	2021	2022	... 2030	... 2040+
Indirect: upstream Absolute	200,000	<10,000	<10,000	<10,000
Indirect: upstream Marginal	-	-200,000	-200,000	-40,000
Indirect: downstream Absolute	4,700,000	5,200,000	6,500,000	6,500,000
Indirect: system Marginal	-	-	-200,000	-1,400,000
Indirect: upstream Absolute	-30,000	>-1000	>-1000	>-1000
Indirect: upstream Marginal	-	30,000	30,000	10,000
Indirect: downstream Absolute	-700,000	-800,000	-1,000,000	-1,000,000
Indirect: system Marginal	-	-	30,000	200,000



6.5 Step 7: Aggregate impact

In the previous step, the marginal and absolute impact is calculated for every impact in scope and for every period. With so many values it can be difficult to make comparisons between different organisations and opportunities. Therefore, in this step the various values are combined into useful metrics for comparison.

Main result from this step

- Impacts are aggregated and expressed as a few key values

Activities

1. Apply a survival rate

As with financial projections, the probability that the organisation does not survive to the following year must be considered. The same survival rate that is selected for financial projections should be applied here to all impact projections.

2. Discount and calculate terminal value

This is done using the same methods used in financial projections and models, although the discount rate applied here is often different from that used in financial models (this Guide suggests impact should be assessed from a risk-neutral perspective and time should be discounted as little as possible¹⁹). When choosing a discount rate, users can incorporate their own normative time and risk preferences. As with the data collection, it is important to be conservative in your assumptions: for example, negative impacts should not be underestimated by using a large discount rate. The Dutch Social cost-benefit analysis guidance recommends, for example, a relatively low discount rate of 3% (MKBA, n.d.).²⁰

The choice of discount rate should also be consistent with the incorporation of inflation into the impact streams. If all impact is expressed at a common price level (using a common monetisation factor throughout the impact stream projection), then a real discount rate should be chosen, which excludes inflation. This usually allows for an easier comparison of yearly changes in impacts relating to the activities of the organisation. However, if monetisation factors are adjusted for inflation, so that an impact in a given period is calculated in the price level of the same period (e.g. an impact in 2022 is calculated in 2022 euros), then a nominal discount rate, which incorporates expected inflation, should be used.

3. Calculate NPV for each impact in scope

As with financial projections, sum the yearly aggregate impact streams and the terminal value to produce an NPV for each impact in scope.

¹⁹ Given that there are many impact investors and philanthropists, an investment or grant that can lead to between 0 and 100 megaton reduction in CO₂ emissions with equal probability is not less valuable than one that always leads to a 50-megaton reduction. In other words, if one cares about the total impact on the world, it is not necessary to diversify at the level of a single investor or philanthropist.

²⁰ In practice, a small but non-zero discount rate can reflect a number of considerations: success rate, increasing uncertainty in the future (in particular on the downside) and the fact that most people tend to be risk averse. Theoretically, all these things can be modelled separately, but in practice it is cumbersome to do so.



4. Combine to create preferred metrics

At this stage, the user chooses the best way to represent the findings, based on how they want to steer and make funding decisions:

- Net impact: this is the sum of all the impacts. Calculating net impact will result in the following six values: three for *absolute impact* (direct impact; indirect impact—value chain; indirect impact—system) and three for *marginal impact* (direct impact; indirect impact—value chain; indirect impact—system) (see Figure 9, and refer to Appendix D for more details).

Net impact should be interpreted with caution, since it can hide significant negative impacts. For this reason, it is also important to look at the negative impact alone (see Example Box 15). It is important to note that these six values represent different things and do not use the same scale, so they cannot simply be added together to produce an overall impact.

- Negative impact: this is the sum of all the negative impacts (impacts that have a negative absolute value) and will result in the six values (as in the case above).
- Impact per Capital or stakeholder: depending on the purpose of the report, the impacts can be grouped per Capital (such as Social or Human) or per their influence on a stakeholder (for example, employees). This is especially useful for steering, future monitoring of impact and evaluating a ToC.

		Type of reference scenario	
		Absolute impact	Marginal impact
Activity by organisation in scope or not	Direct impact	Direct absolute impact	Direct marginal impact
	Indirect impact Value chain	Indirect (value chain) absolute impact	Indirect (value chain) marginal impact
	Indirect impact System	Indirect (system) absolute impact	Indirect (system) marginal impact

Figure 9: Different types of impact.

Glossary

Net Present Value (NPV) is the difference between the present value of cash inflows (or impact streams) and the present value of cash outflows over a specified timeframe.



Rosie’s Roses II

Example Box 15

Aggregation

This is the result of Activities 1–4.

A survival rate and discount rate are applied to all impacts. A survival rate of 98% is chosen in alignment with the Empower Impact fund protocol. A 3% real discount rate is used to calculate the NPV of all the impact flows. The impact results are then combined into twelve values as shown below (some equal zero, as there are no impact pathways that refer to those types of impact).

Impact on society of the organisation/project (in thousand EUR, price level 2020) - Survival rate: 98%, NPV is calculated with an 3% real discount rate

Impact	Absolute impact			Marginal impact		
	Direct impact	Indirect impact: value chain	Indirect impact: system	Direct impact	Indirect impact: value chain	Indirect impact: system
Net impact	9	-20	-	54	<1	120
Negative impact	-41	-20	-	66	<1	99

Note that if an organisation creates smaller negative impacts than in the reference scenario (i.e. it produces more sustainably), this gives a positive marginal impact. This explains the positive number in the row of negative impacts.



6.6 Step 8: Assess sensitivity and uncertainty

The goal of this step is to offer an indication of the uncertainty of the impact streams and to provide a range of likely values for each result calculated in the previous step. This is, for the most part, similar to the sensitivity analysis many investors already do for financial projections because, if business plans do not materialise, neither will the impact.

Main results of this step

- A list of key impact drivers
- A scenario or sensitivity analysis based on each of the key drivers
- An overall high and low estimate for each of the results

6.6.1 Identify key drivers

The user should determine which of the data inputs or assumptions made during the assessment have the largest influence on the results—in other words, what are the main drivers of the result or what are the largest risk factors to achieving the predicted impact? These risks include those that are present for any financial investment, those surrounding the survival, growth and revenue of the organisation, and those assumptions surrounding the success in terms of impact specifically (both direct and indirect). To get an understanding of the levels of accumulated uncertainty, the assumptions and choices made, as well as risks, should all be considered.

Activities

1. Generate a list of potential key drivers

This list should include data inputs to the model, as well as other assumptions such as survival and growth rates. The drivers are usually identified by looking critically at the models and then asking how the results could be different. It is often useful to have a second pair of eyes review the selection of drivers.

2. Produce a range of likely values these key drivers could take

For example, if the survival rate is estimated at 95%, other likely values might be 90% and 100%. These estimates should be made after consulting existing literature and data.

The range of values need not be symmetrical; if conservative estimates have been made throughout the assessment, it is possible that the key driver value used is on the lower end of likely values it could take, for example.

3. Vary these key drivers in the model based on their likely range

The user should change the input data one at a time to reflect their minimum and maximum values estimated in the previous activity. The user should then record the new results (as calculated in the previous step, Chapter 5.5) that are generated as a result of the new input value.

4. Select the key drivers

The drivers that lead to the largest variation in results are identified as the key drivers.



Rosie’s Roses II

Example Box 16

Identify key drivers

This is the result of Activities 1–4.

Driver	Estimated value	Likely range	Included in scenario analysis (✓ / -)
Survival rate	98%	(97%; 100%)	✓
Market share	0.85%	(0.85%; 0.95%)	✓
Profit margin compared to average Kenyan rose producers	10% higher	(0%; 22%)	✓
Rosie’s II average sustainability improvement—how much better is Rosie’s II than the sector	75%	(55%; 100%)	✓
Average rate of sector improvement	2%	(0.5%; 4%)	✓
Production capacity: extra capacity from hydroponic systems	100%	(80%; 120%)	✓
Average cost of harassment	€23,000 / worker	(€10,000; €30,000)	✓
Percentage of sector influenced by Rosie’s II	7% of global market (40% of Kenyan rose growers)	(0%; 10%)	✓
Percentage of roses sold	90%	(80%; 100%)	-
Number of years before sector (reference activity) starts to improve	5 years	(2; 8)	-
Monetisation factor for contribution to climate change	€0.152/kg CO ₂ -eq	(€0.02; €0.3)	-

Each of these key drivers are substituted or varied, one by one, with the values indicated above. The drivers that bring about the largest change in the financial or impact returns are identified as the key drivers and these drivers were included in the full scenario analysis.



6.6.2 Scenario analysis

In this Chapter, the results generated when the key drivers were varied are recorded to create a scenario analysis based on each key driver and an overall high and low estimate.

Activities

1. Record the results obtained when the key drivers were varied individually to produce a scenario analysis.
2. Generate an overall high and low estimate by substituting all the key drivers at once to create an absolute maximum and minimum bound for the results generated in the previous step (Chapter 6.5).



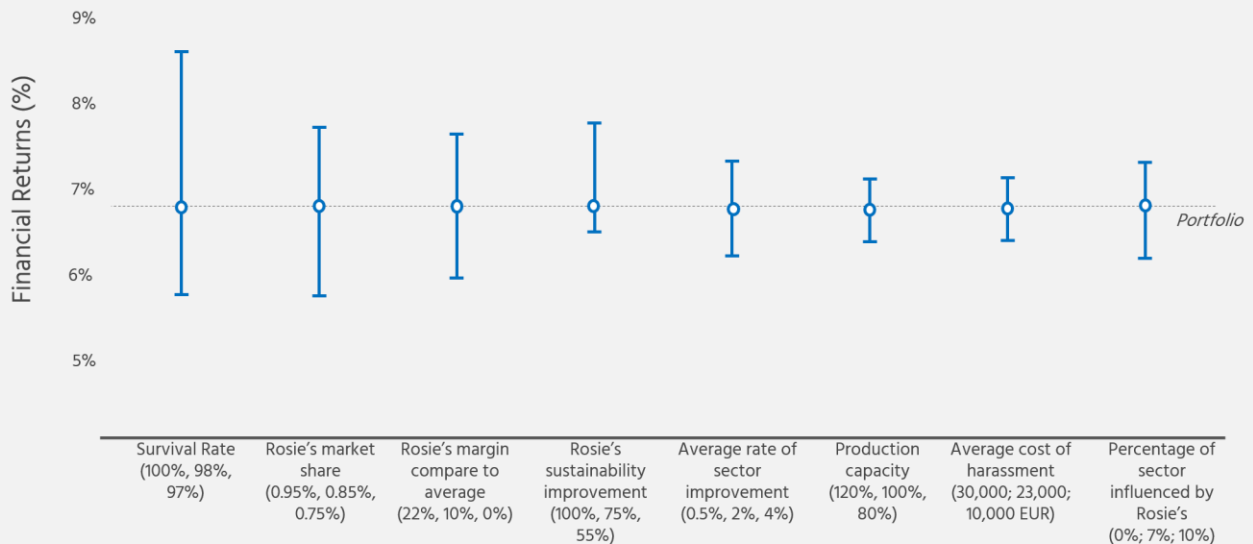
Rosie’s Roses II

Example Box 17

Scenario analysis

This is the result of Activities 1 and 2.

From a longer list of drivers, eight were identified as key drivers, as their variation bring about the largest changes in the results. The key drivers were varied individually and the results recorded. It was decided to record the financial fluctuations in the IRR metric because this is common practice at Empower Impact fund.



Similarly, a scenario analysis was conducted on the impact projections and they were recorded in two ways. Firstly, an overall high and low estimate for all twelve values is shown in Example Box 15.

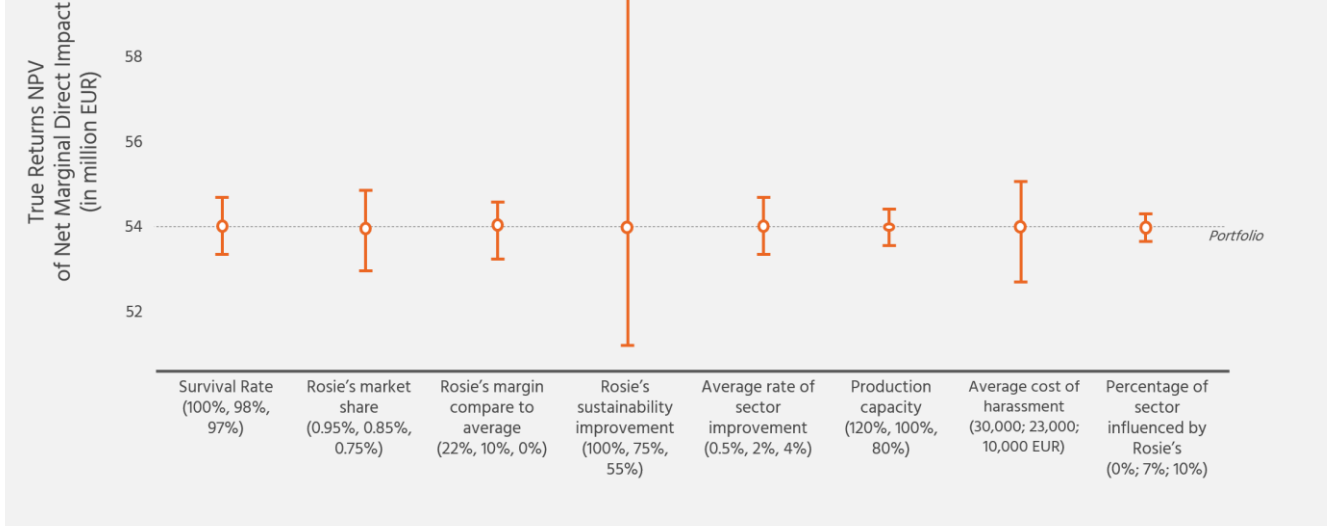
Impact on society of the organisation/project (in thousand EUR, price level 2020) - Survival rate: 98%, NPV is calculated with an 3% real discount rate.

	Absolute impact			Marginal impact		
	Direct impact	Indirect impact: value chain	Indirect impact: system	Direct impact	Indirect impact: value chain	Indirect impact: system
Net impact	9	-20	0	54	<1	120
High	57	-18	-	96	<1	232
Low	-1	-26	-	51	<1	33
Negative impact	-41	-20	0	66	<1	99
High	-8	-18	-	107	<1	200
Low	-42	-26	-	63	<1	25

The high (and low) scenarios are defined by a set of key drivers which generate the highest (or lowest) overall results, even though they might not generate the maximum(or minimum) for every result in the above table.



Secondly, a scenario analysis (exactly as was done for the financial results) was conducted for the marginal direct impact, which is of particular interest to a member of Empower Impact fund. The fluctuations were recorded using the NPV. Similar graphs can be made for all values.



7. Stage 3: Application stage: Reporting

In this stage, the results generated in the previous stage are interpreted and tested; a report is then generated for internal disclosure of results. Given the scope of this Guide, the application stage is limited to reporting (and not wider impact management).

Objectives

- Determine the soundness of the results by having them tested and verified
- Report the results in a standardised format so that they can be used in decision-making

Steps

Step 9: Interpret and test the results

Step 10: Report the results

Each step is explained in the sub-chapters that follow.

7.1 Step 9: Interpret and validate results

It is important the user can justify the reported results. Therefore, the goal of this step is to validate the soundness of the results. To do this, the results should be validated by other relevant parties, where possible. This could be another analyst within the same office, or, preferably, an external expert.

Main result from this step

- Justifiable results that have been validated by a second pair of eyes

Activities

1. Have the calculations and subsequent results checked by a second person

Where possible, key data points and underlying assumptions should also be validated by external experts.

2. Validate the credibility of outcomes by performing various 'common-sense' checks

If the results are significantly different to what was anticipated, the user must be able to explain why. The user should ask themselves and others questions such as:

- Are results in the order of magnitude that was expected?
- Is the impact that the organisation itself considers most important the one that actually emerges as the largest in the assessment?
- Is one impact much larger than the others? If so, is this in line with what was expected?
- Is the total impact created of the same order of magnitude as that of other funding opportunities of a similar size? If it is significantly different, why?

3. Interpretation of the results

The 'recipe' above has provided various impact indicators that the user should interpret properly to guide their investment process. This includes direct absolute impact and direct marginal impact. But if there are



specific impacts that are particularly important in the worldview of the investor, these are also part of the decision-making process.

How to interpret these points will depend on the users' decision criteria for funding and their priorities, ToC or ideas about responsibility. The user may choose to compare two funding opportunities directly, selecting the one with the highest net impact or lowest negative impact. Alternatively, they may use a benchmark, whereby if the net impact exceeds that level, the funding progresses. However, it is unlikely that a funding opportunity will be better than another (or exceed the benchmark) in all the measures. Therefore, the user will usually have to decide how to weight the various measures. This guide does not provide specific guidance on this because funders often already have specific preferences, but some information is provided below on the measures that might aid decision-making (see Appendix D for more details).

- Absolute vs marginal impact: both measures are useful for understanding the total impact of an organisation and both should be considered.

However, marginal impact is of particular interest if the user is focused on the performance of the organisation in relation to the likely alternative or is focused on improving sectors that traditionally have negative externalities.

Absolute impact is a better measure for understanding the impact of the organisation in isolation.

- Direct vs value chain vs system impact: for many organisations, their own operations (direct impact) are not where the most damaging impact occurs: the suppliers that the organisations supports (value chain) may be responsible for some of the larger impacts, and so it is important to consider both. System impact—which occurs beyond the value chain—can be very large, and therefore a funder that is looking to produce widespread change and impact should consider system impact seriously.

However, it should also be noted that while this impact is often very large, it is more uncertain than others, and it depends on the adoption of ideas or practices by other parties, which is difficult to predict.



Rosie’s Roses II

Example Box 18

Interpret and validate the results

Activities 1 and 2

A number of key assumptions, including details about the hydroponic systems, were verified by Rosie’s I. A validation of the calculations and results were performed by a second analyst at Empower Impact fund.

Activity 3

Impact on society of the organisation/project (in thousand EUR, price level 2020) - Survival rate: 98%, NPV is calculated with an 3% real discount rate

Impact	Absolute impact			Marginal impact		
	Direct impact	Indirect impact: value chain	Indirect impact: system	Direct impact	Indirect impact: value chain	Indirect impact: system
Net impact	9	-20	-	54	<1	120
Negative impact	-41	-20	-	66	<1	99

Empower Impact fund’s interpretation of the analysis of Rosie’s II were as follows.

Overall, Rosie’s II itself has a positive impact. Its direct absolute impact amounts to EUR 9 million, calculated as balance of: benefits amounting to about EUR 50 million (e.g. wages they provide to their employees and the taxes that they pay) versus a sizeable negative impact of about EUR 41 million, arising from the negative environmental (water use) and social (harassment) externalities.

But Rosie’s II is a substantial improvement from the likely alternative, as evidenced by the large positive marginal impact. Rosie’s II creates impact of EUR 54 million by replacing standard roses by more sustainable ones.

Rosie’s II also has a significantly negative value chain impact, caused by CO₂ emissions in its value chain, both upstream (with the production of fertiliser) and downstream (air transportation of their roses to overseas markets). Rosie’s II has not yet been able to have a large influence on its value chain and so its marginal value chain impact is relatively low, i.e. less than EUR 1 million. Its expected system impact is very large, approximately EUR 120 million, which is because as leaders in the sector (particularly in the region) it could have a large influencing impact outside of its own value chain.

Empower Impact fund has a particular focus on transforming sectors that are important to local communities but are unsustainable. Thus, marginal impact is considered of particular importance. Rosie’s II has a large marginal impact and has the potential for a wide societal impact, and so it is judged to be an interesting investment.



7.2 Step 10: Report results

The goal of this step is to compile a forward-looking impact statement in which the results are disclosed in a standardised and consistent format that aids in decision-making.

Main result of this step

- A forward-looking impact statement which includes the key metrics obtained in the previous stage and can aid in decision-making

Activities

1. Produce a forward-looking impact statement

The exact content of this report may differ per user as it should align with other internal due diligence reports. The impact statement should include financial (in the case of an investment) and impact projections, as well a sensitivity analysis and the key risk factors. It should also include a decision metric that will allow for easy comparison between various funding opportunities. The most important criterion of this impact statement is that it includes enough information to enable an investment committee (or a similar body) to make a decision.

After the completion of all the steps, the user will have a forward-looking impact statement with useful metrics that they can use to decide on the investment. If they decide to pursue the funding opportunity, the user will need to regularly monitor it.



Rosie's Roses II

Example Box 19

Reporting of the results

This is the result of all Stage 3 activities.

In keeping with the methods of Empower Impact fund, the report created for Rosie's comprises two parts. The first is a brief one-page overview of the main results of the impact analysis, as shown below. This is combined with the forward-looking screening performed at the start of this assessment. The combination of these documents is designed to enable easy comparison between investment opportunities and decision-making. The second is a longer report that offers more in-depth information and insight on the company and industry, as well as a justification for decisions made in the analysis stage.

Impact forecast assessment: comparable overview sheet

Aggregate financial metrics (in thousand EUR, price level 2020) - assuming an 8% real discount rate and a 98% survival rate

Organisation/project	Expected	Low	High
Valuation post-money	-1,300	-2,100	400
IRR	6.8%	6.0%	8.4%

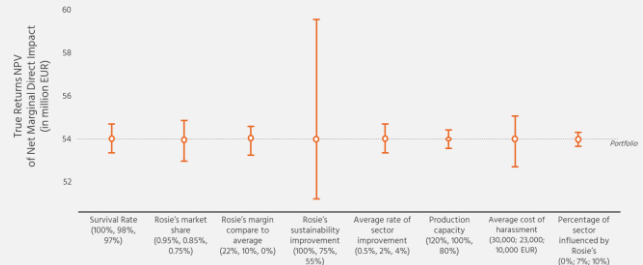
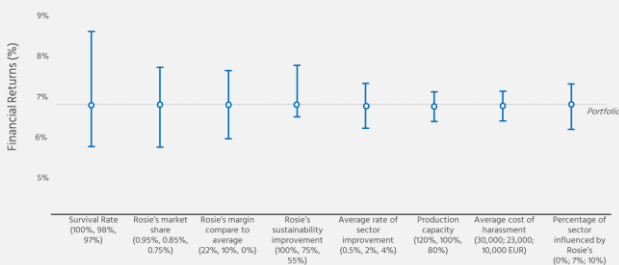
Financial flows organisation/project (in thousand EUR, price level 2020) - Survival rate: 98%, NPV is calculated with an 8% real discount rate.

Financial cash flows	NPV	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2040 (/yr)	2040+ (/yr)	terminal growth
Investment cash flow		-11,500													
FCF of operations	-1,300		700	800	900	900	1,000	900	900	900	900	900	700	600	0%

Impact on society of the organisation/project (in thousand EUR, price level 2020) - Survival rate: 98%, NPV is calculated with an 3% real discount rate.

	Absolute impact			Marginal impact		
	Direct impact	Indirect impact: value chain	Indirect impact: system	Direct impact	Indirect impact: value chain	Indirect impact: system
Net impact	9	-20	0	54	<1	120
High	57	-18	-	96	<1	232
Low	-1	-26	-	51	<1	33
Negative impact	-41	-20	0	66	<1	99
High	-8	-18	-	107	<1	200
Low	-42	-26	-	63	<1	25

The high (and low) scenarios are defined by a set of key drivers which generate the highest (or lowest) overall results, even though they might not generate the maximum(or minimum) for every result in the above table.



8. Concluding remarks

Making a positive impact in the world is not easy. Effectively investing or donating money to reduce negative impacts and increase positive ones is difficult. Impact information can help with this. However, such information on funding opportunities is currently largely lacking.

This step-by-step Guide shows that it is possible to obtain useful metrics to help funders make well-informed funding decisions and provides a straightforward and rigorous approach to do so. The metrics that result from the impact assessment provide information about the organisation itself (direct absolute impact), their value chain (system impacts) or their impact in comparison to the likely alternatives (marginal impact). This information provides an integrated and holistic perspective of an organisation's impact, including the way it affects a variety of Capitals: Financial, Manufactured, Intellectual, Social, Human and Natural.

Nonetheless, this approach is certainly more effort-intensive than making funding decisions based on gut feelings, qualitative methods or heuristic quantitative methods—so why implement it?

Good *intentions* of impact investors and philanthropists, while positive, are not enough to make the world a better place. The organisations they invest in may not be effective in creating a positive impact, or there may be several unintended consequences of the organisation's activities. Furthermore, the difference between various opportunities can be large. Assessing the expected impact of opportunities can help ensure that the money invested or donated actually creates positive impact, without creating more negative impact, and that funds can be given to the most impactful opportunities.

Philanthropy and impact investing have the potential to create even greater amounts of wellbeing: improve the lives of more people and protect the planet, and thus people, from further harm. This Guide can help funders to make this happen by enabling them to make more informed decisions.



Bibliography

- ABN AMRO. (2019). *ABN AMRO's 2018 Impact Report*. ABN AMRO. Retrieved August 02, 2019, from https://www.abnamro.com/en/images/Documents/010_About_ABN_AMRO/Annual_Report/2018/ABN_AMRO_Impact_Report_2018.pdf
- Accounting for Sustainability. (2012). *Future proofed decision making*. Retrieved 04 20, 2020, from <https://www.accountingforsustainability.org/content/dam/a4s/corporate/home/KnowledgeHub/Future%20proofed%20decision%20making.pdf.downloadasset.pdf>
- Addy, C., Chorenge, M., Collins, M., & Etzel, M. (2019). Calculating the Value of Impact Investing. *Harvard Business Review*, 102-109.
- Analytics, B. (2020, 04 17). *Giirs fund rating methodology*. Retrieved 2020, from B Analytics: <https://b-analytics.net/content/giirs-fund-rating-methodology>
- Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal*, 464-477. Retrieved August 19, 2019, from https://www.jstor.org/stable/2234133?seq=1#page_scan_tab_contents
- Ayuso-Mateos, J. L. (2000). *Global burden of post-traumatic stress disorder*. World Health Organization (WHO). Retrieved August 02, 2019, from https://www.who.int/healthinfo/statistics/bod_posttraumaticstressdisorder.pdf
- B Impact Assessment. (n.d.a). *Assess Your Impact*. Retrieved juni 16, 2019, from B Impact Assessment: <https://bimpactassessment.net/how-it-works/assess-your-impact>
- B Impact Assessment. (n.d.b). *Compare Your Impact*. Retrieved juni 16, 2016, from B Impact Assessment: <https://bimpactassessment.net/how-it-works/compare-your-impact#see-sample-report>
- B Impact Assessment. (n.d.c). *Here's how it works*. Retrieved juni 14, 2019, from B Impact Assessment: <https://bimpactassessment.net/>
- B Impact Assessment. (n.d.d). *Improve Your Impact*. Retrieved juni 16, 2019, from B Impact Assessment: <https://bimpactassessment.net/how-it-works/improve-your-impact>
- Bill & Melinda Gates Foundation. (2010). *Actionable Measurement*. Bill & Melinda Gates Foundation. Retrieved August 02, 2019, from <https://docs.gatesfoundation.org/documents/guide-to-actionable-measurement.pdf>
- Bill & Melinda Gates Foundation. (n.d.). *How we work: evaluation policy*. Retrieved juni 14, 2019, from Bill & Melinda Gates Foundation: <https://www.gatesfoundation.org/How-We-Work/General-Information/Evaluation-Policy>
- Bowling, N., & Beehr, T. A. (2006). Workplace Harassment from the Victim's Perspective: A Theoretical Model and Meta-Analysis. *Journal of Applied Psychology*, 998-1012. Retrieved August 01, 2019, from



https://www.researchgate.net/publication/6835933_Workplace_Harassment_from_the_Victim's_Perspective_A_Theoretical_Model_and_Meta-Analysis

Bruyn, S. d., Korteland, M., Markowska, A., Davidson, M., Jong, F. d., Bles, M., & Sevenster, M. (2010). *Shadow Prices Handbook*. Delft: CE Delft. Retrieved August 01, 2019, from

<https://www.ce.nl/en/publications/1032/shadow-prices-handbook-valuation-and-weighting-of-emissions-and-environmental-impacts>

CDP. (2020). *CDP Data*. Retrieved 04 17, 2020, from <https://www.cdp.net/en/data>

Damodaran, A. (n.d.). *Valuation tools*. Retrieved August 02, 2019, from Damodaran:

http://pages.stern.nyu.edu/~adamodar/New_Home_Page/valuationtools.html

Department for Business, energy & Industrial Strategy UK Government. (2019). *Government emission conversion factors for greenhouse gas company reporting*. Retrieved from GOV.UK:

<https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

Dolan, P., & Fujwara, D. (2012). *Valuing Adult Learning: Comparing Wellbeing Valuation to Contingent Valuation*. Retrieved August 01, 2019, from United Kingdom Government:

<https://www.gov.uk/government/publications/valuing-adult-learning-comparing-wellbeing-valuation-and-contingent-valuation>

EcoCost. (n.d.). Retrieved August 02, 2019, from EcoCost :

https://www.ecocost.net/mec?btnPageTurn=HOME_01&userLocale=en-US,en%3bq=0.9

EORA. (2018). *EORA*. Retrieved from EORA: <https://worldmrio.com/>

EPA. (2017, January). *The Social Cost of Carbon*. Retrieved from United States Environmental Protection Agency (EPA): https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon_.html

EPVA. (n.d.). *European Venture Philanthropy Association*. Retrieved from European Venture Philanthropy Association : <https://evpa.eu.com/>

Exiobase. (2015). *Exiobase Data Download*. Retrieved from Exiobase: <https://www.exiobase.eu/index.php/data-download/exiobase3mon>

FAO. (2017). *Food and Agriculture Organization of the United Nations*. Retrieved from AQUASTAT:

<http://www.fao.org/nr/water/aquastat/data/query/index.html?lang=en>

FAO. (2020). *Gender and Land Rights Database*. Retrieved 04 17, 2020, from <http://www.fao.org/gender-landrights-database/data-map/statistics/en/>

Fujiwara, D. (2013). *A general method for valuing non-market goods using wellbeing data: three-stage wellbeing valuation*. Retrieved January 01, 2019, from London School of Economics and Political Science:

<http://eprints.lse.ac.uk/51577/>

GHG protocol. (n.d). *Life Cycle Databases*. Retrieved from Greenhouse Gas protocol: <https://ghgprotocol.org/life-cycle-databases>



- GIIN. (n.d.). *The Navigating Impact Project*. Retrieved from <https://navigatingimpact.thegiin.org/>
- GiveWell. (n.d.). *Process for Identifying Top Charities*. Retrieved juni 16, 2019, from GiveWell:
https://www.givewell.org/how-we-work/process#Our_process_for_answering_key_questions
- Global Reporting Initiative. (2019). *CONSOLIDATED SET OF GRI SUSTAINABILITY REPORTING STANDARDS*. Retrieved 03 12, 2020, from <https://www.globalreporting.org/standards/gri-standards-download-center/?g=938b71a4-a8f8-4691-851f-25044e75232c>
- Globio. (2019). *Globio*. Retrieved from Globio: <https://www.globio.info/home>
- GLWC. (n.d.). *Real World Strategies for Living Wage Implementation*. Retrieved from Global Living Wage Coalition:
<https://www.globallivingwage.org/implementation/>
- Halstead, J. (2018, 11). *Impact Investing Report*. Retrieved 10 21, 2019, from Founders Pledge :
<https://founderspledge.com/research/fp-impact-investing>
- Harvard Business School. (2020, 04 07). *Impact Weighted Accounts*. Retrieved from Harvard Business School:
<https://www.hbs.edu/impact-weighted-accounts/design-methodology/Pages/default.aspx>
- Hornsby, A., & Blumberg, G. (2013). *The Good Investor. A book of best impact practice*. Retrieved 03 27, 2020, from <https://www.philanthropy-impact.org/sites/default/files/downloads/thegoodinvestor.pdf>
- Huijbregts, M., Steinmann, Z., Elshout, P., Stam, G., Verones, F., Vieira, M., . . . Zelm, R. v. (2016). *ReCiPe 2016 v1.1: A harmonized life cycle impact assessment method at midpoint and endpoint level*. Retrieved August 01, 2019, from National Institute for Public Health and the Environment (RIVM):
<https://www.rivm.nl/documenten/recipe2016v11>
- Idemat. (2019). *The Model of the Eco-costs / Value Ratio (EVR)*. Retrieved from TUDelft Ecocostvalue :
<http://www.ecocostsvalue.com/EVR/model/theory/subject/5-data.html>
- IEA. (2016). *Key World Energy Statistics (KWES)*. Retrieved from IEA: <https://www.iea.org/statistics/kwes/>
- IIRC. (2013). *THE INTERNATIONAL*. The International Integrated Reporting Council (IIRC). Retrieved August 02, 2019, from <https://integratedreporting.org/resource/international-ir-framework/>
- ILO. (n.d.a). *Employment protection legislation database - EPLex*. Retrieved from ILO:
https://www.ilo.org/dyn/epllex/termmain.byCountry?p_lang=en
- ILO. (n.d.b). *Employment protection legislation database - EPLex*. Retrieved 04 07, 2020, from https://www.ilo.org/dyn/epllex/termmain.byCountry?p_lang=en
- ILO. (n.d.b). *NATLEX Labour Standards Elimination of child labour, protection of children and young persons*. Retrieved from International Labour Organization:
https://www.ilo.org/dyn/natlex/natlex4.listResults?p_lang=en&p_count=97125&p_classification=04&p_classcount=2300
- ILOSTAT. (n.d.). *ILOSTAT*. Retrieved from ILO: <https://ilostat.ilo.org/data/>



- IMF. (n.d). *Interest Rates*. Retrieved from IMF: www.imf.org/en/Data
- IMP. (2018). *A Guide to Classifying the Impact of an Investment*. Retrieved 04 06, 2020, from <https://29kjob3armds2g3gi4lq2sx1-wpengine.netdna-ssl.com/wp-content/uploads/A-Guide-to-Classifying-the-Impact-of-an-Investment-3.pdf>
- IMP. (n.d.a). *IMP Glossary*. Retrieved 03 27, 2020, from <https://impactmanagementproject.com/glossary/#a>
- IMP. (n.d.b). *Impact Management Project*. Retrieved from <https://impactmanagementproject.com/impact-management/impact-management-norms/>
- Impact Genome. (n.d). *IMPACT GENOME PROJECT®: CRACKING THE CODE ON SOCIAL IMPACT™*. Retrieved juni 16, 2019, from Impact Genome: <https://www.impactgenome.org>
- Impact Institute. (2019). *Framework for Impact Statements*. Retrieved August 02, 2019, from Impact Institute : <https://www.impactinstitute.com/framework-for-impact-statements/>
- Impact Institute. (2020). *Global Impact Database*. Retrieved from <https://www.impactinstitute.com/global-impact-database/>
- Impact Institute. (2020). *Integrated Profit & Loss Assessment Methodology (IAM): Core*. Retrieved 03 20, 2020, from <https://www.impactinstitute.com/ipl-assessment-methodology/>
- Inspiring Impact. (2019). Retrieved from Inspiring Impact: <https://www.inspiringimpact.org/>
- ISO. (2006). *ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework*. Retrieved 04 17, 2020, from <https://www.iso.org/standard/37456.html>
- Jacobs, S., Brahic, B., & Brahic, B. (2015). Sexual harassment in an east African agribusiness supply chain. *Economic and Labour Relations Review*. Retrieved August 01, 2019, from https://www.researchgate.net/publication/282052076_Sexual_harassment_in_an_east_African_agribusiness_supply_chain
- Koller, T., Goedhart, M., & Wessels, D. (2015). *McKinsey & Company's Valuation: Measuring and Managing the Value of Companies* (6th ed.). John Wiley & Sons.
- KPMG. (2017). *The road ahead: The KPMG Survey of Corporate Responsibility Reporting 2017*. KPMG. Retrieved August 02, 2019 , from <https://assets.kpmg/content/dam/kpmg/be/pdf/2017/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf>
- Kuik, O., Brande, B., & Tol, R. S. (2009). Marginal abatement costs of greenhouse gas emissions: A meta-analysis. *Energy Policy*, 37(4), 1395-1403. Retrieved 04 06, 2020, from <https://www.sciencedirect.com/science/article/abs/pii/S0301421508007295>
- MKBA. (n.d). *Disconteren / Discontovoet*. Retrieved 11 28, 2019, from <https://www.mkba-informatie.nl/mkba-basics/abc-van-de-mkba/disconteren-discontovoet/>
- NCC. (2016). *Natural Capital Protocol*. Natural Capital Coalition. Retrieved August 02, 2019 , from <https://naturalcapitalcoalition.org/natural-capital-protocol/>



- OECD. (2002). *Glossary of Key Terms in Evaluation and Results Based Management*. Retrieved 03 27, 2020, from <https://www.oecd.org/dac/evaluation/2754804.pdf>
- OECD. (2011). *OECD Guidelines for Multinational Enterprises*. OECD. Retrieved August 02, 2019, from <http://www.oecd.org/daf/inv/mne/48004323.pdf>
- OECD. (2012). *The Value of a Statistical Life: A Meta-Analysis*. Retrieved August 01, 2019, from OECD: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WPNEP\(2010\)9/FINAL&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV/EPOC/WPNEP(2010)9/FINAL&doclanguage=en)
- OECD. (2019). *Social Impact Investment 2019*. Organisation for Economic Co-operation and Development. Retrieved August 02, 2019, from <https://www.oecd.org/development/social-impact-investment-2019-9789264311299-en.htm>
- PWC. (n.d.). *PwC's Impact Explorer: A new tool for measuring and valuing your global impacts*. Retrieved juni 14, 2019, from PricewaterhouseCoopers: <https://www.pwc.co.uk/services/sustainability-climate-change/total-impact/impact-explorer.html>
- Raworth, K. (2017). *Donuteconomie: in zeven stappen naar een economie voor de 21e eeuw*. Amsterdam: Nieuw Amsterdam.
- RIVM. (2015). *Ziektelast in 2015*. Retrieved from Volksgezondheidzorg.info: <https://www.volksgezondheidzorg.info/bestanden/documenten/20180528dataziektelast2015ods>
- Rundgren, G. (2017, September 25). *Why true cost accounting is not a good concept for markets and public policy. Resilience*. Retrieved 04 20, 2020, from <https://www.resilience.org/stories/2017-09-25/why-true-cost-accounting-is-not-a-good-concept-for-markets-and-public-policy/>
- Schubert, S. (2018). *Psychology of Effective Altruism*. Retrieved August 19, 2019, from Effective Altruism: <https://www.effectivealtruism.org/articles/ea-global-2018-psychology-of-ea/>
- So, I., & Staskevicius, A. (2015). *Measuring the "impact" in impact investing*. Harvard Business School. Retrieved August 02, 2019, from <http://www.hbs.edu/socialenterprise/documents/measuringimpact.pdf>
- Social Hotspot Database. (n.d.). *Social Hotspot Database*. Retrieved from <https://www.socialhotspot.org/>
- Social Value International. (2015). *A Discussion Document on the Valuation of Social Outcomes*. Retrieved August 02, 2019, from <https://socialvalueint.org/social-value/standards-and-guidance/valuation-of-social-outcomes/>
- Social Value UK. (2012). *A guide to Social Return on Investment*. Retrieved August 02, 2019, from <http://www.socialvalueuk.org/resource/a-guide-to-social-return-on-investment-2012/>
- TCFD. (2017). *Recommendations of the Task Force on Climate-related Financial Disclosures*. Retrieved August 19, 2019, from <https://www.fsb-tcfd.org/publications/final-recommendations-report/#>



- TEEB. (2011). *The Economics of Ecosystems and Biodiversity in National and International Policy Making*. (P. t. Brink, Ed.) London and Washington: Earthscan. Retrieved August 01, 2019, from <http://www.teebweb.org/publication/teeb-in-national-and-international-policy-making/>
- The Economics of Ecosystems and Biodiversity (TEEB). (2018). *TEEB for Agriculture & Food: Scientific and Economic Foundations*. Geneva: UN Environment. Retrieved 04 20, 2020, from <http://teebweb.org/agrifood/scientific-and-economic-foundations-report/>
- The Rise Fund. (n.d.a). *Our Approach*. Retrieved juni 14, 2019, from The Rise Fund: <https://therisefund.com/>
- The Rise Fund. (n.d.b). *Measurement*. Retrieved 11 28, 2019, from <https://therisefund.com/measurement>,
- Tol, R. S. (2008). The Social Cost of Carbon: Trends, Outliers and Catastrophes. *Economics*. Retrieved August 01, 2019, from Economics : <http://www.economics-ejournal.org/economics/journalarticles/2008-25>
- Tony's Chocolonely. (2019). *onze missie*. Retrieved August 02, 2019, from Tonys Chocolonely: <https://tonyschocolonely.com/nl/nl/onze-missie>
- True Price & Hivos. (2015). *Creating shared value in the rose supply chain*. True Price. Retrieved August 02, 2019, from <https://trueprice.org/wp-content/uploads/2015/04/Hivos-Rose-LW-publication.pdf>
- True Price & Tony's Chocolonely. (2018). *The True Cost of Cocoa*. Retrieved August 02, 2019, from <https://trueprice.org/wp-content/uploads/2018/11/The-True-Price-of-Cocoa.-Progress-Tonys-Chocolonely-2018.pdf>
- True Price. (2016). *Bottom up methodology TEEB Animal husbandry*. Retrieved August 02, 2019, from <http://www.teebweb.org/wp-content/uploads/2017/08/Bottom-Up-Methodology-Report-True-Price.pdf>
- True Price. (2019). *A roadmap for true pricing: Vision paper*. Retrieved August 02, 2019 , from <https://trueprice.org/vision-paper-a-roadmap-for-true-pricing/>
- True Price. (2020). *Monetisation factors for true pricing*. Retrieved 03 27, 2020, from <https://trueprice.org/monetisation-factors-for-true-pricing/>
- True Price. (2020). *Monetisation factors for true pricing Version 2020.1*. Retrieved 03 27, 2020, from <https://trueprice.org/monetisation-factors-for-true-pricing/>
- True Price Foundation & Impact Economy Foundation. (2020). *Principles for True Pricing*. Retrieved from <https://trueprice.org/principles-for-true-pricing/>
- U.S. Department of Labour. (2017). *Bureau of International Labor Affairs*. Retrieved from U.S. Department of Labour: <https://www.dol.gov/agencies/ilab>
- UNHR. (2011). *Guiding Principles on Business and Human Rights*. Retrieved August 02, 2019, from https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
- Wage Indicator. (n.d). Retrieved from Wage Indicator: <https://wageindicator.org/salary>



- Water Footprint Network. (n.d). *WaterStat - water footprint statistics*. Retrieved from Water Footprint Network: <https://waterfootprint.org/en/resources/waterstat/>
- WBCSD. (2011). *Guide to Corporate Ecosystem Valuation*. World Business Council for Sustainable Development (WBCSD). Retrieved August 02, 2019, from <https://www.wbcd.org/Programs/Redefining-Value/Business-Decision-Making/Measurement-Valuation/Resources/Guide-to-Corporate-Ecosystem-Valuation>
- WBCSD. (2018). *Enhancing the credibility of non-financial information: the investor perspective*. World Business Council for Sustainable Development. Retrieved August 02, 2019, from <https://www.wbcd.org/Programs/Redefining-Value/External-Disclosure/Assurance-Internal-Controls/Resources/Enhancing-the-credibility-of-non-financial-information-the-investor-perspective>
- Weidema, B., Wesnæs, M., Hermansen, J., Kristensen, T., & Halberg, N. (2008). *Environmental Improvement Potentials of Meat and Dairy Products*. Retrieved August 01, 2019, from EU Science Hub: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/environmental-improvement-potentials-meat-and-dairy-products>
- WHO. (n.d.). *Metrics: Disability-Adjusted Life Year (DALY)*. Retrieved August 05, 2019, from World Health Organization: https://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/
- WICI. (2016). *WICI Intangibles Reporting Framework*. World Intellectual Capital/Assets Initiative. Retrieved August 05, 2019, from http://www.wici-global.com/wp-content/uploads/2016/09/WICI-Intangibles-Reporting-Framework_ver-1.0.pdf
- World Animal Protection. (2020). *Animal Protection Index*. Retrieved 04 17, 2020, from <https://api.worldanimalprotection.org/>
- World Bank. (2018). *World Development Indicators*. Retrieved from World Bank Databank: <https://databank.worldbank.org/reports.aspx?source=world-development-indicators>
- World Bank. (n.d.a). *Consumer Price Index*. Retrieved from <http://data.worldbank.org/indicator/FP.CPI.TOTL>
- World Bank. (n.d.b). *Exchange Rates*. Retrieved from World Bank: <http://data.worldbank.org/indicator/PA.NUS.FCRF>
- WWF Water Risk Filter. (2018). *Water Risk Filter_ Country Comparison*. Retrieved from Water Risk Filter: <https://waterriskfilter.panda.org/en/Explore/CountryProfiles#compare/1/10>



Glossary

The glossary defines key terms and concepts in impact assessment and valuation.

The **activity** of an organisation includes actions taken or work performed by the organisation in the timeframe.

Reference activity is a specified counterfactual activity to the activity undertaken by the organisation *that would have occurred* in the chosen timeframe if the organisation *had not undertaken* that activity.

Impact is a change in a valuable and measurable outcome with respect to a reference scenario during a given timeframe. Impact can be both positive or negative and intended or unintended (IMP, n.d.).

Absolute impact is the impact in which the activities of the organisation under consideration are compared to a reference scenario in which no activities occur.

Marginal impact is the impact in which the activities of the organisation under consideration are compared to a reference scenario in which alternative activities occur. In particular, these alternative activities are those that can be expected to occur were the organisation absent.

Direct impact of a specific organisation in scope is the impact that follows from the own operations of that organisation.

Indirect impact is the impact that arises outside of the organisation itself as a result of the organisation's actions; where the organisation in scope has a form of direct or indirect influence on the occurrence and/or size of that impact.

Indirect impact within the value chain (or 'value chain impact') is the impact that is generated somewhere in the organisation's value chain; either upstream or downstream.

Indirect impact within the system (or 'system impact') is the impact that is generated outside of the organisation's own value chain.

Impact assessment and valuation is the process of quantitatively assessing, valuing, and attributing impact to understand the impact of an organisation's activities.

Impact assessment is a process that can refer both to backward-looking impact measurement and forward-looking impact forecasting

A **welfare dimension** is a fundamental concept such as wellbeing, respect of rights, equality or fairness that a decision-maker considers valuable and uses as highest-level criteria in decision-making

Impact forecasting is the forward-looking process of quantitatively assessing, valuing, and expressing impact in a single common unit to understand the future impact of an organisation's activities. The common unit is often monetary.



Impact measurement is the backward-looking process of quantitatively measuring, valuing, and expressing impact in a single common unit to understand the past and current impact of an organisation's activities. The common unit is often monetary.

Impact monetisation is the process of translating an impact that is expressed in a non-monetary unit into an impact that is expressed in a monetary unit.

Impact valuation is an assessment of the normative desirability of an impact from the perspective of a stakeholder in a common quantitative unit that reflects that impact's value to that stakeholder. The common unit is often monetary.

A **valued impact** is an impact expressed in a quantitative unit that reflects the normative desirability of an impact from the perspective of a stakeholder. In the context of this document, valuation refers to expression in monetised form.

Impact pathway is a quantifiable chain of effects and counterfactual effects linking a specific activity of an organisation to its (non-valued and valued) impact.

Actual scenario is the chain of realised and/or expected effects of inputs, outputs and outcomes as a result of the reference activity.

Reference scenario is the counterfactual chain of effects of inputs, outputs and outcomes as a result of the reference activities.

Input(s) are the financial, human, manufactured, natural and other resources used in the activities of the organisation over a chosen timeframe. Technically, an activity's **input** is a direct effect of an activity of the organisation that occurred over a period chosen in the timeframe and that constitutes a voluntary and positive capital change to the organisation.

Output(s) are the direct results (financial capital, goods or services, material resources or externalities) of the activities that occur over a chosen timeframe. Technically, an activity's **output** is a direct effect of an organisation's activity that occurred during a period chosen in the timeframe and that *is not* an input.

Outcome(s) are the direct or indirect welfare effects on stakeholders of an activity that occurred over a chosen timeframe. An outcome can be caused by inputs or outputs.

An impact is **material** if it reflects the organisation's significant economic, environmental, and social contributions, or if it substantively influences the results of the assessment and decisions of funders (Global Reporting Initiative, 2019).

Net Present Value (NPV) is the difference between the present value of cash inflows (or impact streams) and the present value of cash outflows over a specified timeframe.

Organisational focus is the portion(s) of a business to be assessed. There are three levels of organisational focus: organisation, project or product (NCC, 2016).



1. An assessment of the **organisation** entity entails all divisions, subsidiaries, business units and geographies. In this case, the user may limit the scope to certain business lines or geographies, perhaps focusing on activities in one country.
2. An assessment of a **project** includes only the related sites and activities.
3. An assessment of a **product** entails the evaluation of goods or services and the materials used in production.

A **set of valuables** is a set of measurable indicators within a welfare dimension. When measured or estimated properly, the set of valuables as a whole provides all the information a decision maker needs to know to choose between alternative options.

Value chain of an organisation is the combined upstream, downstream and own operations activities used to produce all products and services to which the organisation contributes.

Upstream operations are the activities of suppliers, including purchased energy.

Own operations are all the activities over which the business has direct control.

Downstream operations are the activities relating to further processing, purchase, use or disposal of any products or services produced by the organisation.

Value chain responsibility is the view that some impact is the responsibility of multiple organisations in a value chain, even if the impact directly occurs as a result of the operations of just one of them.



Appendix A: List of key impacts

This appendix contains a list of key impacts. This list can be used in the scope stage to identify potentially relevant impacts (see Chapter 5.1.3). This list has been adapted from the IAM Core (Impact Institute, 2020). It includes 37 impacts that are often relevant in an impact investment context, covering externalities and important internal costs, such as interest payments. The impacts in this list are spread across the six capitals as defined by the International Integrated Reporting Council (IIRC, 2013), and six stakeholder groups. The stakeholder groups are defined by IAM Core (Impact Institute, 2020) relative to their relationship to the organisation being assessed. This list includes impacts which are, in many situations, material, however, it does not aim to be an exhaustive list of all possible impacts. For a more exhaustive list we refer to IAM Core (Impact Institute, 2020).

Note that in addition to the description of impacts given below, all impacts are defined as a change in a valuable and measurable outcome, with respect to a reference scenario.

Nr	Impact class	Description	Capital	Stakeholder	Valence
1	Scarce materials depletion	Use of scarce, non-recyclable materials (including fossil fuels), making them unavailable to future users. This constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
2	Scarce water depletion	Use of scarce water resources makes them unavailable to other users. This constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
3	Water pollution ²¹	Negative impact on water quality (e.g. due to the emissions of pollutants) constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
4	Soil pollution ²¹	Negative impact on soil quality (e.g. due to the emissions of pollutants) constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
5	Air pollution ²¹	Negative impact on air quality (e.g. due to the emissions of pollutants) constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
6	Contribution to climate change	Contributions to climate change through the emissions of greenhouse gasses, which negatively affect people and ecosystems. These contributions constitute negative impacts and external costs.	Natural	Beneficiaries of nature	Negative

²¹ Water, soil and air pollution are sometimes, such as in the IAM core (Impact Institute, 2020), grouped together in a single impact referred to as pollution.



Nr	Impact class	Description	Capital	Stakeholder	Valence
7	Land use, land transformation and related loss of biodiversity	Historical land transformation from an original state with high Natural Capital value to a state with lower value. This constitutes a negative impact and external cost.	Natural	Beneficiaries of nature	Negative
8	Non-land related loss of biodiversity and ecosystem services	Biodiversity loss that occurs as a result of factors other than land use, land transformation, water pollution etc. It constitutes a negative impact and an external cost.	Natural	Beneficiaries of nature	Negative
9	Animal welfare issues	Negative effects on animal welfare including thirst, hunger, pain, etc., in own operations and in the value chains.	Natural	Beneficiaries of nature	Negative
10	Change in brand value and customer loyalty	Changes in the Social Capital of the organisation, as these are assets that help the organisation to attract and retain customers and employees.	Social	Company and investors	Positive or negative
11	Child labour	The presence of child labour (beyond the legal or international limits), including as an indirect impact. This constitutes a negative impact and an external cost.	Social	Government, local communities, and others	Negative
12	Forced labour	The presence of forced labour (beyond the legal or international limits), including as an indirect impact. This constitutes a negative impact and an external cost.	Social	Government, local communities, and others	Negative
13	Underpayment (and underearning)	The gap between current income and a living wage or income, required for a decent standard of living, for all employees (or employers) earning less than a living wage. The presence of underpayment (or underearning), including as an indirect impact, constitutes a negative impact and an external cost.	Social	Government, local communities, and others	Negative
14	Harassment	The presence of harassment (both sexual and non-sexual, physical and non-physical) including as an indirect impact. This constitutes a negative impact and an external cost.	Social	Employees	Negative
15	Breaches of land rights and indigenous rights	Negative effects of violation of land rights and the rights of indigenous people by the organisation.	Social	Government, local communities, and others	Negative



Nr	Impact class	Description	Capital	Stakeholder	Valence
16	Lack of freedom of association	Negative effects of lack of freedom of association of employees in own operations and in the value chains.	Social	Employees	Negative
17	Lack of social security	Negative effects of lack of social security in own operations and in the value chains.	Social	Employees	Negative
18	Discrimination	Presence of discrimination based on gender, nationality, ethnicity, ability and other factors in own operations and in the value chains.	Social	Employees	Negative
19	Creation of Human Capital	Increases in the expected generated value added of employees due to an increase in productivity as a result of working at the organisation, or in the value chain. Several stakeholders profit from the resulting increase in productivity and higher earnings throughout a career.	Human	Organisation and investors; employees; government, local communities, and others	Positive
20	Wellbeing effects of employment	The increase in wellbeing of employees caused by employment (at the organisation or in the value chain) through effects on, amongst other things, self-esteem, autonomy, social relations, and social status.	Human	Employees, government, local communities, and others	Positive
21	Effects on consumer and citizen health	Health effects on consumers and citizens of the products and services delivered by the organisation and their stakeholders.	Human	Government, local communities, and others	Positive or negative
22	Occupational health and safety incidents	Value of the damage due to fatal and non-fatal occupational incidents and diseases in the workplace. This constitutes a negative impact and an external cost.	Human	Employees, government, local communities, and others	Negative
23	Value of employee time	Opportunity cost of using labour, which is now unavailable elsewhere in the economy. making the labour contracted by the organisation unavailable elsewhere in the economy. As this is an input to the operations, it is a negative impact but not an external cost.	Human	Employees	Negative



Nr	Impact class	Description	Capital	Stakeholder	Valence
24	Net development of data and technology	Value of the (hypothetical) stock of developed intangible assets, technology, data, and market models, representing future value creation for the organisation (and its investors). Depending on whether this value increases or decreases in the reporting period, it can be a positive or a negative impact.	Intellectual	Organisation and investors	Positive or negative
25	Change in intellectual assets	Positive or negative changes in the intellectual assets (e.g., intellectual property rights owned) of the organisation or its stakeholders.	Intellectual	Organisation and investors	Positive or negative
26	Occurrence of data and privacy breaches	Rights breaches and the related harm resulting from security breaches regarding data managed by the organisation.	Intellectual	Clients	Positive or negative
27	Client value of products and services ²²	Positive changes in Manufactured Capital for clients resulting from the products or services delivered by the organisation. The value of this change in Manufactured Capital is typically at least as large as the 'payments from clients', as economic theory states that transactions do not take place if the value of the goods or services offered does not match the price.	Manufactured	Clients	Positive
28	Value of purchased goods and services	Negative changes in Manufactured Capital for the suppliers of the organisation resulting from the purchase of products or services from these suppliers. The value of the positive impact 'payments to suppliers' is typically at least as large as this impact, as economic theory states that a supplier would not sell if the value of the goods is higher than the price offered.	Manufactured	Suppliers	Negative
29	Net investments in tangible assets	Net increase in value of tangible assets, such as property, plants and	Manufactured	Company and investors	Positive or negative

²² In some cases it may make sense to separate this impact into two impacts, as is done in IAM Core (Impact Institute, 2020), one which focuses on value for business clients, and one for consumer clients.



Nr	Impact class	Description	Capital	Stakeholder	Valence
		equipment, during the reporting period.			
30	Payments by clients	Payments from clients to the organisation. These transactions result in negative changes in Financial Capital for clients.	Financial	Clients	Negative
31	Payments to suppliers	Payments to suppliers from the organisation. These transactions result in positive changes in Financial Capital for suppliers.	Financial	Suppliers	Positive
32	Employee payments	Payments from the organisation related to employee expenses, including gross salary and several social security and pension contributions. These are positive changes of Financial Capital for employees (e.g., salaries) and the government (e.g., taxes).	Financial	Employees, government, local communities, and others	Positive
33	Interest payments	Interest payments from the organisation to bondholders and others. These transactions result in positive changes of Financial Capital for them.	Financial	Organisation and investors	Positive
34	Income tax payments	Profit income taxes paid to the government by the organisation. These are positive changes of Financial Capital for the government.	Financial	Government, local communities, and others	Positive
35	Subsidies received from governments	Subsidies from the government to the organisation. These are positive changes of Financial Capital for the organisation.	Financial	Organisation and investors	Positive
36	Profit	Net profit or loss of the organisation during the reporting period. If an organisation makes a net profit, this results in an increase of the Financial Capital of the organisation. Part of this might in turn be used to pay dividends to shareholders. If the organisation makes a net loss, this results in a decrease of the Financial Capital of the organisation. This impact can be either positive (if it is profit) or negative (if it is loss).	Financial	Organisation and investors	Positive or negative
37	Cost of capital	Cost of the capital provided by the organisation and its investors. This	Financial	Organisation and investors	Negative



Nr	Impact class	Description	Capital	Stakeholder	Valence
		represents a negative impact to the suppliers of the capital.			



Appendix B: Overview of reliable data sources

This appendix contains a list of reliable data sources which can be referred to throughout the process of assessing and valuing impacts. This list is not exhaustive and a full impact assessment will require the user to conduct their own research.

Firstly, this section includes a list of data sources for each impact that appears in the standardised list of Appendix A. Secondly, sources which specifically help with the valuation step are included (see Chapter 6.4).

Table 4: Data sources per impact

Nr.	Impact category	Capital	Sources
1	Scarce materials depletion	Natural	<ul style="list-style-type: none"> • ReCiPe (Huijbregts, et al., 2016) • EORA multiregional input-output tables (EORA, 2018) • Exiobase multiregional input-output tables (Exiobase, 2015) • Idemat - life cycle inventory set of databases (Idemat, 2019)
2	Scarce water depletion	Natural	<ul style="list-style-type: none"> • Water Risk Filter (WWF Water Risk Filter, 2018) • The Food and Agriculture Organisation Aquastat (FAO, 2017) • Water Footprint Network (Water Footprint Network, n.d) • EORA multiregional input-output tables (IO model) (EORA, 2018) • Carbon Disclosure Project (CDP, 2020)
3	Water pollution	Natural	<ul style="list-style-type: none"> • The Food and Agriculture Organisation Aquastat (FAO, 2017) • Water Footprint Network (Water Footprint Network, n.d) • ReCiPe (Huijbregts, et al., 2016)
4	Soil pollution	Natural	<ul style="list-style-type: none"> • ReCiPe (Huijbregts, et al., 2016) • EORA multiregional input-output tables (EORA, 2018) • Exiobase multiregional input-output tables (Exiobase, 2015)
5	Air pollution	Natural	<ul style="list-style-type: none"> • ReCiPe (Huijbregts, et al., 2016) • EORA multiregional input-output tables (EORA, 2018) • Exiobase multiregional input-output tables (Exiobase, 2015)



Nr.	Impact category	Capital	Sources
6	Contribution to climate change	Natural	<ul style="list-style-type: none"> • ReCiPe (Huijbregts, et al., 2016) • Idemat - life cycle inventory set of databases (Idemat, 2019) • Greenhouse Gas Protocol third party databases (GHG protocol, n.d) • International energy agency statistics (IEA, 2016) • EORA multiregional input-output tables (EORA, 2018) • Carbon Disclosure Project (CDP, 2020) • Greenhouse gas reporting - Conversion factors (Department for Business, Energy & Industrial Strategy UK Government, 2019)
7	Land use, land transformation and related loss of biodiversity	Natural	<ul style="list-style-type: none"> • World Development Indicators (World Bank, 2018) • Globio - Impacts on biodiversity (Globio, 2019) • EORA multiregional input-output tables (IO model) (EORA, 2018)
8	Non-land related loss of biodiversity and ecosystem services	Natural	<ul style="list-style-type: none"> • Globio - Impacts on biodiversity (Globio, 2019) • ReCiPe (Huijbregts, et al., 2016)
9	Animal welfare issues	Natural	<ul style="list-style-type: none"> • World Animal Protection (World Animal Protection, 2020)
10	Change in brand value and customer loyalty	Social	<ul style="list-style-type: none"> • Primary data
11	Child labour	Social	<ul style="list-style-type: none"> • Data from national federations: US Bureau of international labour affairs (U.S. Department of Labour, 2017) • International labour law (ILO, n.d.b) • Labour statistics (ILOSTAT, n.d)
12	Forced labour	Social	<ul style="list-style-type: none"> • Data from national federations: US Bureau of international labour affairs (U.S. Department of Labour, 2017) • Statistics from national federations • International labour law (ILO, n.d.a)
13	Underpayment (and underearning)	Social	<ul style="list-style-type: none"> • Primary data on gross and net wages • Sector data on workers' average wages • Labour statistics (ILOSTAT, n.d.) • Global Living Wage Coalition (GLWC, n.d.) • Wage indicator (Wage Indicator, n.d)
14	Harassment	Social	<ul style="list-style-type: none"> • Workplace harassment from the victim's perspective (Bowling & Beehr, 2006) • Academic survey-based studies
15	Breaches of land rights and indigenous rights	Social	<ul style="list-style-type: none"> • Food and Agricultural Organization of the United Nations's (FAO) Gender and Land Rights Database (FAO, 2020)



Nr.	Impact category	Capital	Sources
16	Lack of freedom of association	Social	<ul style="list-style-type: none"> Labour statistics (ILOSTAT, n.d.) Employment protection legislation database - EPLex (ILO, n.d.b)
17	Lack of social security	Social	<ul style="list-style-type: none"> Labour statistics (ILOSTAT, n.d.) Primary data
18	Discrimination	Social	<ul style="list-style-type: none"> Labour statistics (ILOSTAT, n.d.) Primary data
19	Creation of human capital	Human	<ul style="list-style-type: none"> Primary data
20	Wellbeing effects of employment	Human	<ul style="list-style-type: none"> Academic survey-based studies
21	Effects on consumer and citizen health	Human	<ul style="list-style-type: none"> Academic health studies
22	Occupational health and safety incidents	Human	<ul style="list-style-type: none"> Labour statistics (ILOSTAT, n.d.)
23	Value of employee time	Human	<ul style="list-style-type: none"> Labour statistics (ILOSTAT, n.d.) Sector data on workers' average wages Wage indicator (Wage Indicator, n.d)
24	Net development of data and technology	Intellectual	<ul style="list-style-type: none"> Primary data
25	Change in intellectual assets	Intellectual	<ul style="list-style-type: none"> Primary data
26	Occurrence of data and privacy breaches	Intellectual	<ul style="list-style-type: none"> Primary data
27	Client value of products and services	Manufactured	<ul style="list-style-type: none"> Primary data
28	Value of purchased goods and services	Manufactured	<ul style="list-style-type: none"> Primary data
29	Net investments in tangible assets	Manufactured	<ul style="list-style-type: none"> Primary data
30	Payments from clients	Financial	<ul style="list-style-type: none"> Primary data
31	Payments to suppliers	Financial	<ul style="list-style-type: none"> Primary data
32	Employee payments	Financial	<ul style="list-style-type: none"> Primary data
33	Interest payments	Financial	<ul style="list-style-type: none"> Primary data
34	Income tax payments	Financial	<ul style="list-style-type: none"> Primary data Reports on tax laws by accounting firms Government websites providing information about tax legislation
35	Subsidies received from governments	Financial	<ul style="list-style-type: none"> Primary data
36	Profit	Financial	<ul style="list-style-type: none"> Primary data
37	Cost of capital	Financial	<ul style="list-style-type: none"> Primary data



Valuation data sources

The level of development of valuation approaches and methods for different impacts varies in literature, with the valuation of Natural Capital impacts being the most established concept to date. The sources for Natural Capital are thus the most developed, offering both concrete monetisation factors and guidance on valuation. For other impacts, the sources listed below, while not exhaustive, should assist with the monetisation of impacts per type of Capital.

Table 5: Valuation sources per Capital

Capital	Valuation data sources
Natural Capital	<ul style="list-style-type: none"> • True Price’s Monetisation Factors for True Pricing (True Price, 2020) • ReCiPe method of LCA impact assessment (Huijbregts, et al., 2016) • The Economics of Ecosystems and Biodiversity for National and International Policy Makers (TEEB, 2011) • CE Delft environmental shadow prices (Bruyn, et al., 2010) • United States Environmental Protection Agency – The Social Cost of Carbon (EPA, 2017) • The Social Cost of Carbon: Trends, Outliers and Catastrophes (Tol, 2008) • ISO 14040: 2006 Environmental management – Life cycle assessment- Principles and framework (ISO, 2006) <p>Some environmental impacts may affect human health, in this case the impact can first be transformed to Disability-Adjusted Life Year (DALY) lost, which can be used to monetise the impact. The cost of the DALY comes from two sources:</p> <ul style="list-style-type: none"> • OECD has a meta-analysis on the value of statistical analysis (OECD, 2012) • Environmental Improvement Potentials of Meat and Dairy Products (Weidema, Wesnæs, Hermansen, Kristensen, & Halberg, 2008)
Social Capital	<ul style="list-style-type: none"> • True Price’s Monetisation Factors for True Pricing (True Price, 2020) includes monetisation factors for many negative impacts <p>Others are valued through scores of wellbeing – this typically relates to correlating wellbeing and income. This approach is explored in the following sources:</p> <ul style="list-style-type: none"> • A method for valuing non-market goods using wellbeing data (Fujiwara, 2013) • Valuing adult learning (Dolan & Fujiwara, 2012)
Human Capital	<p>Some Human Capital impacts (such as workplace health and safety impacts) can be monetised as described above using DALYs (or similar metrics, such as QALYs - Quality-Adjusted Life Years) (WHO, n.d.). The value of DALYs lost is calculated in two studies:</p> <ul style="list-style-type: none"> • OECD has a meta-analysis on the value of statistical analysis (OECD, 2012) • Environmental Improvement Potentials of Meat and Dairy Products (Weidema, Wesnæs, Hermansen, Kristensen, & Halberg, 2008) <p>Others are valued through scores of wellbeing – this typically relates to correlating wellbeing and income. This approach is explored in the following sources:</p>



	<ul style="list-style-type: none">• A method for valuing non-market goods using wellbeing data (Fujiwara, 2013)• Valuing adult learning (Dolan & Fujiwara, 2012)
Intellectual Capital	<p>Some elements of Intellectual Capital can be monetised through the NPV of the benefits, if they lead to future cash-flows (or even other capital flows).</p> <ul style="list-style-type: none">• The World Intellectual Capital Initiative also offers a framework for reporting on intellectual capital guide (WICI, 2016)
Manufactured Capital	<p>Some of the Manufactured Capital impacts concerning the value of products, goods or services can be monetised through willingness-to-pay.</p> <p>Financial accounting frameworks sometimes already require monetisation of tangible assets (that can be part of Manufactured Capital), typically either based on costs made or on expected cash flows.</p>
Financial Capital	<p>Monetisation is typically not required, as financial impacts are naturally expressed in monetary terms.</p>
Other useful data sources	<ul style="list-style-type: none">• Interest rates: (IMF, n.d)• Exchange rates: (World Bank, n.d.b)• Consumer Price Index (inflation): (World Bank, n.d.a)



Appendix C: Needs assessment, landscape mapping and gap assessment

Using an extensive literature review as a point of departure, a needs assessment, as well as a mapping analysis of the landscape and a gap analysis were performed.

Needs assessment

The needs assessment was the result of the literature review complemented with various interviews with experts. Based on this, we can conclude that impact investors and philanthropists who seek to make informed decisions regarding their funding choices need, and currently lack, reliable, relevant, comparable and consistent impact information on the initiatives they (are considering to) fund.

According to the WBCSD (2018), the current landscape is fragmented and unstandardised, and thus a meaningful analysis of impact cannot be done. A WBCSD report summarises the main problems that investors experience:

Investors are not getting the sustainability information they want or need to make informed decisions. Reasons for this include the fact that there's too much information across conflicting frameworks and that there are differing definitions for what sustainability is and does from company to company. Plus, investors have difficulty assessing to what extent the information can be relied on. (p.1)

The information needed to make funding decisions based on impact is lacking. Moreover, the information that is available is insufficiently standardised, not internationally comparable and not relevant (OECD, 2019; WBCSD, 2018). Addy et al. (2019) note the same problem in their article "Calculating the Value of Impact Investing". According to them, although reporting on environmental, social and governmental issues is done by nearly three-quarters of large and medium-sized companies, these reports usually deal with commitments and the process, rarely with scores regarding actual impact on customers and the community. As a result, investors who would like to know more about an organisation find "little useful data" to analyse (Addy et al., 2019).

The situation is comparable in the philanthropy sector, where it is recognised that the 'right' impact information sought by donors is lacking (Inspiring Impact, 2019). The sheer volume of available impact information and tools can be both overwhelming and, due to a lack of resources, skills and confidence, difficult to implement in practice (Inspiring Impact, 2019).

From the literature, it can be inferred that the following elements are needed for reliable, relevant, comparable and consistent impact information to become available:

- Standardised methods to produce impact information ex-post
- Impact data, which can be used as input to assess the impact of organisations
- Informal and formal institutions to facilitate the rigour of this impact data
- Guidance/tools to use this data in order to make estimations of impact ex-ante in a comparable (between options) and consistent (between actors) way



- Competences among professionals to interpret this impact information in order to improve their decision-making

The OECD (2019) report on impact investing indicates that comparable standards, data and transparency are needed for impact investment markets to grow, mature and thrive. The purpose of a standard is to guarantee the relevance, reliability, consistency and comparability of data. Accountability and the assessment of results are crucial for impact investments to be effective, and a robust method is thus essential when making decisions (OECD, 2019). A comparison can also be made based on standardised results, which is often very important for the decision-making process of investors. This is evident in a quote from a WBCSD (2018) report:

To investors, comparability is the foundation of good information flows. Investors are interested in comparability against peers and within the company itself over time. However, investors recognise that comparability between companies is more challenging – this is because NFI [Non-Financial Information] is often entity-specific and companies use different measurement processes. Investors want to be able to benchmark and analyse trends, but they are aware that, as companies innovate and evolve in their reporting, trends may be distorted because of what is reported and how it is measured. Investors want disclosure on the methodology used and the calculations behind the non-financial metrics. If they can understand the differences between different companies' metrics and calculation methods, they will be able to make informed comparisons. (p. 8)

In comparison to the systems developed for financial information, which are based on well-established standards and audited, the information and reporting systems on impact are still immature (WBCSD, 2018). The methods for assessing impact do exist, but they often diverge from, and even conflict with, one another; in the end, these methods defeat their purpose (WBCSD, 2018). Impact information is then often not comparable.

To produce and use valuable impact information at scale at affordable costs, professionals need to acquire competences to assess impact (Inspiring Impact, 2019) and have tools at their disposal to automate the impact assessment process. Without the right tools, it appears to be difficult to meaningfully translate available data into forward-looking information (WBCSD, 2018). According to Addy et al. (2019), predicting the results of an investment is therefore often a question of gambling.

Landscape mapping

In our landscape mapping and gap assessment we restricted ourselves to international frameworks, approaches and documents that provide methods to produce impact information for impact investors and philanthropists. Tools, data sources, frameworks on impact management, and other impact-related content that did not provide methods to produce impact information have been excluded from the landscape assessment. In addition, methods that are not tailored to impact investors or philanthropists, or frameworks that are not for an international audience, have been excluded. Finally, some of the included approaches also provide tooling and data as well as management guidance; here we focus mainly on their methodological contributions.

Based on the landscape mapping, 25 methods (see

Table 6) were chosen to be analysed. Nine of these are discussed in detail here. The completeness of the list was validated by experts when conducting the needs assessment.



Table 6: Overview of the analysed landscape.

Nr	Name of method	Published by
1	Impact Management Project (IMP)	Impact Management Project (IMP)
2	The Navigating Impact Project	Global Impact Investing Network (GIIN)
3	Impact Genome Project® (IGP)	Mission Measurement
4	B Impact Assessment	B Analytics
5	The Rise Fund/Y Analytics	TPG, Y Analytics and the Bridgespan Group
6	Criteria for Top Charities	GiveWell
7	A Guide to Actionable Measurement & Evaluation Policy	Bill & Melinda Gates foundation
8	Total Impact Measurement and Management (TIMM)/Impact Explorer	PwC
9	True Value	KPMG
10	Social Return on Investment Methodology	Social Value UK, SROI Network
11	Impact Reporting and Investment Standards (IRIS)	Global Impact Investing Network (GIIN)
12	Principles for Responsible Investment (PRI)	UNEP Finance Initiative & UN Global Compact
13	In search of Impact	Investors Leaders Group (ILG), University of Cambridge
14	Expected Return and Impact	Root Capital
15	iPAR Impact Evaluation	iPAR
16	Measuring up!	NVCO/Inspiring Impact
17	Social Impact Investment 2019	OECD
18	Impact dashboard	Root Capital
19	Social Impact Measurement Model (SIMM)	Deloitte
20	Blockchain for impact measurement	ixo Foundation
21	Lean data	Acumen
22	Measuring and comparing value	EA (Effective Altruism) Concepts
23	What we do	GiveDirectly
24	European Venture Philanthropy Association (EVPA) Guidelines	EVPA
25	NPC Guidelines	NPC

Impact Management Project

The Impact Management Project (IMP) is a collective consisting of over 2,000 enterprises, investors and practitioners. The IMP was founded in 2016 as a forum for building a global consensus on how to measure, compare, and report ESG risks and positive impacts (IMP, n.d.). The IMP also facilitates the IMP Structured Network, which, according to IMP (n.d.), is “an unprecedented collaboration of organisations [...] that, through their specific and complementary expertise, are coordinating efforts to provide complete standards for impact measurement, management and reporting.”

The IMP has attempted to set up a framework for impact assessment in several areas. First, they have distinguished between three types of intentions behind making an impact investment: ensuring that no damage is done, ensuring that stakeholders improve and contributing to solutions. IMP has built a global consensus with practitioners and



standard setters around five dimensions on which to impact can be understood: What, Who, How Much, Contribution and Risk (IMP, n.d.).

The five dimensions, in which impact is always expressed, are defined as follows:

1. **What** outcomes occur to the planet and its inhabitants, and how important are these outcomes to those experiencing them?
2. **Who** is experiencing the outcomes, and how underserved were they prior to the outcomes?
3. **How much** of the outcome occurs, how many stakeholders have to deal with the outcomes, to what extent do they experience change and how long do they have to deal with the change?
4. What **contribution** do investors have to the outcomes, accounting for what would have happened anyway?
5. What is the **risk** that the impact will be different than expected?

In order to realise this framework and enable impact investors to set goals and assess actual performance, the IMP has developed fifteen 'data categories' for these five dimensions.

These dimensions together form a framework that can be used as a guide for enterprises and investors to measure and manage their impact. The framework structures data and ensures that decision-making is facilitated. The IMP has also compiled a catalogue of resources and examples based on these five dimensions, which is regularly extended. The resources and examples included in the catalogue have been compiled by the asset managers, and the expected or actual impact of each investment product is stated (IMP, n.d.).

The Navigating Impact Project

The Navigating Impact Project is a generally accepted system introduced by the Global Impact Investing Network (GIIN) and the IRIS+ system. It connects investors' goals with evidence, metrics and reputable sources that can help them measure, manage and optimise impact (GIIN, n.d.). The project facilitates making impact investments by categorising impact into themes. Some themes are, for example, access to energy, gender, education, responsible forestry and water management. To structure the data for decision-making, the Navigating Impact Project uses the framework that the Impact Management Project has developed.

Impact Genome Project®

Similar to the Navigating Impact Project of GIIN and the IRIS+ system, the Impact Genome Project® aims to structure data for impact investment decision-making. However, contrary to the Navigating Impact Project, the Impact Genome Project® does not use the framework of the Impact Management Project. It does this by quantifying the "genes" of non-profit programmes and academic research (Impact Genome Project, n.d.). For different organisations, this implies the following:

- Foundations can standardise their final reports and analyse subsidy portfolios
- The government can design more effective programmes and standardise subsidy reports
- Non-profit organisations can report revenue consistently for all donors and make comparisons with peers (Impact Genome Project, n.d.).



The Impact Genome Project® distinguishes several "impact areas" in the reports it provides. Some of these areas include, for example, basic human needs, economic development and education.

B Impact Assessment

B Impact Assessment is a freely accessible tool of B Lab which organisations can use to calculate their impact. The tool goes through three steps, enabling the user to quickly gain insight into impact and compare that with other organisations.

In the first step, questions are asked to determine what is needed to make the organisation better for the staff, the community and the climate. In just thirty minutes, B Impact Assessment provides a 'snapshot' of how an organisation is performing. A more detailed report requires two to three hours (B Impact Assessment, n.d.).

In the second step, the user can benchmark their organisation against other organisations based on the "B Impact Report". In this way, it is possible to identify where the organisation surpasses other organisations and where it can be learn from others. Benchmarking helps the organisation put its B Impact Score in context (B Impact Assessment, n.d.).

The third and final step is about improving the impact of the organisation through three free accessible tools that B Impact Assessment offers. In this step, B Impact Assessment challenges the user to sketch out a "roadmap of improvements", outlining where the organisation can improve and how to get there. The website also shares best practices in various areas, including the compilation of a handbook for employees, the monitoring of water management and the implementation of financial control. Finally, it is also possible to see how other organisations have improved their impact as a result of the B Impact Assessment (B Impact Assessment, n.d.).

B Impact Assessment is used by GIIRS (Global Impact Investing Ratings System), who provide funds with impact ratings (Analytics, 2020).

The Rise Fund / Y Analytics

The RISE Fund consists of experienced investors who invest in companies that create positive social and environmental impact as a direct result of their core activities. They are searching for creative entrepreneurs to set up companies that can bring meaningful, measurable and positive change. In this way, the RISE Fund aims to contribute to achieving the Sustainable Development Goals (SDGs) (The RISE Fund, n.d.a.). To help others make impact investments, they share their own experiences on their platform.

The method used by the RISE Fund to measure impact is based on thirty "outcome areas", in line with the SDGs. These "outcome areas" have been singled out as the areas in which it is possible to have impact. To measure this, the Rise Fund uses both quantitative and qualitative assessments. This is calculated using the "Impact Multiple of Money" (IMM) for each investment, which gives a picture of the potential a company has, in terms of positive impact:

We deploy the IMM with the same rigor and commitment to diligence as our financial underwriting, and it enables us to manage, measure and track impact results throughout the course of our investment. Calculating the IMM allows direct comparisons between investment opportunities to evaluate their positive impact (The Rise Fund, n.d.a.).



The result of an IMM calculation gives the user a picture of the outcomes that an investment can have and helps them get started.

GiveWell

Not only investors want to be sure that their money generates a positive impact. Philanthropists, too, want to know whether they can be sure that their donation will positively affect the impact created by a charity or foundation. For this reason, GiveWell is committed to providing insight into the relative impact of charities in order to assess whether donations are providing maximum impact.

The goal of GiveWell is to map "outstanding charities", in terms of the number of lives saved/improved, to help philanthropists choose where to donate. For this purpose, GiveWell examines whether the activities of charities can be empirically proven to be linked to "improved life outcomes" (GiveWell, n.d.). GiveWell bases this assessment on four criteria:

1. Proof of effectiveness
2. Effectiveness of costs
3. Space for more investments
4. Transparency

Bill & Melinda Gates Foundation

Bill & Melinda Gates Foundation has published the document "A Guide to Actionable Measurement", which works in a similar way to GiveWell, focusing on results for the assessment of charities. The assessment framework takes the form of a matrix based on two hierarchies: one of strategy (as defined in the foundation Strategy Review Guidelines) and one of results (as defined in the foundation Glossary of Measurement Terms and Definitions) (Bill & Melinda Gates Foundation, 2010). Three areas are highlighted within the matrix; at the strategy, initiative and grant levels. A set of guidelines is included for each one of them.

In addition, the foundation follows an evaluation policy characterised by an acceptance of a variety of methods, since it works with different partners and projects. As explained in the Evaluation Policy document, a "fit to purpose" evaluation design is followed, which can take three forms:

- Evaluations to understand and strengthen programme effectiveness
- Evaluations to test the causal effects of pilot projects, innovations, or delivery models
- Evaluations to improve the performance of institutions or operating models (Bill & Melinda Gates Foundation, n.d.)

Large professional services firms

Large, well-known professional services firms, such as Deloitte, KPMG and PwC, offer services to measure impact using proprietary methods. For example, PwC has launched the "Impact Explorer" tool, which the company itself describes as "a new tool for measuring and valuing your global impacts" (PwC, n.d.). Impact Explorer is a tool for bringing together ecological, social and economic data using the impact assessment models that PwC has



developed for the Total Impact Measurement & Management (TIMM) framework. The model covers six ecological and four socio-economic impacts (PwC, n.d.). The tool makes the following promises:

- It measures and monetises the impact of global activities and the entire value chain.
- It provides insight into the different dimensions of impact, which enables better-informed decisions and a better view of risks and opportunities.
- It ensures greater stakeholder involvement.
- The tool requires only simple input that is already available in the organisation, including traditional sustainability metrics and financial data (PwC, n.d.).

The methods used are not open source.

Social Return on Investment (SROI)

Social Value has created the "Social Return on Investment" (SROI) framework for assessing and valuing social return. The purpose of the SROI is to combat inequality and ecological decline, and improve wellbeing. To pursue these goals, SROI includes social, ecological and economic costs and benefits in the calculation of social return (Social Value UK, 2012). The SROI is open source and based on stakeholder data. Often calculations made with SROI are only for a few impacts, and not for the entire organisation.

According to Social Value UK (2012), there are two types of SROI:

1. Evaluative: the actual results that have taken place are retrospectively examined.
2. Forward-looking: it is predicted how much social value will be created if the activities achieve the intended goals.

An important distinction is made in the SROI between "social outcomes", "social value" and "social impact". "Social outcomes" focus on the changes that result from a certain activity, expected or unexpected, positive or negative. "Social value" is about quantifying the relative importance that people attach to these changes. Finally, "social impact" takes into account what would have happened in any case, the contribution of others and the timespan in which outcomes persist (Social Value International, 2015).

For the calculation of social return through the SROI, "Social Value" goes through six phases, which are briefly described below:

1. In Phase 1, the scope is determined, and the stakeholders are mapped.
2. In Phase 2, the "outcomes" are mapped.
3. In Phase 3, the "outcomes" are substantiated, and a value is assigned to them.
4. In Phase 4, the impact is determined and calculated.
5. In Phase 5, the actual Social Return on Investment is calculated.
6. Finally, Phase 6 is about reporting, using the results and embedding the SROI process in the organisation (Social Value UK, 2012).



After completing these six steps, the methodology provides an estimate of the social return that the investment might yield. Social Value links this method to B-Lab, the European Venture Philanthropy Association (EVPA) and the Natural Capital Coalition (NCC).

Gap assessment

To conduct the gap assessment, we identified the following taxonomy of elements that a standardised method needs to have to produce reliable, relevant, comparable and consistent impact information.²³

First, such a method needs to cover all the steps to arrive at impact information that is relevant for the various use cases. We have determined the following steps:

I. Steps in scope

1. **Assess impact**
 - a) Impact identification
 - b) Qualitative impact assessment
 - c) Quantitative impact assessment
2. **Value impact**
 - a) Impact weighting
 - b) Impact valuation
 - c) Impact monetisation
3. **Aggregate impact**
 - a) Aggregation of types of impact
 - b) Aggregation at organisation level
 - c) Aggregation at portfolio level
4. **Report impact**
 - a) Informal reporting
 - b) Internal reporting
 - c) External reporting
5. **Steer on impact**
 - a) Derive decision criteria
 - b) Develop funding strategy
 - c) Screen opportunities
 - d) Conduct due diligence
 - e) Participate
 - f) Exit

Note that the order of the steps is not strict. Different funders will have different needs, depending on which, some steps may come first or be skipped. For example, an increasing number, but still far from all funders, are looking for monetised impact information. Similarly, not all funders will want to aggregate different types of impact.

Second, we have identified the following qualities necessary for a standardised framework:

²³ Note that this method need not be contained in a single framework or document.



II. Qualities

1. **Theoretical foundations**
 - a) Conceptual
 - b) Formal
2. **Guidance**
 - a) Substantive guidance
 - b) Procedural guidance
3. **Domains**
 - a) Enterprise impact
 - b) Non-profit impact
 - c) Funder impact/investor additionality
 - d) Backward-looking assessment
 - e) Forward-looking assessment
4. **Standardisation**
 - a) Open source
 - b) Prescriptive conventions
 - c) Consensus

In order for the method to enable the production of reliable impact information, a sound theoretical foundation is required. This starts with conceptual definitions. This will help to resolve a previously mentioned issue: unclear definitions making it difficult to determine what organisations mean by "impact" and "impact investments" (OECD, 2019).

A standardised method also needs to provide guidance on what to do (substantive guidance) and how to do it (procedural guidance).

Finally, to provide comparable and consistent information, the method needs to be, or become, a standard. This requires it to be open source, provide prescriptive conventions and represent a consensus in terms of opinion and adoption.

We mapped the nine most relevant approaches to the criteria above. The results are shown in Table 7.

The conclusion from the mapping is that the main gaps for open source methods are the following:

1. Theoretical foundations
2. Practical guidance to impact investors and philanthropists
3. Quantitative impact assessment applicable to non-profits and enterprises (mainly forward-looking)
4. Impact valuation
5. Impact aggregation
6. Impact reporting
7. Impact steering



This Guide focuses particularly on gaps 1-4, while gaps 5-7 are not in scope. Impact Institute aims to cover these topics in future publications.

Table 7: Mapping of the nine most relevant approaches to the criteria.

			Impact Management Project	The Navigating Impact Project	Impact Genome Project®	B Impact Assessment	The Rise Fund	GiveWell	Bill & Melinda Gates Foundation	Large professional services firms	Social Return on Investment	
I. Steps in scope	1. Assess impact	a) Impact identification	✓	✓	✓	✓	✓				✓	
		b) Qualitative impact assessment	✓			✓	✓				✓	
		c) Quantitative impact assessment					✓	✓				✓
	2. Value impact	a) Impact weighting							✓			
		b) Impact valuation					✓				✓	✓
		c) Impact monetisation					✓				✓	✓
	3. Aggregate impact	a) Aggregation of types of impact										
		b) Aggregation at organisation level					✓					
		c) Aggregation at portfolio level					✓					
	4. Report impact	a) Informal reporting										
		b) Internal reporting				✓	✓					
		c) External reporting							✓	✓		
	5. Steer on impact	a) Derive decision criteria										
		b) Develop funding strategy										
		c) Screen opportunities					✓	✓	✓	✓	✓	
d) Conduct due diligence						✓	✓	✓	✓	✓		
e) Participate								✓	✓	✓		
f) Exit												
II. Qualities	1. Theoretical foundations	a) Conceptual						✓				
		b) Formal						✓				
	2. Guidance	a) Substantive guidance	✓	✓								✓
		b) Procedural guidance										
	3. Domains	a) Enterprise impact	✓	✓		✓	✓				✓	✓
		b) Non-profit impact			✓				✓	✓	✓	✓
		c) Under impact/investor additionality										
		d) Backward-looking assessment							✓	✓	✓	✓
		e) Forward-looking assessment					✓					
	4. Standardisation	a) Open source	✓	✓					✓	✓		✓
		b) Prescriptive conventions	✓	✓								
		c) Consensus	✓	✓								

Legend

✓	The framework mentions or covers the criteria
	The framework does not mention the criteria



Appendix D: Additional background and technical information

This appendix provides complementary background and technical information on foundational elements of this Guide that should help the user to further understand and interpret the guidance provided in the main body of the document.

First, this appendix introduces key references that have been used in the process of developing this Guide. Second, the concept of impact, as well as the different types of impact, are explained. Third, the concept of impact valuation and monetisation is explained, and different monetisation techniques are presented. Fourth, key assumptions and limitations of the guidance provided in this document are discussed.

Key references

In developing this Guide, several existing frameworks, guides and protocols, mostly developed for fields other than philanthropy and impact investing, were used as references. This Guide adopts and follows particular elements of these references and not necessarily the entire reference. Often elements of these references were used as inspiration and were adapted to meet the specific objective of this Guide. Every effort has been made to attribute ideas and phrases to their respective sources.

Table 8 lists the key references used and specifies the relevant elements of them used in this Guide.

Table 8: List of key references used in this Guide.

Organisation	Title of publication	Relevant elements
International Accounting Standards Board (IASB)	International Financial Reporting Standards (IFRS)	-IAS 1 – Presentation of Financial Statements
International Integrated Reporting Council (IIRC)	The <IR> Framework	-Definition of the Capitals (Section 2C)
Global Reporting Initiative (GRI)	GRI Standards – GRI 101 Foundations	-Reporting Principles for defining report content -Guidance on stakeholder inclusiveness, sustainability context and materiality (Section 1)
Impact Institute	Integrated Profit & Loss Assessment Methodology (IAM): Core – Version 1.0	-Key Definitions and Concepts -Elements of Impact Statements -Guidelines and principles per stage of the process of compiling impact statements
Impact Institute	Framework for Impact Statements – Beta version (FIS Beta)	-Key Definitions and Concepts -Elements of Impact Statements -Guidelines and principles per stage of the process of compiling impact statements



Natural Capital Coalition	Natural Capital Protocol	-The Natural Capital Protocol Framework (Section 0.2)
Impact Management Project (IMP)	Impact Management Project	-Key Definitions and Concepts



Impact

This section extends Chapter 2 of the main document, and explores the concept of impact more in-depth. First, a more elaborate explanation of why this concept is relevant and interesting for impact investors and philanthropists is given. Second, a more technical definition of the concept and how it is determined is provided. Third, different types of impact, including direct and indirect impact, are presented and explained.

Why focus on impact?

Why should impact investors and philanthropists care about impact?

Assuming philanthropists and altruistic investors invest or donate to make the world a better place, they will not realise their goals by focusing on the good intentions of themselves or of the organisations that they invest in. Good intentions, while positive, will, by themselves, not make the world a better place. First, doing things with good intentions can give funders a warm glow, which, in and of itself, will help the funders, but not necessarily the world (Andreoni, 1990). Second, giving to, or investing in, organisations with good intentions is not a guarantee that those organisations will be effective in improving the world (Schubert, 2018).

If funders are indeed interested in the effect they have on the world, it is important to focus on the effect they have on those things that matter to them. Often, organisations track their inputs (how many resources did I spend) or outputs (how many products did I sell or give away). The good thing about inputs and outputs is that they are typically easy to measure. The underlying assumption is that these inputs and outputs will lead to the good things you hope will result from them. However, this is not always the case, and it is not easy to find impactful organisations (Halstead, 2018). For example, when providing agricultural training to poor farmers, one should not only track the money spent on training or the number of trainings delivered, but should also focus on the improvements in realised yield and income of the farmers after the training. Similarly, handing out malaria nets to villagers in malaria-prone areas can reduce the occurrence of malaria and, as such, significantly increase health and wellbeing, but only if the nets are used correctly.

Finally, it is necessary to focus on the difference made. Funders should not only want to know if there is a positive effect on the things that are valued but also if the outcomes have improved over time. It is important to know if this change is due to the activities of the organisation or whether the improvements would have occurred without the organisation's involvement. For example, if an increase in farmer income is due to improved economic conditions or would have increased without any training, there is no point in investing funds in it.

Why should more traditional investors care about impact?

Traditional investors and businesses are familiar with steering on impact, albeit a very specific impact: the impact on the financial wealth of investors. Traditional investors clearly steer on something they care about, their wealth (or the remuneration they receive for managing the wealth of others). They are also very much focused on results (profits, dividends, share prices) and not intentions. Finally, traditional investors are keenly aware of counterfactual thinking: regularly considering whether another investment would have delivered a higher return.

There are two reasons why traditional investors should care about impact in addition to financial returns. The first is the fact that they already possess many of the skills necessary to make an impact, so that they can apply their expertise and experience in steering on financial returns to a wider set of impacts. Traditional investors are used to the following clear picture: the input is capital from the investors, the output is the profit and the outcome is the



net cash flows available to investors. The impact is the financial return, in absolute terms or compared to a benchmark. This provides management with a simple task, at least in theory: maximise the financial return on invested capital to investors, at least over a sufficiently long period of time. With small adaptations, traditional investors can apply this logic to steering on impact. This is a unique opportunity for them, that may possibly be coupled with an intrinsic motivation to consider their impact on society. This requires tracking their impact on other Capitals – including Natural, Social and Human Capital, as well as on other stakeholders such as employees, clients and local communities.

The second reason traditional investors should care about impact is because it increasingly affects their current or future bottom line. Many negative impacts are becoming reputational and financial risks and many positive impacts are becoming financial opportunities (TCFD, 2017). For example, the carbon emissions of a company one invests in are increasingly becoming a financial cost, as governments are introducing disincentives for carbon emissions, and a number of consumers are avoiding high carbon products. Similarly, companies that produce food with health benefits have a better chance of making long-term profits than those that produce food with no health benefits.

What is impact?

In Chapter 2 impact is described intuitively as “the difference one makes in the world by having an effect on the things one values”. A more formal definition was provided as “change in a valuable and measurable outcome with respect to a reference scenario, during a given timeframe. It can be positive or negative, intended or unintended”.

The definition provided requires some technical explanation to be able to serve as a rigorous definition of impact. This is provided below.

Welfare dimensions and valuables

The starting point of impact is to determine what matters intrinsically. What matters is, to a certain degree, subjective, and, thus, funders should determine what matters themselves. Typically, this leads to a very limited number of concepts, such as wellbeing and respect of basic rights. Each fundamental concept (fundamental in the sense that it cannot be further reduced to a more basic concept) constitutes a *welfare dimension*.

For each dimension, one needs to specify valuables. Primary valuables represent things that one considers intrinsically valuable. In the wellbeing dimension this can be, for example, the wellbeing of individual people. Secondary valuables are things that are important because they can affect primary valuables in the future. For example, one may care about the employment of people because that will affect their wellbeing. An example of a secondary valuable of the respect of rights dimension is the amount of greenhouse gasses in the atmosphere. If this increases, and global warming continues, the right to a safe, clean, healthy and sustainable environment will be endangered.

A set of valuables should provide all the information a decision maker needs to know to assess the organisation’s impact and choose between alternative options. Valuables should be measurable, at least in principle. A set of valuables should be mutually exclusive and collectively exhaustive (“MECE”) over people affected, value types and time. For example, one can include either carbon dioxide and methane emissions individually or only the Global Warming Potential in the set of valuables. Including all three would lead to double counting.



There are still a number of valuables; such as happiness, self-confidence and freedom which are essential but remain, at this stage, difficult to measure.

Wellbeing as a welfare dimension

In this section, how the definition of impact works out for the welfare dimension of wellbeing is outlined. Firstly, this is relevant as it is the most common welfare dimension used in impact assessment methodologies and frameworks, explicitly or implicitly. Second, it serves to make the material provided in the previous paragraph more concrete, as the definition of impact is, in general, quite abstract.

Fundamental concept of welfare

Wellbeing is a broad notion related to the satisfaction of needs and/or preferences at the individual or collective level. Arguably, it is most intuitive to use individual wellbeing as the fundamental concept for impact.

Primary and secondary valuables

In the case of wellbeing, the primary valuable is the wellbeing of current and future individuals. Secondary valuables relate to the assets (or 'Capital assets') that affect this primary valuable in the future, such as land, water, food, shelter, health, trust etc.

A set of valuables provides a starting point for assessing impact. When conducting an impact assessment, it is desired to track both the realised wellbeing during the assessment period and the increase or decrease in assets that determine future wellbeing during the same period. This enables actually materialised effects to be taken into account (and not assume future wellbeing has occurred), while also taking future wellbeing into account. In the farmer training example, the training results in improved farming techniques, increasing the farmer's income and soil quality. The primary valuables would be the increased quality of life of the farmers' household during the assessment period, due to a higher income. The increase in soil quality would be a secondary valuable, as that would lead to higher expected future income and quality of life.

Note that in an impact pathway from a wellbeing dimension, outcomes will always be either realised wellbeing of individuals or a change in a Capital asset.

This allows us to define a wellbeing impact of an organisation as a change in Capital or experienced wellbeing during a given timeframe, attributable to the organisation.

Mutually Exclusive and Collectively Exhaustive (MECE) collection of impacts

Coming to a MECE collection of primary and secondary valuables is a key challenge. For this, it is important to have a good classification of those individuals whose wellbeing is affected (primary valuables) and the assets driving future wellbeing (secondary valuables).

Stakeholder groups

It is helpful to divide the stakeholders who are affected by an organisation into stakeholder groups, with those affected most similarly being grouped together. There is no generally accepted classification of stakeholder groups, but most classifications are similar to the following (NCC, 2016; IMP, n.d.):



- Individual clients or beneficiaries of the organisation
- Direct and indirect organisational clients or beneficiaries of the organisation
- Direct and indirect organisational suppliers of the organisation
- The employees of the organisation
- The founders of the organisation (equity-holders, debtholders, grantors)
- Local communities affected by the organisation
- Society-at-large (used for impacts – such as environmental impacts – that affect society as a whole, rather than individual groups of people)

The six Capitals

From a wellbeing perspective, there are many types of assets (secondary valuables). While, traditionally, only financial and tangible assets are measured, many non-financial and/or non-tangible assets are key for wellbeing, such as climate, ecosystems, biodiversity, trust, health, etc. FIS-Beta, inspired by the International Integrated Reporting Council, identifies six 'capitals' to which assets can belong to (IIRC, 2013; Impact Institute, 2019). In very brief form, these are:

- Natural Capital (often referred to as environmental capital) consists of all stocks of natural assets. It contains living (biotic) and non-living (abiotic) natural resources, including scarce resources, climate, and ecosystems, that provide benefits to current and future generations ('ecosystem services').
- Social Capital consists of value embedded in groups of people – from family to the global community – and includes social ties, networks, and norms. Wellbeing effects are often listed under social capital if they only occur at the level of groups.
- Human Capital consists of the value embedded in individual people. This includes their health and competences. Wellbeing impacts are listed under Human Capital if they occur at the level of individual people.
- Intellectual Capital consists of intangible assets either with or without legal rights. Intangible assets cover intellectual property, organisational capital, and intangibles associated with the brand and reputation that an organisation has developed.
- Manufactured Capital consists of all tangible assets. This reflects the assets used for production (property, plant, and equipment) and includes the tangible assets of intermediate and finished products. Business activity critically involves transfer of Manufactured Capital between stakeholders.
- Financial Capital consists of all assets that are a form of money or other financial assets, including contracts.

Appendix A provides a standard list of impacts typically used in impact assessment projects, organised by the Capital that they relate to.

Respect of rights as a welfare dimension

Observance of human rights and other well-accepted rights is a second important welfare category. Remediating harm related to non-observance of rights is at the basis of the Principles for true pricing (True Price Foundation &



Impact Economy Foundation, 2020). Most impacts under Natural, Social and Human Capital in Appendix A are related to non-observance of rights, although they typically also have a wellbeing component.

Other welfare dimensions

There are other valuables next to wellbeing and respect of basic rights that can be at the basis of defining impacts. Equality and fairness are examples. Research towards their application in impact measurement and valuation frameworks is still in an early stage and they are not discussed further in this Guide.

Types of impact

Impact, as defined above, is a broad concept. Although the impact pathway (Figure 6) gives a well-defined approach to determining impact, it gives rise to different types of impact, depending on the situation at hand, as sketched in Figure 10.

The first issue is which reference scenario is chosen (the horizontal axis in Figure 10). There are obviously many options here, but two are seen as key. The first option is the scenario in which the organisation in scope is not active and its activities are not replaced by other organisations. This gives rise to what is called “absolute impact”. The second is the scenario in which the organisation is not active and the activities that are expected to occur in the absence of the organisation are determined, for example, competitors stepping in for the organisation. This gives rise to “marginal impact”.

The second issue is whether the activity (the vertical axis in Figure 10) is performed by the organisation in scope itself, giving rise to “direct impact”, or by other organisations influenced by the organisation in scope, giving rise to “indirect impact”. This framework is applied in Part II of this Guide. In addition, a further distinction is made concerning whether the other organisations are part of the value chain of the organisation under study.

		Type of reference scenario	
		Absolute impact	Marginal impact
Activity by organisation in scope or not	Direct impact	Direct absolute impact	Direct Marginal impact
	Indirect impact	Indirect absolute impact	Indirect marginal impact

Figure 10: Different types of impact.

The combination of these two issues gives rise to four types of impact:

- Absolute direct impact
- Marginal direct impact
- Absolute indirect impact



- Marginal indirect impact

The remainder of this section provides an argument for why a clear understanding of all these types of impact is relevant for impact investors and philanthropists. Using the four types of impact, along with, among others, financial, organisational and legal information in decision-making is beyond the scope of this Guide.

Absolute and marginal impact

Absolute impact

Absolute impact provides information on the impact of the activities themselves. In this regard, it is not relevant whether the activities are executed by the current organisation or by another organisation that would execute them in the same or a very similar manner.

An important property of absolute direct impact is that it is additive. The total impact of an economy is the sum of the absolute direct impact of all organisations in that economy.

Absolute impact is typically used to assess negative externalities. For negative externalities, the absolute direct impact gives the amount of damage that is directly related to the operations of the organisation in scope. For instance, for contribution to climate change, the absolute direct impact is simply carbon emissions from the company's own operations. The Guiding Principles on Business and Human Rights (UNHR, 2011) and the OECD Guidelines for Multinational Enterprises (OECD, 2011) state that (multinational) businesses have a responsibility to remediate the negative impact of their operations. Focusing on absolute impact avoids the impression that companies do not need to act because they perform as good as, or better than, their competitors.

Marginal impact

While the reference scenario for absolute impact can sometimes be trivial, this is not the case for marginal impact. Marginal impact is the difference between the outcomes of the activity of the organisation and the outcomes of the expected activities that would occur in the absence of the organisation's activities, which are typically not trivial. The best approximation of marginal impact consists of a weighted average of multiple reference activities. Typically, this scenario is the best estimate of how other organisations would react if the organisation in scope would not perform its activities. For an organisation that has direct competitors, this can, for instance, be the scenario where those competitors take over the market share of the organisation. If these competitors do not act in the same way as the organisation in scope, marginal impact reflects the difference in the outcomes of the two types of actions.

Marginal impact can be large in scenarios where there are no developed alternatives in the local market. For example, a life insurance company in a rural part of Ghana will likely have a large marginal impact: in the reference scenario, a likely alternative is that no insurance is available. On the other hand, the same life insurance company operating in an urban part of France is likely to have a much smaller marginal impact. In France there are many alternative health care providers, with relatively limited differences between them.

For example, investors can consider investing in an organisation whose operations are associated with external costs, but significantly less costs than those of its alternatives (that is, if products are produced by the competition, they have higher external costs per unit product). In this case, the marginal impact shows a positive contribution



to society, as each product produced by the organisation means that one fewer product is produced by the competition – with correspondingly lower external costs.²⁴

Direct and indirect impact

Direct impact

Direct impact is the impact that follows from the own operations of an organisation. Typically, the organisation has strong control over whether this impact occurs or not. In impact investment decisions, the direct impact is almost always a relevant factor, although indirect impact can be similarly important, as discussed in the next section.

Indirect impact

Many organisations have some form of influence on the direct impact of other organisations, and, as such, have some form of responsibility for this impact. This indirect impact is thus an important part of the impact to steer and report on. This is, for instance, reflected in the Greenhouse Gas Protocol (GHG protocol, n.d). While Scope 1 purely focuses on emissions from own operations, Scope 2 (purchased or acquired electricity, steam, heat and cooling) and Scope 3 (corporate value chain) both reflect the importance of indirect impacts.

Indirect impact can be divided into *value chain impact* and *system impact*. Indirect impact within the value chain is the impact that is generated somewhere in the organisation's value chain; either upstream (impact at suppliers and suppliers of suppliers) or downstream (impact at business clients or clients of clients). Value chain impact is almost always relevant for enterprises and is typically less relevant for non-profits. Indirect impact within the system is the impact that is generated outside of the organisation's own value chain.

Almost all organisations have suppliers (and thus value chain impacts), the selection of which is an active process. If they select a supplier that has better impact, this can have as much of a total effect as optimising their own operations. Enterprises who do not (only) have individual consumers as clients also always have downstream impact.

An example of value chain impact is when organisations work to change the operations of their suppliers. Some chocolate companies, for example, work towards reducing child labour at cocoa farms and/or paying a higher price than the industry average to farmers.

Another mechanism is when enterprises use a different production model requiring different inputs. This is illustrated in the example of 'Rosie's II' that runs throughout Part II. It is explained that 'Rosie's II' uses a different method to grow roses (a so-called hydroponics farming system) than their competition. This helps them to produce with lower amounts of energy, water and chemicals, thus reducing their indirect value chain impact.

System impact occurs when there is impact at organisations with whom there is no economic link. For non-profits, this can be very important. Lobby and advocacy fall into this category. Enterprises can also have system impact, if, for example, they induce changes in the sector by setting a new norm or introducing new technology.²⁵ These

²⁴ The example of the fictitious rose producer 'Rosie's II' that runs throughout part III of this document is exactly of this type.

²⁵ Part II also contains an impact of this type, where 'Rosie's' example (mainly in providing an effective anti-harassment system) stimulates other organisations in the sector to improve their systems for dealing with harassment.



impacts are usually more difficult to measure, as it is more complicated to forecast changes in value chains that are far removed from the organisation in scope and depend on the actions of other actors.

Part III provides guidance on the calculation of indirect impacts. For organisations that produce in value chains, the assessment of indirect impact typically requires the calculation of all impacts over the entire value chain. This can give rise to very large results, as some companies may play a small role in very extensive value chains; think, for instance, of a company that produces a single screw that is part of every car in the world. Therefore, users should exercise caution when interpreting and making decisions based on indirect impact.



Impact valuation and its techniques

Impact valuation

Impact valuation is the step of impact assessment where the impacts are made to reflect their value. In more technical terms, it is the assessment of the normative desirability of an impact, from the perspective of a stakeholder, in a quantitative unit reflecting the impact's value to that stakeholder.

Impact valuation is thus linked to decision-making within an impact dimension. Alternative A should be valued higher than alternative B, if alternative A is preferred to alternative B.

Valuation is helpful if one wants to compare alternatives, as, typically, quantified impact data is not sufficient. With quantified impact data it is only possible to compare two options if their impacts are of the same type. Without valuation, it is almost impossible to compare, for example, one alternative that has large environmental impacts with one that has large social impacts. In this case, trade-offs between impacts need to be made which require some form of weighting the impacts.

Often there are trade-offs between Capitals – one alternative is better for Financial Capital but worse for Natural, or better for Natural Capital but worse for Social. The same can hold for stakeholders, where one alternative may be, for example, better for farmers but worse for consumers. Even within Capitals and stakeholders, impacts often conflict: increasing water use can increase yields, requiring less land, but can result in depletion of blue water reservoirs.

Impact valuation is most meaningful within one dimension. For example, for wellbeing as a welfare dimension, one can find a measure of aggregate wellbeing, such as the sum of healthy and satisfied life years. Calculating impact based on the welfare dimension requires a few normative principles, such as an equal (impartial) consideration for the wellbeing of all of the individuals involved.

For the respect of rights dimension one can use the remediation costs, i.e. the steps that must be taken to repair the harm, as a source for impact valuation. The underlying assumption of this is that harm caused by the infringement of rights should be avoided or remediated and cannot be offset one-on-one with benefits. For example, the occurrence of forced labour or deforestation that can be valued at 10 million dollars, cannot be offset by eleven million dollars of profit for shareholders, at least not according to a justice perspective.

Within one welfare dimension, one can find relatively objective techniques to value impact, given relatively intuitive principles. Impact valuation across dimensions is more subjective. It is much harder to find techniques to compare, for example, fairness versus wellbeing. In this case, it can often be better left to the individual decision-maker to make a valuation function, or weigh the trade-offs intuitively or procedurally.

Impact monetisation

Impact valuation implies expressing the value of various impacts in a common unit. This unit need not be monetary. For wellbeing, for example, it can also be life-satisfaction years. In practice, a monetary unit is often used as it is more relatable. It is being increasingly adopted by Impact assessment methodologies such as Harvard Business School's Impact-Weighted Accounts (Harvard Business School, 2020). One benefit of this is that It allows the comparison of the impacts to the investment made.



Note that if a monetary unit is used, it reflects desirability; positive impacts with a high monetary value are very desirable, and negative impacts with a high monetary value are very undesirable. Therefore, impact valuation is, in practice, typically done through monetisation. Impact monetisation is defined as the process of translating an impact expressed in a non-monetary unit into an impact expressed in a monetary unit.

When monetisation is applied to all impacts in an analysis, a crucial property appears: all impacts are expressed in the same unit. This makes it possible to compare impacts within one type of impact (e.g. direct marginal impact) and find the net positive impact created by the organisation. Additionally, impacts cannot only be compared to each other, but also with standard profit metrics and investment or donation volumes. Funders can ask themselves questions such as whether it is worthwhile investing or donating X million to get a net positive impact of Y million. This additionally provides a common language for companies and investors to integrate thinking and communication. Most importantly, monetisation provides the necessary insights and comparable information to funders to make informed decisions and steer on impact.

Despite these clear benefits, some challenges to monetisation can also be pointed out. First, considerable time and effort is needed to come to a (global) standard, which is necessary to move towards integration. Second, some parties argue that social impacts with an ethical dimension, such as child labour, cannot be given a monetary value at all, as this cannot be done in a reliable way, and may imply that infringements of rights are tolerated (Accounting for Sustainability, 2012).²⁶ Third, some argue that it is not yet possible to monetise specific impacts, due to the lack of reliable primary data for deriving reliable monetisation factors. Fourth, concerns have been expressed by some regarding the economic valuation of nature and ecosystem services, as ‘the most valuable of these have unlimited value and no known alternative’ (Rundgren, 2017). It has also been suggested that monetisation, especially when it comes to natural capital impacts, may lead to the so-called commodification of nature, i.e. the conversion of nature into an object that can be bought and sold on the market. Finally, another critique often expressed is linked to the possible negative effects of netting different positive and negative impacts together. For example, expressing all impacts in monetary terms and then combining them in a single metric might lead to an overall net positive impact, which in turn might obscure significant negative impacts. A large positive impact in terms of wellbeing effects of employment should not be considered to compensate for the presence of child or forced labour in the value chain.

This goes to show that monetisation is, naturally, not a foolproof technique of impact valuation. Possible limitations regarding specific impacts need to be acknowledged, and it should not be treated as a one-off guidance for making decisions. That is, it may be controversial whether one should attach a value to a person’s life and then implicitly rank this value against other impacts (True Price, 2014). It is also always advisable to combine monetisation with qualitative information to get the complete picture when making decisions (The Economics of Ecosystems and Biodiversity (TEEB), 2018). However, some of the challenges presented above can be actually mitigated by the approach to valuation presented in this Guide.

²⁶ The Accounting for Sustainability Project commissioned research among Board members and other senior managers of large companies and public sector organisations about integrating environmental and social factors into decision-making, which shows that: ‘Regarding economic valuation of environmental and social impacts, different information and data were considered to have differing credibility and robustness. For example, respondents felt most comfortable with carbon pricing, which was widely seen as relevant, tangible and applicable across sectors (although few raised the issue that current carbon prices are arbitrary and reflect only a small proportion of the true societal cost)’ (Accounting for Sustainability, 2012).



Monetisation can precisely serve as a tool to respect human and other widely accepted rights, as respecting rights implies remediating them, when violated. As previously explained in this appendix, welfare can have multiple dimensions, and rights is one of them. If rights are a specific welfare dimension, valuation of impact does not lead to a netting of rights-violations with, for example, profit. Although avoiding the occurrence of these violations in the first place is always preferable, expressing them in monetary terms can aid in ensuring that the rights of everyone are respected.

Monetisation paradigms and techniques

One can distinguish three main monetisation paradigms:

1. Cardinal utility paradigm
2. Abatement cost paradigm
3. Remediation paradigm

We will give a description of each paradigm and some of the main techniques used in each paradigm.

Cardinal utility paradigm

In the cardinal utility paradigm, the welfare effects are quantified. This paradigm has its basis in welfare economics. It has its origin in economists that, for public policy, wanted to find ways to estimate the value of non-market goods. More recently, economists also became interested in more wellbeing-oriented approaches to valuing goods.

Important techniques include:

- **1-on-1 monetisation.** Impacts that are naturally expressed in monetary terms are typically valued using 1-on-1 monetisation. That is, the original monetary values are assumed to represent identical changes in welfare expressed in monetary equivalents. If a stakeholder receives money, it represents a positive impact, and if a stakeholder gives up money, it represents a negative impact.²⁷ 1-on-1 monetisation has the important limitation that it does not take into account that a certain amount of money can represent more wellbeing to one stakeholder than to another.
- **Revealed preference.** Here, the preference of people is derived from their choices. This can be done via empirical data. For example, in the travel cost method, the travel costs that people are willing to incur to visit a recreation area can be used as a proxy for the value of it. Another method is hedonic pricing, where the value of public goods, such as safety of parks, is deduced from the price of market goods that are partly determined by the public goods, such as the price of housing. Revealed preferences can also be deduced from field or incentivised laboratory experiments.
- **Stated preference.** In stated preference techniques, people are asked about their preferences and their willingness-to-pay for, or willingness-to-accept, non-market 'goods' or 'bads'.

²⁷ Often if a stakeholder gives up money, they do so because they receive something in return. Think of a consumer buying a product. His payment represents a negative flow in Financial Capital to him, the fact that he gets a bread in return is reflected in a positive flow of Manufactured Capital. For rational buyers, it holds that they only buy a product if the product is at least of equal value to what they pay - that is, the gain in Manufactured Capital is equal to or larger than the loss in Financial Capital.



- **Subjective wellbeing.** In the subjective wellbeing approach, people are asked about their subjective wellbeing (such as their satisfaction with their health or life), and the reported measures are associated with variables that can explain this wellbeing using (large) population datasets and statistical techniques. To monetise impacts, the income equivalence technique can be used: how much extra or less income is needed to realise the same amount of subjective wellbeing given a negative impact (such as a disease) or positive impact (more safety).

Typically, revealed preference is preferred for impacts for which good market data is available, whereas the subjective wellbeing approach is preferred if this is not the case. Stated preference is usually recognised as being less reliable.

Abatement cost paradigm

The abatement cost paradigm considers the extra costs that have to be made, due to an impact, to reach a policy goal. For some impacts, it can also be used to calculate how many costs can be saved if an impact contributes to a policy goal in a positive way. For example, if a government has set, as a policy target, limiting GHG emission levels to align with a 1.5 degrees global warming scenario, it can be estimated how much the government needs to compensate for an extra ton of CO₂ emitted by a company.

The abatement cost paradigm utilises the following cost approaches, corresponding to policy instruments:

- **Restoration costs** are the costs to restore the situation prior to when the impact had occurred (e.g. take CO₂ out of the air).
- **Prevention costs** are the costs required to prevent an impact from occurring or re-occurring, e.g. the cost of a CO₂ tax.
- **Replacement costs** are the costs required to replace a damaged public good. For example, if a mangrove forest protects an area from flooding, the replacement cost would be the construction costs of dams that provide an equivalent level of protection from flooding.
- **Compensation costs** are the costs required to compensate individuals for extra damages exceeding the policy goal.

Remediation paradigm

Remediation costs apply to costs that involve breaches of rights. They are an umbrella term for the costs of actions that need to happen to mitigate the negative effects associated to these costs as much as possible. Remediation costs can include the cost of restoring damage, where that is possible, and the cost of compensating affected people and communities for residual damage. Additionally, remediation costs can include the costs of measures to prevent re-occurrence of the breaches of rights and punitive elements that reflect the element of injustice. For more on this paradigm, see also True Price Foundation & Impact Economy Foundation (2020).

The remediation paradigm shares similarities with the abatement cost paradigm, but differs in two ways. First, unlike the abatement cost paradigm, it focusses on respecting individual rights rather than reaching a policy goal at a country level. Second, it considers not just governments but also individual market players, such as citizens and organisations, as actors. These latter actors would make use of voluntary actions in order to abate harms under this paradigm, while governments would execute mandatory policies, at least where they have jurisdiction. So, whereas



governments could abate carbon emissions by, for example, banning fossil fuel use, individuals or organisations can voluntarily capture carbon from the air. Practically, techniques from the welfare paradigm can often also be used to calculate remediation costs.

Approach to monetising positive and negative impacts

Of the various techniques, the WBCSD identifies cost-based approaches, revealed preference and stated preference, as the most popular methods (WBCSD, 2011). Aside from these, this report also mentions the benefit transfer technique, which is a systematic method to transfer valuation coefficients from one context to another.²⁸

The monetisation of negative impacts typically proceeds through one of the following cost-based approaches: restoration cost, prevention cost or damage cost (the costs that represent the negative welfare effects).^{29,30} Two examples show possible ways to apply these techniques:

- The impact of water use in water-scarce regions can be monetised using the costs of desalinating seawater (restoration cost). In regions where water is not scarce, using water does not create a burden to society and therefore does not need to be priced.
- The 'costs' of occupational accidents resulting from unsafe working conditions can be monetised by taking into account e.g. medical expenses for treatment and the loss of quality of life (compensation costs).

Useful references for monetisation of negative externalities include (True Price, 2019), (Bruyn, et al., 2010) and (EcoCost, n.d.).

The main suggested techniques to monetise positive impacts are revealed preference and subjective wellbeing. Where possible, it is advised to use 'revealed preference' (people's actual willingness-to-pay for a service) over 'stated preference' (that is less robust). For specific positive impacts, a cost-based approach can also be applied. This calculates the reduction of the negative impacts of other actors. Two examples demonstrate the different approaches:

- There is a platform where lonely elderly people receive food and company from hobby cooks. The impact can be monetised by looking at what it would cost for official institutions (e.g. elderly care) to provide the same care. This example makes use of benefit transfer and the revealed preference approach (as the actual costs that people use for alternative care are used).

²⁸ E.g. using the value of ecosystem services for a rainforest in Brazil to estimate the value for Indonesian ecosystem services.

²⁹ The concept of abatement cost is often used in this context. Abatement costs are the costs to reach a certain policy goal. As that goal might be to keep certain negative externalities in check (e.g., to restrict global temperature increase to 2 degrees Celsius), it can be applied to cost negative externalities. At a practical level, abatement costs include elements from, among others, restoration and prevention.

³⁰ The true price method recommended to monetise costs at product level in a true pricing context uses remediation as a central concept in monetisation. The monetisation approach includes elements of restoration, compensation, prevention of future damage and retribution in such a way, that, when a user actually pays the true price, all harm associated with the product is restored, prevented and mitigated as much as possible.



- A company builds technology that captures CO₂ out of the air. This company has a positive impact on society by removing the harmful emissions of other organisations. The company's positive impact is equal to the cost of the negative impacts of the organisations that pollute (cost-based approach).

Appendix B contains a list of sources that can be used for the monetisation of specific impacts within each of the six Capitals.



Key assumptions, limitations and uncertainty factors

The key assumptions and limitations of the approach of assessing and valuing impact chosen in this Guide, for which practical guidance is given in Part II, are provided here.

Key assumptions of the Guide

The method provided in the Guide itself is quite general and has a limited number of key assumptions.

Specifically, it is assumed that:

- The desirability of actions should be assessed through a primarily consequentialist approach. Rights and other deontological considerations can play a role, but always in the context of consequences. Although one could fit intentions into the measurement framework, this is rather unintuitive to the chosen approach.
- It is possible to quantify the consequences of actions on the things that matter.
- Normative preferences can be expressed, at least partly, in quantitative valuation functions. This is not as strong an assumption as it seems, as it can rely on a chosen theoretical foundation that takes preferences as the object for quantification, rather than values.
- Valuation includes the underlying assumption that wellbeing can be valued in monetary terms and, while wellbeing is not equated to money, monetary terms are used as a numeraire.
- It is not only possible to quantify consequences and preferences, but also that it is helpful to do so, i.e. that the benefits outweigh the costs. In other words, the assumption is that the quantification and monetisation approach “work”. This means that the values that the various monetisation techniques assign to impacts, realistically reflect the relative importance of the impact.³¹ This assumption also holds for the comparability of value created for different stakeholders and the comparability of value now and in the future.

Key limitations of the Guide

The first key limitation of the Guide is that the scope is limited to assessing and valuing the impact of organisations. To use impact information for investment decisions, the different types of impact need to also be aggregated, either numerically, procedurally or heuristically. In other words, to make decisions on the basis of the information provided by applying the Guide, decision makers also need to find either a quantitative method, a qualitative approach or a procedure to integrate the various types of impact. Secondly, to make funding decisions, impact needs to be aggregated to the portfolio level and funder impact and ‘investor additionality’ need to be taken into account. The current Guide does not provide guidance on these two matters.

The other key limitation is a lack of conventions about how to make methodological and data choices, and a lack of accessible techniques to adapt methods to worldviews. For funders interested in a standardised approach, the main limitation in this regard is that there are not yet many conventions. For funders interested in a very idiosyncratic approach that reflects their own worldview as closely as possible, the main limitations are that there is a lack of available techniques to adapt assessment and valuation methods to worldviews and a lack of knowledge among funders about how valuation techniques work.

³¹ See ‘Impact valuation and its techniques’ in the same appendix.



Key assumptions of applications of this Guide

Even though the method in this Guide has only a limited number of (rather general) assumptions, any concrete application will, at least at this point in time, have quite a few normative and descriptive assumptions. The lack of impact data will mean that many estimates will have to be made about the forecasted consequences and the reference scenario. Similarly, the lack of monetisation data will often mean that valuation coefficients will have to be based on approximation and techniques such as benefit transfer. The selection of impacts and their valuation will also always require normative assumptions.

Key limitations of applications of this Guide

As a consequence of the number of assumptions that will have to be made, results of impact projections will necessarily have a significant degree of uncertainty. Impact projections require the same judgements as financial projections (e.g. projections of future net cash flow of potential investees), so that best-case and worst-case projections will diverge quite significantly. In addition, impact projections have some other sources of uncertainty. This includes choices in the scoping stage of the analysis,³² input data quality, the use of estimates (in case actual data is not available), and the selection of universal data, such as monetisation factors.

The guidance section of this document (Part II) tends to give rather cautious guidance that should help achieve results with relatively low uncertainty. However, applying this guidance can take a significant amount of time if an inexperienced user does not have access to tools, data and training. As shown in Appendix C, there are also gaps with respect to the availability of tools, data and professionals with the required experience and competences to efficiently carry out an assessment. Time can also be traded against precision. The building of impact pathways (required to identify impacts) and data collection are typically demanding in terms of time. A less time-consuming process is possible if the scope is limited (see Chapter 4) and average sector data is used where possible (see Chapter 5.3.2). Both will reduce the precision of the results.³³

Linkages and comparison with existing approaches to impact

A comparative analysis of existing literature and the approach chosen in this Guide is presented here. It includes both a summary table and a discussion of some of the key similarities and differences.

Table 9 shows a comparison between the existing literature and this Guide. On the vertical axis, it lists a number of choices that are made in this Guide, relating to the steps described in Table 8 (see Appendix C). On the horizontal axis, there is a list of the nine frameworks discussed in the landscape mapping in Appendix C and the key references listed in Appendix D. For each choice listed on the vertical axis, it compares the choice made in this Guide with the choices made in other frameworks. If there is a major difference in the approach or the level of detail, it provides a brief overview of the key differences.

From the table, some important similarities and differences can be identified. The first is the choice to include a broad scope analysis based on the six Capitals. Inspired by the IIRC (2013), this Guide recommends measuring impact

³² See Chapter 4, if relatively large impacts are left out accidentally, the results might be an underestimate of the actual impact.

³³ Impact Institute and True Price aim to mitigate the practical limitations by working towards specific guidance on measuring and valuing individual impacts. This is to include pathways and universal data points. In addition, software tools are under development to enable quicker data collection and calculations (Impact Institute, True Price and partners, upcoming).



on all six Capitals: Natural, Social, Human, Intellectual, Manufactured and Financial. Many other frameworks, such as the Navigating Impact Project or the Impact Genome Project[®], do not refer to Capitals at all but rather measure outcomes, such as education or health. Similar to this Guide, frameworks such as PwC's Total Impact Measurement & Management (TIMM) framework and the NCC's Natural Capital Protocol (NCP) calculate impact in Capitals. However, they opt for a narrower scope, covering a smaller set of Capitals.

Additionally, this Guide places a lot of emphasis on indirect impact, offering a distinction between types of both direct and indirect impact. An emphasis on indirect impacts is uncommon in most of the reviewed frameworks. While PwC and NCC discuss indirect impacts, they do not explicitly distinguish between value chain and system impacts. System impacts are impacts that arise outside of the value chain of the organisation being studied (see Glossary for more information), and they can be important impacts to assess, as they can potentially be very large.

Other frameworks also do not distinguish between absolute and marginal impact. The frameworks focusing on impact investing that also use reference scenarios typically adopt an approach similar to marginal impact. The choice of reference scenario is often similar to what would be chosen for marginal impact calculation in this Guide. Those focusing on corporate reporting (IIRC, GRI, IASB), usually use an absolute impact approach. Others, like the NCC, use either absolute or marginal impact, depending on the situation and thereafter choose a reference scenario.

Similar to this Guide, most of the frameworks which value impact do it based on normative preferences, and many of the frameworks employ impact monetisation in some form. The most popular paradigm is cardinal utility and makes use of revealed preference techniques, such as willingness-to-pay. Only the NCC appears to recognise a combination of both welfare and abatement paradigms.



			Impact Management Project	The Navigating Impact Project	Impact Genome Project®	B Impact Assessment	The Rise Fund	GiveWell	Bill & Melinda Gates Foundation	Large professional services firms	Social Return on Investment	International Accounting Standards Board (IASB)	International Integrated Reporting Council (IIRC)	Global Reporting Initiative (GRI)	Natural Capital Coalition		
1. Assess impact	a) Impact identification	Six capitals									x		✓		x	Other frameworks and approaches do not study impact on all six capitals. Some limit the scope to only one or two capitals and others define areas of impact such as education or health rather than looking at the specific impact on capital.	
		Direct and indirect impacts			x				x	✓					✓	Many frameworks do not mention impacts beyond the organisation, a few such as B-impact mention that you should be aware of the activities of your suppliers. Only PwC and the Natural Capital Coalition also study value chain impact.	
		Reference scenario	x								x	x			✓	Many frameworks refer to a baseline or counterfactual scenario which is often the same or similar to the reference scenario used to calculate marginal impact.	
		Stakeholder groups	✓	x		x						x			x	✓	Many others refer to stakeholders but do not define clear groups.
	b) Qualitative impact assessment	Materiality assessment	x			x	x									x	Materiality style assessments are the end goal for some frameworks, especially if the framework does not include a quantitative assessment, and as such are more detailed and focus on the materiality of the impact, disregarding strategic focus and feasibility.
		Expert judgement					✓	✓							✓		
	c) Quantitative impact assessment	Absolute and marginal impact							x			x				x	Marginal impact is common among those who quantitatively assess impact and use a reference scenario. No framework suggests that both should be measured.
		Impact pathway-based								x	✓	x				x	Some framework study key drivers of impact and many map the relationship between inputs, outputs and outcomes but do not map outcomes into impacts.
	2. Value impact	a) Impact weighting	Weight using valuation			x		x								x	Impacts are weighted based on a variety of different factors and are given a score on a defined scale.
b) Impact valuation		Express impact in a common unit			x	✓			✓	✓				✓	The valuation is based on a predominately qualitative assessment.		
		Based on normative preferences			✓	✓	✓		✓	✓				✓			
c) Impact monetisation	Express impacts in a common monetary unit					✓			✓	✓				✓			
		Suggested approach: welfare and abatement							x	x				✓	Many use welfare based approaches and use willingness to pay as a monetisation method. Abatement costs are not mentioned by most frameworks.		

Key differences

Legend

✓	The framework uses an approach the same or very similar to this guide.
x	The framework uses an approach with major differences to this guide.
	The framework does not include direction or information on this topic.

Table 9: Comparison of this Guide with existing literature.



Appendix E: Additional guidance on Rosie’s Roses II

This appendix is an extension of the Rosie’s Roses II example which runs through Part II (the guidance part) of this Guide. For simplicity, the example in Part II focuses on only one impact, contribution to climate change. This appendix will elaborate on this by developing two other impacts, harassment and payments to employees, which the user can refer to while reading Part II. The example boxes in this appendix are numbered to correspond with the example boxes in Part II.

Rosie’s Roses II

Example Box 20

Make impact pathways of the impacts in scope

Harassment

Rosie’s II implements a system to reduce harassment on their farms. Unfortunately, it is not 100% successful, and there are still some instances of harassment – this is illustrated by the absolute impact. However, Rosie’s II is better than the other rose farms it substitutes - a point represented by the marginal impact. Further, Rosie’s II is a leading rose producer in sustainability, and they have an indirect effect on the sector by setting an example. This influencing effect is shown by the indirect impact pathway.

Direct absolute impact

		Input	Activity	Output	Outcome	Impact
Activity	Rosie’s II is in operation	Employees (supervisors and workers) required as input	Rosie’s II implements a harassment monitoring system	Harassment incidents occur, but a relatively low number due to the monitoring system	Welfare decreases for harassed employees (a relatively low number)	Absolute impact Harassment occurs and well-being decreases to some degree (negative impact)
Reference	Rosie’s II is not in operation. Global volume of roses drops (their volume is not taken over by competition)	No employees (supervisors and workers) required as input	No farms on which to implement systems	No harassment	Welfare does not decrease	

Direct marginal impact

		Input	Activity	Output	Outcome	Impact
Activity	Rosie’s II is in operation	Employees (supervisors and workers) required as input. A low number required.	Rosie’s II implements a harassment monitoring and hydroponic system	A low number of harassment incidents are likely to occur. Workers have high productivity.	Welfare decreases a small amount	Marginal impact Rosie’s II roses replace some conventional roses from the market. A lower number of incidents (and less of a decrease in well-being) occur than without Rosie’s II (positive impact)
Reference	Rosie’s II is not in operation. Global volume of roses stays constant (extra volume is taken over by competition)	Employees (supervisors and workers) required as input. A high number required.	Other farms implement neither a harassment monitoring nor hydroponic system	A high number of harassment incidents are likely to occur. Workers have low productivity.	Welfare decreases a large amount	



Indirect (system) marginal impact

		Input	Activity	Output	Outcome	Impact
Activity	Rosie's II is in operation	Employees (supervisors and workers) required as input. A low number required.	Competition notices the Rosie's II example & monitoring systems implemented at a higher pace.	Harassment incidence decrease quickly over time at competition	Welfare decreases a small amount in sector	Marginal impact The example set by Rosie's II leads to sector wide decrease in harassment and associated well-being loss (positive impact)
Reference	Rosie's II is not in operation and therefore does not act as an example	Employees (supervisors and workers) required as input. A high number required	Other farms develop without Rosie's II example & monitoring systems implemented at a low pace.	Harassment incidence decrease slowly over time at competition	Welfare decreases a large amount in sector	

Payments to employees

Rosie's II pays their workers a living wage. This is simply their absolute impact. However, the hydroponic systems of Rosie's II are more labour efficient than traditional farming methods, and so they hire fewer workers, but at a higher wage. This is their marginal impact. Again, they do not influence the sector generally on this point and so there is no indirect impact.

Direct absolute impact

		Input	Activity	Output/Outcome	Impact
Activity	Rosie's II is in operation	Employees required as input.	Rosie's II implements a hydroponic system and a living wage for all employees	Workers are paid	Absolute impact Payments to employees (a positive impact)
Reference	Rosie's II is not in operation. Global volume of roses drops (their volume is not taken over by competition)	No employees required as input.	No hydroponic system and no wages	No workers are paid	

Direct marginal impact

		Input	Activity	Output/Outcome	Impact
Activity	Rosie's II is in operation	Employees required as input. A relatively low number required.	Rosie's II implements a hydroponic system and a living wage for all employees	Low number of workers are paid living wage	Marginal impact Rosie's II roses replace some conventional roses from the market. A lower amount of wage payments to employees than without Rosie's II
Reference	Rosie's II is not in operation. Global volume of roses stays constant (volume is taken over by competition)	Employees required as input. A relatively high number required.	Other farms do not use a hydroponic system nor implement a living wage	High number of workers are paid less than living wage	



Rosie's Roses II

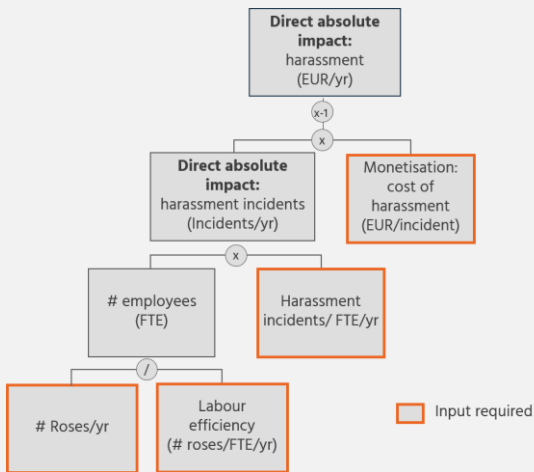
Example Box 21

Define the methods for assessing and valuing the impacts in scope

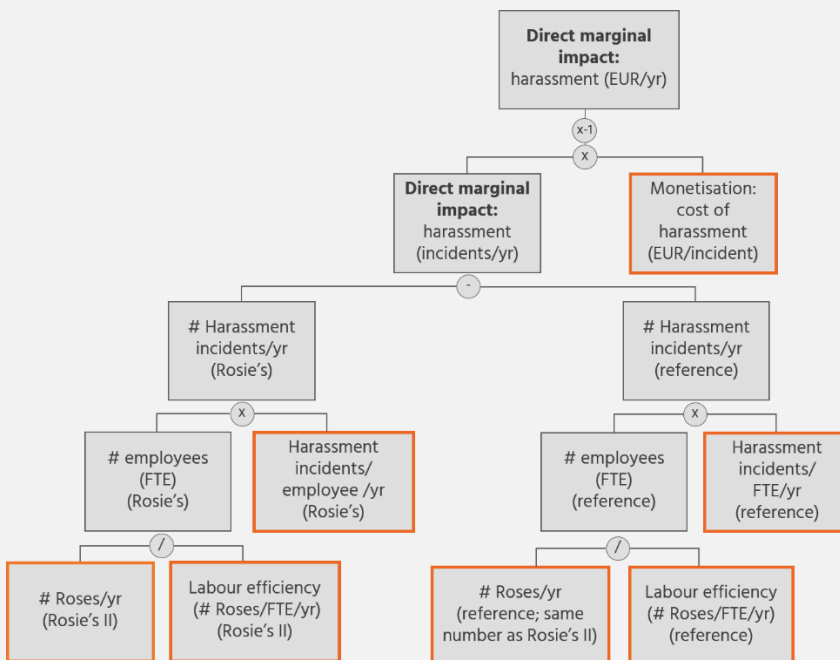
Below are the calculation trees for the impact pathways that have been defined previously. All calculations are on a yearly basis.

Harassment

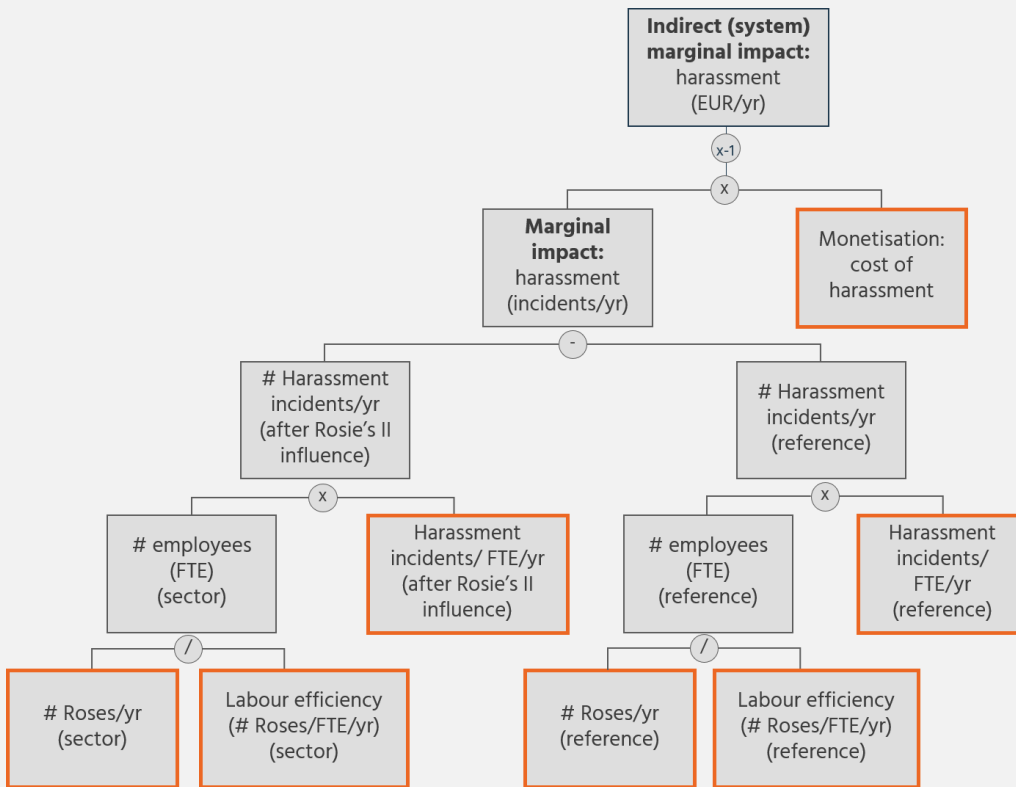
Absolute impact: direct.



Marginal impact: direct.

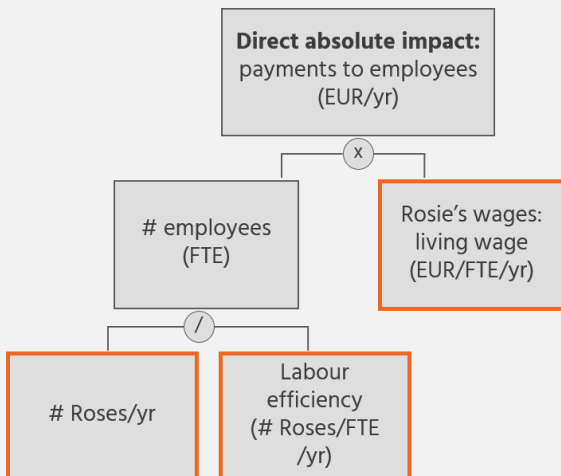


Marginal impact: indirect impact in the system.

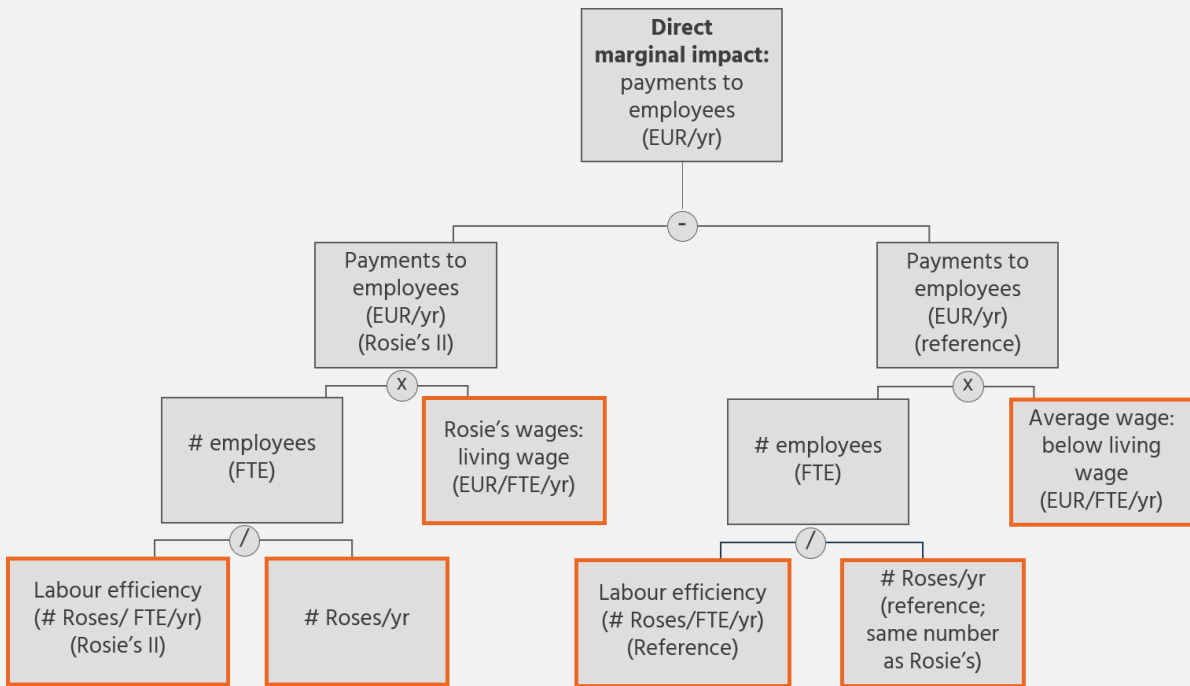


Payments to employees

Absolute impact: direct



Marginal impact: direct



Rosie’s Roses II

Example Box 22

Collect the best available input data and projections

Here the data inputs identified in the previous step are collected and are projected over the 20-year timeframe. Most of the data on Rosie’s came from the organisation itself. The effects of their harassment monitoring system were well recorded during their implementation at Rosie’s I and this is used here to predict their success. Data on the output of Rosie’s II and employee numbers were also provided by them and were checked by the accompanying financial due diligence report. Finding data on the reference activity involved consulting secondary data sources and up-to-date academic literature. A summary of the data and corresponding projections is found in the table below. Conservativeness was applied throughout the data process.

Rosie’s II data

Input data point	Starting value	Projection and source
# Roses/ha/year	850,000	Hydroponics increase yield by a maximum of 39% and this comes into effect 5 years after implementation. Roses increase steadily from industry average in year 1 to 39% higher in year 5 and then remains constant. For the reference, research estimates that yield efficiency is likely to develop slowly. The projection is that it remains constant until year 5 when it will slowly start to increase at a constant rate.
Size Rosie’s II (ha)	40	Obtained from Rosie’s data
# Roses/FTE/year	49,500	Hydroponics are 35% more labour efficient. This change occurs immediately and then remains constant.
# Harassment incidents/FTE	0.2	Rosie’s supervisor screening and harassment complaint auditing system has a large effect and reduces harassment incidents by 50% within 2 years. Harassment incidents then remain at that level.
Wage/FTE/year	€2,865	Rosie’s pays a living wage to all employees. This is implemented immediately and remains the same throughout.
# Roses/FTE/year (average farm)	32,200	Like yield efficiency, this is likely to develop slowly. The projection is that it remains constant until year 5, when it will slowly start to increase at a constant rate.
# Harassment incidents/FTE (average farm)	0.2	Harassment is a well-documented and common problem in the region; academic institutions have conducted regional surveys (Jacobs, Brahic, & Brahic, 2015). It is again predicted that it remains constant until year 5, when it will slowly start to decrease at a constant rate
Wage/FTE/year (average rose farm)	€2,200	This was obtained via government databases and is unlikely to change by a significant amount for the first five years, after which we expect the industry will slowly start to change and wages slowly improve.



Rosie’s Roses II

Example Box 23

Impact valuation

The example below shows the calculation of the monetisation factor for harassment. The method chosen for harassment is relatively complex. A simpler factor – e.g., including just one of the effects identified – can be used instead, especially in a more exploratory analysis.

Harassment

Cost of harassment	EUR/worker	22,800
--------------------	------------	--------

There are three components involved in the monetisation of harassment:

- 1) Restoration costs: these are the medical costs (including mental health care) to help victims of harassment get their life back on track as well as possible.
- 2) Compensation costs: This a measure of the wellbeing loss from harassment due to long-term mental health impacts. It is quantified in Disability Adjusted Life Years (DALY), combining World Health Organisation (WHO) literature on health consequences of adverse working conditions and disability factors for various health conditions. DALY loss depends on the nature of harassment (physical or non-physical; sexual or non-sexual). Health loss is then monetised using a DALY valuation coefficient based on methodologies used by international institutions (such as OECD, WHO and the EU), adjusted for the local price level.
- 3) Retribution cost: this a penalty for instances of physical non-sexual and sexual harassment.

The size of the costs mentioned above vary based on the severity and nature of the harassment. Thus, True Price, (2020) defines five types of harassment, each with their own suggested monetisation coefficient:

- Type 1: Workers experienced non-physical non-sexual harassment
- Type 2: Workers experienced non-physical sexual harassment
- Type 3: Workers experienced physical non-sexual harassment
- Type 4: Workers experienced non-severe physical sexual harassment
- Type 5: Workers experienced severe physical sexual harassment

Now, this implies that the footprints (the degree to which harassment occurs, in incidents per FTE per year) are also more complex. Instead of one parameter for prevalence, five are needed. Alternatively, a relative prevalence rate of the five types can be used. A weighted average is then created using the number of workers affected by each type of harassment.

The following section will briefly explain how to calculate the monetisation factor for type 1. The monetisation factors for the other types are calculated similarly and then the weighted average (the number given at the



top of this box) is calculated based on the prevalence of each type. Two of the aforementioned components are relevant in this type of harassment: restoration and compensation. There is no penalty, as, in most countries around the world, there are no legal provisions against non-physical, non-sexual harassment.

$$\text{Monetisation factor} = \text{Treatment costs (Psychological)}^1 + [\text{DALY loss (Psychological)}^2 \times \text{Cost of a Daly}^3]$$

Harassment Type 1

$$= \text{€ 13,000 /Worker}$$

1. Treatment costs (psychological)= cost of psychological treatment (in Kenya) * % harassment incidents resulting in a psychological condition. These conditions can be anxiety or depression.

Treatment cost (psychological) per worker are low in this case but may be considerably higher in other countries. The cost of psychological treatments was estimated based on European data and then converted based on general differences in health care costs between Europe and Kenya. Data on the likelihood of suffering from a psychological condition after experiencing harassment is gathered from psychological research on the effects of workplace harassment (Bowling & Beehr, 2006).

2. DALY loss (psychological)= DALY loss from psychological injury (anxiety, depression) * probability of a psychological injury from harassment.

DALY loss from non-physical harassment = 0.21 DALY/worker

This describes the DALY loss from psychological effects (anxiety, depression) as a result of non-physical harassment. Data is sourced from the World Health Organisation (Ayuso-Mateos, 2000) and the National Institute for Public Health and the Environment in the Netherlands (RIVM , 2015).

3. Cost of a DALY

Cost of a DALY is €47,000 / DALY

This uses the average of the values from two well-known sources: (OECD, 2012) and (Weidema, Wesnæs, Hermansen, Kristensen, & Halberg, 2008). This is then adjusted for Kenya by using the PPP per capita conversion.

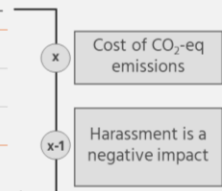
Harassment impact streams

Non-Valued (in FTE/year)

		2021	2022	... 2030	... 2040+
Direct:	Absolute	110	60	70	70
Direct:	Marginal	-120	-190	-190	-40
Indirect: system	Marginal	-	-	-200	-160

Monetised (in EUR, price level 2020)

		2021	2022	... 2030	... 2040+
Direct:	Absolute	-2,500,000	-1,400,000	-1,700,000	-1,700,000
Direct:	Marginal	2,800,000	4,500,000	4,500,000	900,000
Indirect: system	Marginal	-	-	4,600,000	3,800,000



Address: Haarlemmerplein 2, 1013 HS, Amsterdam

Site: www.impactinstitute.com

Facebook: [/impactinstitute.com](https://www.facebook.com/impactinstitute.com)

Twitter: [impact_inst](https://twitter.com/impact_inst)

Tel.: +31 202 403 440

Mail: info@impactinstitute.com

