VALUING IMPACT

THE eQALY IMPACT VALUATION METHOD

A consistent, comparable, and relevant valuation method of well-being to support organizations' decision-making

Samuel Vionnet
Andreza Souza
Noelia Pacharotti
Pedro Tagliari
Edgar Sacayon

Acknowledgments

Abubakar Khalid, Wilstar AS
Alexandre Arruda da Rocha Leão, Natura
Catherine Benoit Norris, Target
Emelie Norling, Summa Equity
Estelle Roth
Leslie Capin, Astanor
Laure Peronnin, Astanor
Marcus Bleasdale, Wilstar AS
Marta Santamaria, Integrating Capitals
Michele Pisetta, PMI
Napoleon Wallace, Southern Reconstruction Fund
Sonja Haut

August 2024

Table of contents

3.

4.

5.

Acronyms

DALY	Disability-adjusted life year
HUI	Health Utility of Income
HUT	Health Utility of Taxes
GDP	Gross domestic product
GHGs	Greenhouse gases
OECD	Organisation for Economic Co-operation and Development
QALY	Quality-adjusted life years
SVL	Statistical value of life
VBA	Value Balancing Alliance
WBCSD	World Business Council for Sustainable Development

Glossary

Health Utility of Income	The contribution of income to individuals' well-being for a given location.
Health Utility of Taxes	The contribution of tax to populations' well-being for a given location.
Health	State of complete physical, mental, and social well-being. Health sometimes has a narrower definition, encompassing only physical and mental health, which is based on a medical definition. In this report, we define health as including well-being but representing an absolute measure of it.
Human capital	The knowledge, skills, competencies, and attributes embodied in individuals that contribute to their well-being (adapted from the Social and Human Capital Protocol, 2019).
Input	Financial, material, time, or other resources used to deliver an activity.
Impact	Positive or negative contributions to one or more dimensions of well-being of a target population or individuals.
Impact pathway	A logical series of a cause–effect chain of events that describes how a specific activity results in changes in natural or human capital. An impact pathway is described in terms of input, activity, output, outcome, and impact.
Impact valuation	Assessment and accounting of the relative importance, worth, utility, or usefulness of natural/human capital to people and society. Valuation can be monetary or not (e.g., expressed in physical metrics or quantities).
Outcome	Changes in the lives of a target population or natural ecosystem (e.g., the difference between income and living wage and additional income opportunities derived from the acquisition of skills).
Output	Direct measurable result of an activity (e.g., income, access to health care, hours of training received, and emissions of greenhouse gases [GHGs]).

Social capital	Public institutions, infrastructure, resources, social networks, and their shared norms, values, and understanding in a society (adapted from the Human and Social Capital Protocol, 2019).
Societal value	Refers to the natural, human, and social capital value together. In this methodology, we express societal value in terms of well-being.
Valuation pathway	Definition of the path, approach, and method from outcome to impact and its valuation in monetary units.
Well-being	State of being comfortable, healthy, or happy. Well-being can be measured in absolute or relative terms related to a person. In this methodology, we use an absolute measure of well-being.

1.

Introduction

1.1 Why impact valuation? Why publish this method?

There is a mature accounting system for financial value, but an equivalent accounting system for societal value is lacking.

We can only manage what we measure. Impact assessment and valuation, a recent development, aims to fill this gap by allowing us to capture what matters the most in our society, such as well-being, health, and social connections. It enables the translation of a wide variety of impact metrics across natural (tCO_2eq, kg phosphorus, kg particular matter, etc), social (social benefits, taxes, etc.), and human capital (wages, the feeling of integration, health, and safety, etc.) into monetary units. By consistently and comprehensively assessing the value to society of each of those impact drivers, we make them comparable, allowing us to identify the most important ones and inform decision-making processes effectively.

By defining a unique, objective, and comparable impact metric (expressed in monetary terms) we increase the relevance of the information to decision-makers and make it accessible to a wide audience that might not otherwise have access to these insights. This unique value proposition helps answer key questions such as:

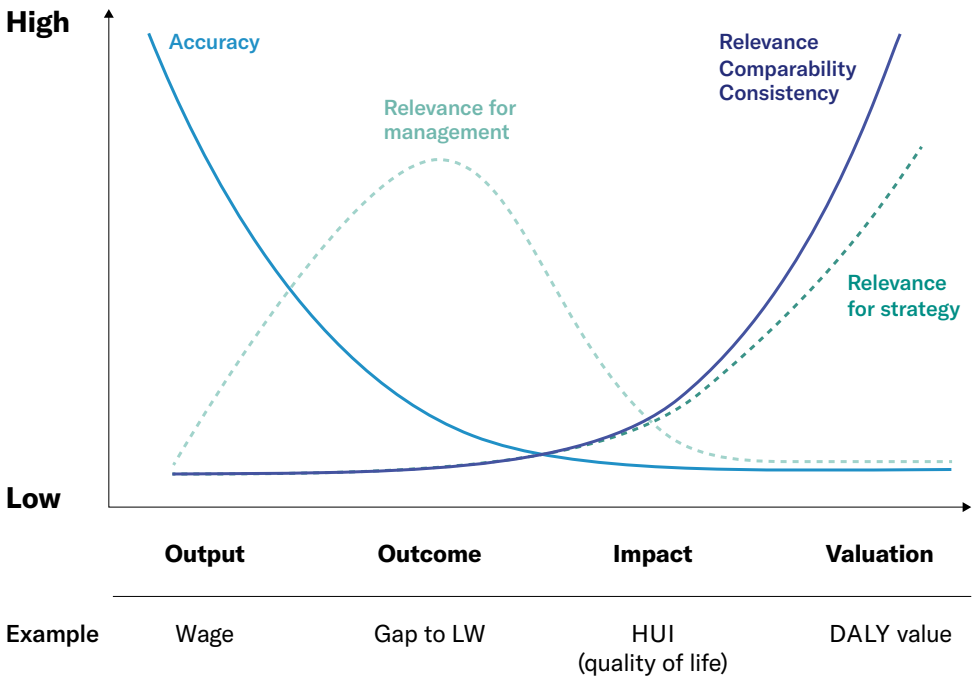
- Does an activity have a net positive or negative overall impact?
- How efficient are we at creating societal value compared to the financial resources required for the activity?
- Which impact drivers, activities, or investments generate the most societal value and are the most significant (at the project, activity, or investment portfolio level)?
- What trade-offs need to be addressed?
- How can impact be communicated strategically to decision-makers familiar with financial metrics but not with impact metrics?
- How can financial and societal value be compared effectively?

Based on Valuing Impact's experience and having assessed hundreds of activities, projects, businesses, and investment funds, we found this approach relevant to driving change in organizations and people, leading to a higher positive impact for society.

However, impact valuation comes at a cost, as illustrated in Figure 1. The addition of calculation steps (from output to impact and its valuation) decreases the overall accuracy of the impact information while increasing its relevance, comparability, and consistency, assuming that a sound valuation approach is used. In addition, impact valuation is highly relevant to strategic decision-making but less so to operational decisions, such as compensation policies, energy efficiency, or carbon reduction targets, to name a few. In these latter cases, it is more practical and straightforward to use output and outcome indicators of GHG emissions accounting, wage level or gap-to-living-wage thresholds, and so on. These indicators are directly linked to field's measures, to traditional KPIs that managers know and to action they can pursue.

Figure 1

Relationship between accuracy, comparability, relevance, and consistency when using impact valuation along an impact pathway



Impact valuation is a powerful tool for managing impact, but it is obviously not the only tool; it is one tool within a bigger toolbox. Additionally, in the impact valuation field, there are different valuation techniques that answer different questions, as there is an infinite number of ways to put value on the same impact driver (e.g., climate change, biodiversity, health, or education).

The approach we share in this report is a consistent, comparable, and relevant approach to measuring the absolute value to society: well-being (i.e., having a good, long life). We made the choice to use this value perspective, as we use it systematically in the majority of our projects, while combining it with other approaches when needed, depending on the purpose of the valuation. These other value perspectives can cover, for instance, real economic damage cost (or change), change in gross domestic product

(GDP), solution cost or market prices, and stated or revealed preferences. For instance, the well-being (eQALY) approach enables knowing what is most important for society, while the solution cost will help us understand the cost of action to mitigate further negative impact or scale up positive impact, and the economic damage cost will help us understand the true economic value of the impact we are generating (sometimes useful for engaging some stakeholders). Thus, value perspectives are complementary. This report presents a consistent, comparable, and relevant method to systematically value absolute well-being.

This publication's objective is to lower the barrier of entry to using impact valuation by sharing the developments and innovations we have worked on over the last decade and to support advances in impact measurement and management.

Additional papers can be consulted to see real world applications of this methodology (or its previous version) such as Wilstar A.S. whitepaper "From impact valuation to investing for purpose"[1], Samuel Vionnet book on Impact Thinking[2], Natura Integrated Profit & Loss report[3] and Novartis whitepaper on the screening for human rights impact in corporate supply chains[4].

1.2 Methodology background

This impact valuation method answers the need for improved transparency and relevance in the impact measurement and valuation field for the private, NGO, and financial sectors and beyond. Various organizations, including the World Business Council for Sustainable Development (WBCSD), the Value Balancing Alliance (VBA), Capitals Coalition, Social Value UK (SROI), and Global Impact Investing Network (GIIN), have developed guidelines, frameworks, and methods to measure impact. Current methods, however, have significant gaps regarding their consistency, comparability, and relevance, driving us to publish our own method to contribute to addressing this gap.

This methodology paper addresses only the valuation step in impact valuation. It does not provide guidance on impact measurement, data collection and surveys, materiality assessment, or other topics. It focuses only on how to put value on a comprehensive list of impact drivers.

Impact valuation drives strategic and management decision-making, the engagement of third parties, and the communication of the results to a wide audience. It has recently seen

1 Vionnet, Samuel and Marcus Bleasdale (2021) *From Impact Valuation to Investing for Purpose — Wilstar Social Impact Portfolio Assessment*. White paper, Valuing Impact.

2 Vionnet, Samuel (2023) *Impact Thinking – Learn Critical Thinking Skills to Make Better Decisions that Create Societal Value*. Self-published book (Amazon).

3 Vionnet et al. (2022) *Natura Integrated Profit & Loss Accounting 2021 – Technical Executive Summary and Insights.*

4 Vionnet et al. (2021) *Screening for human rights impact in corporate supply chains – A methodological proposal for quantitative assessment and valuation – Novartis case study. Working Paper* – Valuing Impact

a strong uptake from the private and financial sectors alike and has been promoted by the Capitals Coalition[5], the VBA[6], the International Foundation for Valuing Impact[7], ISO[8], and the WBCSD[9]. The book of Sonja Haut, The Case for Impact, is a good source of information to understand this field[10].

Valuing Impact has been a key contributor to this field since its beginnings and has taken part in the development of various existing guidelines, frameworks, and methods (including the Capitals Coalition Protocols, the VBA guidances, etc). It has also developed new methodologies, such as the Health Utility of Income (HUI), which captures the utility of money and taxes or social costs, translating economic measures into measures of societal value expressed in changes in well-being at the individual or population levels[11]. This represents a major advancement in impact valuation methods. Previously, only the real economic value of wages, taxes, and social contributions, or multiples of them, were accounted for.

In recent applications of impact valuation methods, we identified various issues that reduce their operationalization and their integration into business decision-making.

The following are among the main issues we aim to address in this publication:

- **Definition of impact:** Impact has been loosely defined by considering various conflicting indicators (leading to a lack of comparability) at various steps along impact pathways (at the output and outcome levels in particular). It is important to ensure that impact is defined consistently using the same definition and the same position along the impact pathway (a result of an outcome).

- **Confusion between economic and societal value:** Many impact valuation methods confuse economic value (a flow of money in the economy, whether it is income received, tax paid, profit, GDP contribution, etc.) with societal value, which is a consequence of economic value (e.g., an income leads to a better quality of life for an individual). We realized countless times that GDP growth does not necessarily lead to a better quality of life for a population. It is important not to use the same flawed metric to measure societal value. **Using this methodology**, we consider economic value to be an intermediate output or outcome, ultimately leading to the defined impact of well-being.

- **Consistency of valuation methods:** Many valuation methods (or techniques) exist and have been used together in the same impact valuation. This leads to problems of comparability and relevance, particularly when used in a decision-making context. Different valuation techniques provide answers to

---

5 https://capitalscoalition.org

6 https://www.value-balancing.com

7 https://ifvi.org

8 International Organization for Standardization. 2019. ISO 14008:2019 Monetary Valuation of Environmental Impacts and Related Environmental Aspects.

9 https://www.wbcsd.org

10 Haut, Sonja (2022) *The Case for Impact: A Guide to Creating Value in a World of Social and Environmental Challenges*. Self-published book.

11 https://www.valuingnature.ch/post/the-utility-of-income-and-taxes

different decision-making contexts. For instance, GHG emissions can be valued through the social cost of carbon (economic costs of climate change), potential internalization through taxes, offset prices, and solution costs (low-carbon technologies, renewable energy, etc.). Each of these valuations provides different values and answers to very different questions. Consistency of valuation methods should be ensured across the activities and pathways assessed. **Using this methodology**, we ensure consistency by defining a unique impact indicator and assessing all impact drivers, and by using a unique valuation factor to monetize this impact.

The methodology presented in this report aims to address these shortcomings and proposes a publicly available comprehensive method to do the following:

- Ensure more scientific and robust impact valuation accounting
- Increase the consistency of impact valuation to enable improved comparability across the assessed activities and organizations.
- Scale the relevance of impact valuation accounting for decision-making and strategy development.
- Accelerate the deployment of multicapital accounting in the private and investment sectors.

This method covers only the valuation approach to different impact drivers or outcomes. It does not specifically cover the measurement or assessment of the output, impact drivers, or outcomes.

1.3 Methodological principles

The principles of this methodology are as follows:

Consistency
The pathways, including their impact indicators and valuation techniques, are developed or chosen using the same definition of impact and pathway steps (input, activity, output, outcome, and impact).

Comparability
The impact indicator(s) and valuation techniques used are directly related and ensure comparability, meaning that the same types of valuation techniques need to be used across all defined impact indicators.

Relevance
The defined pathways and impact are connected to the decision-making context or are explicit in their meaning.

Transparency
There is full traceability of the information, data, assumptions, and parameters used in the method for each impact pathway.

1.4 Unique impact indicator (eQALY), unit, and valuation

1.4.1 Unique impact indicator

To ensure full alignment with the principles of impact valuation and to fulfill the objective of this publication, this methodology defines a single impact indicator for all pathways and activities covered by an organization, project, or investment across their entire value chain or life cycle and across all three capitals: human, social, and natural.

This single-impact indicator is a measure of **human well-being**, including life quality (psychological well-being, realization, integration, and beyond) and life expectancy. Well-being is best defined based on Maslow's pyramid of needs[12], where we first find physiological and safety needs (health, nutrition, etc.) and then belonging, esteem, and self-actualization. Our definition of well-being covers all of these dimensions, building on an absolute and objective definition of well-being (as opposed to a subjective definition informed by self-stated preferences).

This choice is relatively obvious when it comes to human and social capital, whereby all the pathways and activities that we can imagine ultimately affect human well-being. As individuals and as a society, we all aim to have a long, happy life. Thus, our ultimate objective is to increase our well-being, which encompasses our quality of life and life expectancy.

It is slightly less obvious for natural capital, whereby the purpose of protecting nature might be its existence value overall and not human well-being. However, when considering the valuation of nature, the only viable option is to value it according to a human value system. It can be through stated or revealed preferences, hedonic prices, market prices, solutions, mitigation, damage costs, and so on. All of these techniques measure a change in economic conditions for individuals or for our society, which in turn directly affects human well-being. We value nature based on the implicit assumption that it benefits or impacts us (and our well-being). The existence value of nature is either not possible to determine according to the human value scale or should be infinite. There is a choice to make here regarding whether nature is not valued in monetary terms and thus its value is considered infinite, or whether it is valued using economic valuation techniques (traditionally used), thus implying that nature affects human well-being. As we know, a value is better than no value (or an infinite value) for decision-making (to avoid thinking biases), so knowing and acknowledging the limitation, we propose valuing natural capital as well in terms of human well-being.

1.4.2 Unit

Human well-being can have very different dimensions and is often difficult to assess, let alone measure. However, two indicators have been used for a long time to measure human health and are commonly used in impact valuation (natural, human, and social impact valuation). These indicators are disability-adjusted life years (DALY) and quality-adjusted life years (QALY). These combine measures of quality of life (or

12 Maslow A. H. (1943), A theory of human motivation, *Psychological Review*, 50, 370 – 396.

life disability) and fatality (death). *The Lancet* and the World Health Organization, for instance, have long published global estimates of DALY from all causes (accidents, diseases, and disabilities) globally, broken down by country, gender, and age. In this report, we take the position to assume that DALY are equivalent to QALY, just with an opposite sign. We propose the indicator **equivalent-QALY (eQALY)**, the "equivalent," to reflect the fact that it covers more effects than only health or quality of life (in particular, the determinants of health that can be measured in economic terms, such as wages) which are systematically weighted against the original QALY (thus called equivalent QALY). The equation below shows the principle of the equivalent QALY, summing up different contribution originating from different activities, all impacting well-being.

$$\mathrm{eQALY} = \mathrm{QALY}_{\text{quality of life}} + \mathrm{QALY}_{\text{life expectancy}} + \mathrm{QALY}_{\text{income}} + \mathrm{QALY}_{\text{education}} + \mathrm{QALY}_{\text{climate change}} + \mathrm{QALY}_{\text{biodiversity}} + \cdots$$

One QALY equals 1 year of life in good health. If a person dies, this person loses the equivalent number of QALYs until their life expectancy is reached. If a person, for some reason, has a lower quality of life during a year, the metric allows us to account for a percentage loss/gain quality of life based on a standard comparison table of "disability weights" (for instance, from the Global Burden of Disease [GBD], which provides a list of disability weights for all kinds of diseases and accidents around the world). A QALY of 0.5 means that a person lived for a year with only a 50% quality of life compared to its full potential. The loss/gain of quality of life can be linked to any kind of impact driver, including income, feelings of integration, and environmental factors, as we will see in the methodology description later in the report (and the equation above).

1.4.3 Valuation

Two valuation factors can be used: the social utility of life and the statistical value of life (SVL). Both concepts are briefly described below.

Social utility of life
Is a slightly different concept as it should be informed by the utility of a population or entire society rather than by a preference at the individual level. This value should be anchored in a macroeconomic perspective. Although research is lacking with regard to setting this value, a range of companies are using an ideal productivity value as a proxy for this social utility. For instance, an average GDP or gross national income (GNI) per capita can be used to estimate this value, which could be the average for OECD countries. Using this approach might underestimate the social utility of life, which extends beyond the productive capacity of individuals. For OECD countries, the value is 54,000 USD/DALY[13]. In general, we prefer using the social utility of life concept rather than the SVL for its correspondence with real economic value, rather than relying on people's perceptions and preferences, which are biased.

13 https://data.oecd.org/gdp/gross-domestic-product-gdp

The SVL
Is the marginal rate of substitution between income (or wealth) and mortality risk. It is usually measured by asking a wide range of people about their willingness to pay to prevent a specific health condition. By analyzing different data points across population groups and health conditions, it is possible to estimate the full value of a life. The value of a life, using this method, can typically range between 5 and 20 million USD (for a full life), while a common value used in the context of impact valuation has been approximately 200,000 USD/DALY[14].

1.5 Impact pathway and valuation framework

Impact frameworks comprise a collection of individual impact pathways. An impact pathway describes the path that leads from an activity to an impact, relying on input and generating an output and an outcome leading to an impact.

To ensure high consistency, comparability, and relevance, it is important to set strict definitions, presented here.

We used the following definitions for impact pathway components (see Figure 2):

Inputs
The resources necessary to carry out an activity.

Activities
The actions whose effects on social capital are to be analyzed and measured.

Output
The direct measurable result of an activity (income, access to health care, hours of training received, emissions of GHGs, etc.).

Outcome
Changes in the lives of the target population or natural ecosystem (difference between income and living wage, additional income opportunities derived from skills acquisition, eutrophication affecting freshwater or marine species, etc.).

Impact
Positive or negative contributions to one or more dimensions of well-being (unit impact indicator measured using the eQALY unit).

Figure 2

Illustration of an impact pathway flow

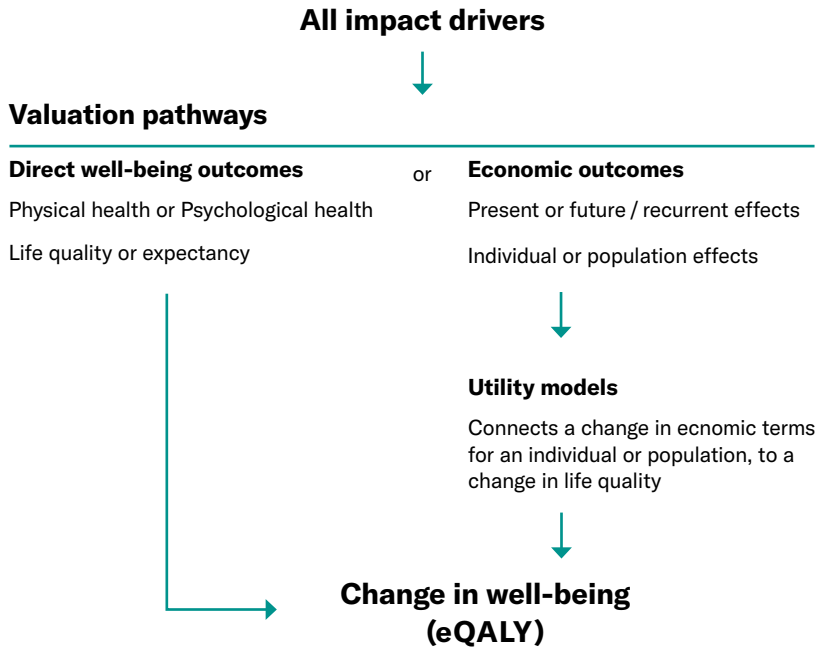
14 OECD. (2012). *The Value of Statistical Life: A Meta-Analysis*. Working Party on National Environmental Policies. Environmental Directorate/Environmental Policy Committee.

Figure 3 illustrates the two main valuation pathways considered in this method, to which all method indicators relate. It highlights how all output and outcomes measured based on human, social, or natural capital relate to either one of these two. The framework also highlights the unique impact indicator, defined as human well-being.

The first type of pathway is related to direct health or well-being effects. These occur when an activity affects someone's physical and psychological health (e.g., occupational safety) or other well-being dimensions (e.g., self-esteem, feeling of belonging, or feeling of realization). The second pathway links economic outcomes or proxies, such as income or taxes, to health and well-being. These pathways require the use of utility models, which translate a change in economic outcome into a change in the quality of life of individuals (human capital) or groups of people (social capital). This is the role of the associated methods, such as the HUI and taxes.[15]

Figure 3

Impact framework from impact drivers to impact through valuation pathways



1.6 List of generic pathways covered by this method

This method covers a fixed number of generic pathways that we standardized, while leaving room to customize them to value the impact of any possible activity. Based on the experience of Valuing Impact, the pathways/indicators covered in this methodology paper allow us to capture an important fraction (if not all) of the natural, social, and human capital value generated by organizations in the private sector. Customized pathways derived from the list of generic pathways are provided in Chapter 5.

15 Vionnet, S., R. Adhikari, and S. Haut. The Health Utility of Income and Taxes—Part A: Health Utility of Income—Impact Valuation Methodology, Global Assessment and Application to Businesses. White Paper. Valuing Impact, 2021.

The following is a high-level list of pathways that are covered:

- Health and well-being
- Income, wage, and personal finance effects
- Education, skills, and training
- Taxes
- Cost to society/state
- Environmental externalities
- Ecosystem services

1.7 Methodological steps

Here, we briefly summarize the five methodological steps required to comply with the assessment process:

1. Define the scope and objectives of the assessment.
2. Develop pathway mapping and models for assessing impacts.
3. Collect primary data through interviews with stakeholders and desktop research.
4. Review and analyze the results.
5. Influence decision-making and maximize societal value.

2.

Generic impact pathways and methodology

We provide a definition and description of the generic pathways in Table 1.

Table 1

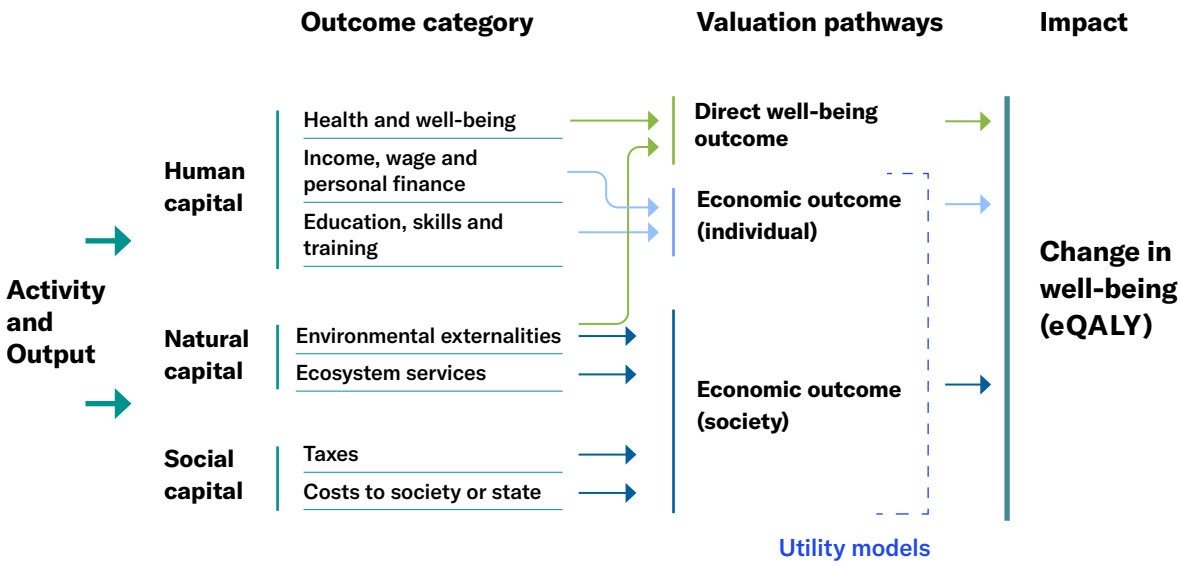
List of generic impact pathways, their definitions, and their scope

	Impact pathways	Definitions and scope
Human capital	**Health and well-being**	This pathway measures activities that have a direct impact on the health or well-being of a person or group of persons. The impact pathway can capture a reduction in injuries, fatalities, disease, or a change in psychological states/well-being (such as feelings of integration, belonging, or life satisfaction in general). To do so, the impact pathway relies on an extended definition of QALY. For example, access to drinking water can reduce diarrheal diseases, which translates into a health benefit estimated in QALYs. The valuation of QALYs can be done through two approaches: using the SVL or using the social utility of life. For the purpose of this methodology, we assume that QALYs = DALYs.
	Income, wages, and personal finances	This pathway quantifies the societal impact of employee salaries (wages), income, or any other change in financial status for individuals or a population (e.g., sales activity, microcredits, formal employment wages, or projects for small entrepreneurships). The income is translated into a well-being impact using the HUI model, which translates a change in income into a change in well-being.
	Education, skills, and training	This pathway measures the future change in economic outcome derived from primary, secondary, or tertiary education, as well as other types of skill acquisition and training activities. The knowledge and skills acquired have a direct effect on future earnings. The earning premium accumulated over a defined period represents the economic outcome. The well-being impact of this earning premium can be estimated using income utility models (the HUI), which translate a change in income for individuals into a change in well-being.

Social capital	**Taxes**	This impact pathway quantifies the contributions to society in terms of taxes paid or any government income that can be used for public spending and supporting infrastructure and services for the population. Taxes finance important public goods and services and support the economy with key infrastructure (security, research, skilled labor, etc.). Direct tax contributions that are received by any government can be translated into a unique, relevant, comparable, and consistent impact reflected by the change in the well-being of a population using the Health Utility of Taxes (HUT) method.
	Costs to society / state	This pathway measures the social impact of any activity that increases/decreases/avoids social welfare costs to the state, including unemployment benefits, social benefits, and other direct or indirect costs that are covered by a government. These avoided costs can be translated into well-being impacts using the HUT model.
Natural capital	**Environmental externalities**	Economic activities have a direct or indirect effect on nature. This impact pathway measures the societal value of environmental externalities from using or affecting nature. Environmental externalities are quantified using reference flows from or to nature resulting from economic activity as a first step. The life cycle assessment (LCA) approach, methods, and databases are used to inform the cause–effect chain of events from the activity to the environmental impacts. These impacts are categorized into three major areas of protection: human health, ecosystem services, and resources. The impacts on human health are directly related to the direct well-being pathway. The ecosystem services and resources pathways are monetized using economic costs (damage or mitigation costs) and then translated into well-being impact (eQALY) using a utility factor.
	Ecosystem services	This impact pathway measures the social impact from a change in natural ecosystems quality and biodiversity. Ecosystems provide a wide range of services, including provisioning, regulatory, habitat, and cultural services. To measure their impact, it is necessary to know the area or quantity of the ecosystem that is being affected by the intervention. This is then translated into monetary terms using a cost-based method (damage and mitigation costs) in general. These economic costs are then translated into changes in well-being (eQALY) using a utility factor.

Figure 4

Illustration of the general pathways with their respective valuation pathways and impact indicators



2.1 General equation of the impact valuation

All the impact pathways follow the cause–effect chain of events that lead to a change.

Here, we show the general equation of the impact pathway:

IMPACT PATHWAY

$$\text{Output} \times \text{Outcome} \times \text{Additivity} \times \text{Valuation factor} = \text{Societal value}$$

Where

- **Output** is a measure of the direct result of an activity (e.g., # beneficiaries, ha of land). It is often based on primary data collected from the activity directly or from the organization performing the activity.
- **Outcome** refers to changes in the lives of the target population or natural ecosystem per unit of output. It is often informed partly by primary data and secondary data or statistics, as outcomes are more difficult to measure. It is a ratio (amount of outcome per unit of output).
- **Additivity** refers to a multiplier between 0% and 100%, which reflects the extent to which the impact measured is happening in reality. This additivity factor can capture various effects, as detailed in the next chapter.
- **Valuation** factor expresses the change in QALY per unit of outcome.

2.1.1 Additivity

The additivity of an impact is one or more multipliers between 0% and 100% that account for different effects. It can also be understood as the risk of the impact not happening as expected. The effects captured by the additivity multiplier are as follows:

Baseline
This factor accounts for the amount of change, generally the outcome, that happened compared to a baseline (no activity takes place). For instance, if a plant-based burger is put on the market, it is likely that it will not replace beef 100%, but rather other sources of animal proteins and other plant-based protein sources. If we want to assess the fraction of beef replaced, we will need to multiply this scenario by a fraction representing the real substitution rate. This factor is also called "deadweight" and "displacement" in the SROI methodology. It is sometimes directly considered in the outcome definition.

Dropoff
A fraction of the impact might fail to happen, or it might stop happening over time owing to habit takeovers, breakdown of equipment, replacement by another stakeholder's initiative, or various other reasons. A dropoff multiplier might also be used if primary data are available only at the output level (e.g., the number of beneficiaries with access to water) and the outcome needs to be modeled based on secondary data sources and statistics. In this latter case, we cannot assume that 100% of the beneficiaries would experience the same change in their lives—for instance, a reduction in waterborne diseases—as other factors (e.g., behaviors) are at play. In this case, we also use a dropoff factor. To be realistic, accounting for the fraction of the impact that will fail to happen over time is critical.

Attribution
Most of the impact delivered by an activity has built on different inputs and drivers (or reasons). This means that we need to be fair about the role of our input in generating the impact we want to assess. In practice, this leads to attributing the impact to different drivers based on their relative importance to the impact generated. We can use, for instance, the rate of financing or resources used to deliver an impact when different parties contribute to the occurrence of an impact. Attribution might be used after the calculation of the impact, splitting up the results in total versus the attributed impact for an activity, allowing us to use the results for two different purposes (understanding the absolute impact of an activity versus one's role in delivering the impact).

The three factors must be used together, adhering to the following formula:

ADDITIVITY

$$\text{Additivity}\,(\%) = \text{Baseline}\,(\%) \times (1 - \text{Dropoff}\,(\%)) \times \text{Attribution}\,(\%)$$

2.2 Human capital

2.2.1 Health and well-being

Objective

To quantify and value the direct change in health (quality of life and life expectancy) and well-being (beyond health) resulting from an intervention. In general, a change in well-being can mean any change in health, psychological state, or general state of well-being (e.g., feeling of integration or belonging) that leads to an improved quality of life.

The general equation is:

HEALTH AND WELL-BEING

$$eQALY_{well\text{-}being} = \#\ beneficiaries \times \frac{QALYs}{capita} \times \$\ value\ of\ life$$

$$QALY = well\text{-}being\ weight\ (\%) \times time\ (year) + years\ of\ life\ lost\ (year)$$

Output (unit: #):	The number of beneficiaries affected is usually estimated or measured (primary data).
Outcome (unit: QALY/#):	The duration of the change in well-being, measured using the QALY and DALY indicators, assuming for the purpose of this method that they are the same except for their differing signs. The eQALY equation is expressed as a change in quality of life, expressed in % change in well-being (well-being or disability weight), and multiplied by a duration in years. The eQALY equation also adds the years of life lost to it whenever relevant. The change in quality of life is taken, for example, from the GBD (https://www.thelancet.com/gbd) and the associated disability weights list, which is available for all health-related conditions. These weights can be extended to conditions other than health by comparing directly equivalent situations (e.g., a feeling of exclusion or integration is similar to a light or medium anxiety syndrome, for which disability weight is available in the GBD factors).
Valuation factors (unit: USD/QALY):	eQALY is monetized using a constant value across all situations and geographies to respect human rights. Chapter 1.4.3 provides a description of the two most common valuation factors used for eQALY.

2.2.2 Income/wage and financial effects

Objective

To quantify and value the change in well-being resulting from a change in financial conditions, including a change in income or wage, for individuals or populations. A wage is the income received from an employer for a defined task or job, while income generally defines all the wages and other sources of income a person or a group of persons receives. Usually, employees receive wages, while independent workers receive income. We use "wage" and "income" interchangeably below. This pathway also covers changes in living costs, subsidies received, healthcare costs, debts, cash donations, or any change in the financial condition of a person or household.

The impact pathway for **income/wage** covers two specific outcomes:

A. **The income change**
Relates to the change in spending capacity, while the gap to living income/wage relates to potentially insufficient financial means that lead to a reduced quality of life. The impact of income is always positive, while the gap to living wage is always negative when the latter occurs.

B. **The gap to living income/wage**[16]
Relies on the concept of a living wage, which defines the wage or income a worker needs to bring to their household for them to live a basic but decent life. It is a concept that is increasingly used across geographies and sectors to define ideal wages that lead to a basic but decent quality of life (in line with human rights). We use it here as the baseline to measure the gap to living wage. Valuing Impact produces its own worldwide dataset of living wages.

The general equation is:

INCOME / WAGE

$$eQALY_{well\text{-}being} = beneficiaries \times Min\ (income\ change;\ 4 \times LW) \times HUI_{country}$$

$$eQALY_{well\text{-}being} = beneficiaries \times Max\ (income - LW;\ 0) \times HUI_{country}$$

16 The living wage/income concept defines the wage/income required to ensure a basic but decent life, in line with principles of human rights. It is defined, among others, by the international methodology of Anker and Anker (2017).

Output (unit: #):	This is the number of beneficiaries experiencing the change in financial situation, which needs to be separated for the income impact or for the gap to living wage.
Outcome (unit: USD/#)	The change of income or wage (or change in financial conditions) is always measured as gross—that is, before personal income taxes and social contributions paid by the employee/worker (when used with the HUI methodology). These wages/incomes can usually be obtained from direct disclosure by employers (e.g., payroll data) or employees/beneficiaries; alternatively, they can be found in secondary data sources. Living wage data are based on a methodology (Anker and Anker 2017[17]) that allows its calculation from the collection of primary data related mainly to the cost of living. However, various data sources allow the direct use of these estimates in this impact valuation method without the need to calculate a living wage from the primary data. Organizations such as the WageIndicator Foundation[18], FairWage[19], and the Global Living Wage Coalition[20] provide various data sources with more or less coverage based on primary or secondary data. Valuing Impact also provides a global dataset that is freely available for non-business organizations; it offers a good starting point for many organizations. This pathway can also account for changes in the financial conditions of individuals or a population, which can come from very different activities, such as cash transfers, healthcare costs, or loans. These can be valued on a case-by-case basis using their real financial value.
Valuation factors (unit: USD/USD):	The impact valuation of both the income change and gap to living wage is based on the same valuation factors that rely on a utility model. We recommend using the **HUI method** developed by Valuing Impact, which is publicly available and globally applicable. This model considers the local context in which the income is received and used (usually, a person in a low-income country has a higher utility of income than a person in a high-income country) as well as the relative income that a person earns (a poor person has more utility of income than a richer person).

17 Anker M. & Anker H. (2017) Living Wages around the world – Manual for measurement. Elgaronline.

18 https://wageindicator.org

19 https://fair-wage.com

20 https://fair-wage.com

2.2.3 Education/training/skills

Objective

To quantify the societal value of education through a person's future earning premium due to the skills acquired.

Education outcome can have different impacts beyond professional opportunities and future income. These can be addressed through the other generic pathways defined in this methodology. Here, we capture only the income-related impact of education, skills, or training.

The general equation is:

EDUCATION / TRAINING / SKILLS

$$eQALY_{well\text{-}being} = (beneficiaries \times duration\ of\ education) \times (earning\ premium\ education\ (\%) \times duration\ of\ impact \times average\ income) \times HUI_{country}$$

Output (unit: days–beneficiaries)	This is the equivalent number of days of education or training provided across all beneficiaries in cumulative terms. This output is calculated as the product of the average duration of education or training (in days) multiplied by the number of beneficiaries. The equivalent number of days of education can be adjusted to fit the outcome defined below. In some cases, some days of education can be more valuable than others. It must be decided on a case-by-case basis.
Outcome (unit: USD/days–beneficiaries)	Education outcome translates into a potential future income premium and is thus called the "earning premium of education." It is expressed as income per unit of time (in our case, days). The earning premium of education per country is estimated using the % earning premium for a specific education activity, which we classified as primary, secondary, or tertiary education in this case. When no primary data are available for the earning premium, we use the data from a World Bank study[21] that provides the % earning premium for a year of education per education level (primary, secondary, and tertiary). We then use the average expected income of the beneficiaries (without accounting for the education activity) and multiply it by the expected duration of the impact over the years. We typically use 20 years for standard education value; we can use a lower duration for specific skills or contexts in which uncertainty about the utility of the acquired skills is high.
Valuation factor (unit: USD/USD):	We apply the HUI to the overall calculated earning premium to translate it into a change in well-being (eQALY).

21 Montenegro, C. E., and H. A. Patrinos. *Comparable Estimates of Returns to Schooling around the World*. Policy research working paper 7020. World Bank Group, 2014.

2.3 Social capital

2.3.1 Taxes

Objective

To measure contributions to society in terms of taxes paid, contributions to government public spending, financing of infrastructure and services benefiting the entire population, and embedding their level of inefficiency (e.g. tax evasion, misused of public funds, corruption, etc). Taxes are at the foundation of our society, and we often forget about them when it comes to measuring societal impact. Taxes are also used to support the economy through infrastructure investments, subsidies to industries and sectors, educational investments, and so on. However, taxes are often seen as a barrier to economic and business prosperity and are often optimized or avoided (legally or not). In reality, taxes help create enormous societal value over time, despite many inefficiencies (and even corruption), driven mostly by economic activities and businesses that pay taxes at various levels. The tax received by any government can be translated into a unique, relevant, comparable, and consistent impact reflected by the change in the well-being of a population through Valuing Impact's latest developments in methodology.

The general equation is:

TAXES

$$eQALY_{well\text{-}being} = change\ of\ income \times tax\ rate \times HUT_{country}$$

Output (unit: USD):	The change in tax income is usually calculated based on an income or economic metric multiplied by a taxation rate (the outcome). We thus define output as a change in income. It can be calculated based on the change in income/wages and education/training/skills, which are also defined as a generic pathway.
Outcome (unit: % taxation):	This refers to the taxation rate expressed as a percentage of income. These can be obtained from the websites of KPMG or PwC, for instance, or from the relevant government's national website.
Valuation factor (unit: USD/USD):	We use the HUT method and factors to translate a change in public spending into a change in well-being in a population. This method captures the utility of money disbursed by governments around the world, excluding the effect of personal income and other socioeconomic developments (e.g., progress in medical care). This method also captures the efficiency of the government in delivering meaningful societal outcomes, which translates into low-income countries having low HUT factors resulting from their level of corruption and inefficiencies (unfortunately). HUT is highest for middle- and higher-income countries, but falls slightly for the highest-income countries.

2.3.2 Avoided social costs

Objective

To measure the change in government budget and spending resulting from a change in social costs linked, for instance, to unemployment or social benefit payments. We assume that this cost savings would provide a larger budget for the government to invest in other infrastructure and services for society. This pathway is similar to taxes but is built on another driver (not change in taxes but change in cost to governments).

The general equation is:

AVOIDED SOCIAL COSTS

$$eQALY_{well\text{-}being} = beneficiaries \times avoided\ social\ costs \times HUT_{country}$$

Output (unit: #):	This refers to the beneficiaries or number of occurrences of the event leading to a change in social costs.
Outcome (unit: USD/#):	This refers to the value per beneficiary or occurrence of the change in social cost for the government. This can include a change in subsidy or unemployment benefits, but it can also be another government expense avoided, for instance.
Valuation factor (unit: USD/USD):	This refers to the HUT method and factors used to translate a change in public spending into a change in well-being across a population. See tax methodology for more information.

2.4 Natural capital

2.4.1 Environmental externalities

Objective

To measure the positive and negative impacts of a change in the condition of the natural world. These environmental externalities arise from any business, personal, or organizational activity along the value chain and across activity sectors and regions. This pathway builds on many of the long-existing methodologies, such as carbon and water foot printing, carbon accounting, LCA, ISO 14,044, ISO 14,046, and ISO 14,064.

The general equation is:

ENVIRONMENTAL EXTERNALITIES

$$\mathrm{eQALY}_{\text{well-being}} = \text{reference flow} \times \frac{\text{impact driver}}{\text{reference flow}} \times \text{valuation factor}$$

Output (unit: e.g., distance [km], weight [kg], or energy [MJ]):	Environmental externalities are quantified based on a reference flow of activity (e.g., X km of transport), material (e.g., kg of plastic), or energy (e.g., kWh electricity or MJ of natural gas), which represents the output (either used or avoided). Units differ depending on the type of activity assessed.
Outcome (unit: Impact driver unit / reference flow):	We use the LCA as the basis for assessing environmental impact, whether positive or negative, across the value chain or life cycle of activities, businesses, organizations, or individuals. We use the ReCiPe[22] method or the Environment Footprint 3.1 (EF3.1) from the Product Environmental Footprint from the European Union[23]. The ReCiPe contains 18 environmental impact indicators (i.e., ReCiPe 2016, H, midpoint), to which we added plastic in the oceans as the 19th indicator. The impact driver (or midpoint indicator) data for those LCA methodologies for any kind of activity, material, or energy are provided in databases such as Ecoinvent[24], which we use as the default source of data for our impact modeling. Ecoinvent provides impact driver values for the ReCiPe and EF3.1 methods directly in its database. However, alternative methods for quantifying the impact drivers can be used whenever needed.

22 Huijbregts et al. (2016) ReCiPe 2016 – A harmonized life cycle impact assessment method at midpoint and endpoint level. National Institute for Public Health and the Environment. Ministry of Health, Welfare and Sport. Netherlands. (https://www.rivm.nl/en/life-cycle-assessment-lca/recipe)

23 https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html

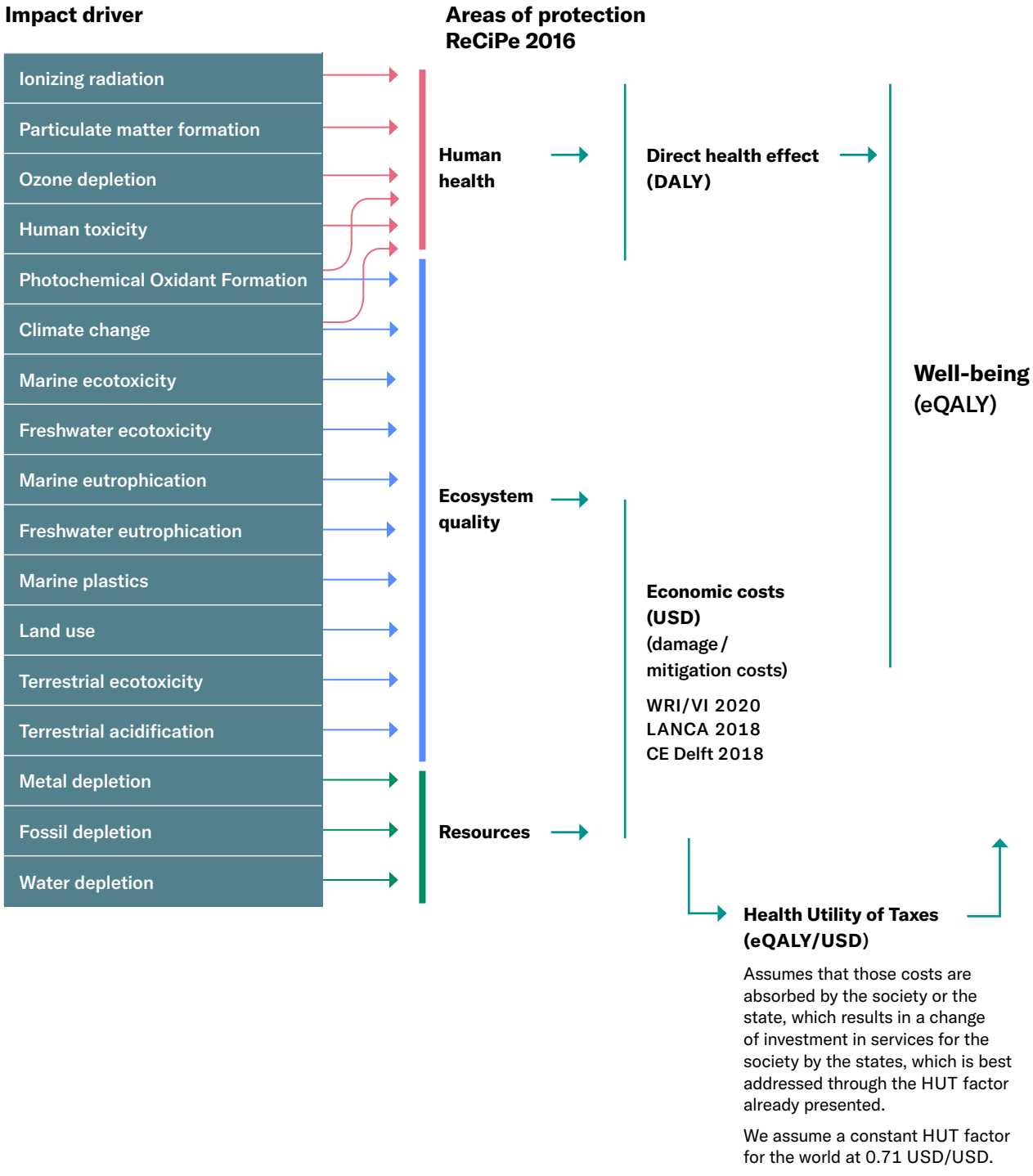
24 www.ecoinvent.org

Valuation factor (unit: USD/impact driver unit):

Valuation factors for environmental impact drivers are provided in Table 3 (world average factors) at the end of this chapter. Regionalized factors are available from Valuing Impact upon request. We used a dedicated model to link each impact driver to the unique well-being impact indicator used in this impact valuation method; this is illustrated in Figure 5.

Figure 5

Impact valuation modeling pathways for each environmental impact driver



Some of the impact drivers typically used for measuring natural capital impact (a synonym for environmental externalities)—such as particulate matter emissions (air pollution), toxic chemical emissions (human toxicity), or even climate change—have a direct impact on human health. The remaining impact drivers affect either ecosystem quality (a synonym for biodiversity) or abiotic resources (minerals or energy) and are typically measured in terms of damage or mitigation costs to society—that is, what we refer to as economic outcomes.

Below, we provide further information on each area of protection and its respective valuation:

Human health (direct health effects):

The ReCiPe method provides the direct factor to translate climate change, ionizing radiation, particulate matter, photochemical oxidant formation, ozone depletion, and human toxicity midpoint indicators into DALYs. As the DALY is directly equivalent to a QALY in this methodology, we can consider it a direct contributor to the impact indicator defined—that is, the eQALY.

Illustrative equation

`Valuation factor (climate change) = ReCiPe climate change endpoint factor`

$9.27e\text{-}7\ \text{DALY/kgCO}_2\text{e} \times 55{,}681\ \text{USD/DALY} = 0.051\ \text{USD/kgCO}_2\text{e}$

Note: This is only part of the factor for climate change, as it has a contribution from ecosystem quality as well.)

Ecosystem quality (impact on species richness):

Two of the human health midpoint indicators—climate change and photochemical oxidant formation—also contribute to the ecosystem quality area of protection. To translate these indicators into a QALY unit, which is expressed in species–year units (the unit of the ReCiPe endpoint), we use the species density of 1.48 e-8 species/m² from the ReCiPe methodology to convert the unit into a potentially disappeared fraction (PDF) of species per m² and year. This PDF unit is covered in the CE Delft methodology in terms of economic costs to society, which gives a range between 0.08 and 0.65 EUR/PDF-m²-year. We use the higher range of 0.65 EUR/PDF-m²-year to calculate the economic cost to society of ecosystem quality degradation. To translate this economic outcome into well-being impact (eQALY), we use the HUT method and consider an average HUT from developed countries as the proxy for the value of environmental externalities for our society; we associate this change in services to society with a change in public spending on services. It can be better understood by comparing, for instance, water pollution or depletion. This creates a cost for the governments that must supply or clean this water. The cost is usually taken from public spending and taxes. However, there are, of course, some exceptions—for instance, when these costs are not spent in low-income countries or absorbed by individuals (e.g., health impact). However, in this case, it is not because the government does not play a role that we should consider these economic outcomes irrelevant. On the contrary, their value should be at least equivalent in terms of well-being to that of developed countries. This is why we use a constant equivalent HUT for this calculation (equal to 1.27e-5 DALY/USD).

Illustrative equation

Valuation factor (climate change) =

ReCiPe climate change endpoint factor (2.8e-9 species-year/$kgCO_2e$) /

1.48e-8 species/m^2 × 0.69 USD/PDF × 0.7 USD/USD (well-being utility of economic

costs linked to natural capital) = 0.0925 USD/$kgCO_2e$

Note: The total climate change valuation factor combining direct health impact and ecosystem quality is 0.144 USD / $kgCO_2e$.

Ecosystem quality and resources (economic outcomes):

We use CE Delft 2018 per default for all other midpoint indicators of ecosystem quality and resources to translate them into economic costs. These economic costs must then be translated into a well-being indicator. Similar to the previous explanation, we use the world average HUT factor to translate the shared loss of common goods into a change in well-being.

Illustrative equation

Valuation factor (freshwater eutrophication) =

2.51 USD/kgP-eq × 0.71 USD/USD (well-being utility of economic costs

linked to natural capital) = 1.78 USD/kgP-e

Two of the midpoint indicators—water depletion and land use—are regionalized, given their high variability in the local context. Most of the other valuation factors are regionalized on a case-by-case basis, such as particulate emissions, eutrophication, and toxicity emissions, only when there is further data on the emissions regionalization. These regionalization models are not yet part of this publication, although they might be in the future, depending on the demand.

The following data sources were used to calculate the economic outcomes for water depletion and land use:

- **Water depletion**
  The World Resources Institute and Valuing Impact published the economic cost of achieving water stewardship per sector, basin, and country, covering the entire world. These costs are not correlated with water stress or scarcity level. We use these costs as regionalized economic costs, which we then multiply by the world average HUT to translate into a change in well-being (eQALY).

- **Land use**
  We use the methodology of LANCA 2018[25], which provides changes in five ecosystem services related to soil functions (soil fertility, soil organic carbon, water filtration, groundwater recharge, and erosion resistance). The dataset differentiates between types of land use and types of soil and provides country data covering the world. The results are quantitative and not yet monetized. We developed an economic monetization approach for the LANCA method, which allows us to obtain economic outcome indicators. These are then multiplied by the world average HUT to translate them into changes in well-being (eQALY).

The global average valuation factors for the 19 impact indicators are presented in **Table 3** (some of the indicators are presented with two different units to accommodate different version of ecoinvent). They are representative of 2023, accounting for inflation since the reference year of the data used to calculate it (e.g., CE Delft economic prices). Valuing Impact's regionalized factors for land and water use are available upon request.

25 Bos U. et al. (2016) LANCA. Characterization factors for life cycle impact assessment, Version 2.0. Fraunhofer IBP, Stuttgart.

Table 3

Environmental impact drivers and their valuation factors (for ReCiPe 2016)

No.	Indicators	Original Unit	Final valuation factor (USD/unit)
1	Climate change	EUR / kg CO_2-eq	1.44E-01
2	Ozone depletion	EUR / kg CFC-eq	2.96E+01
3	Human toxicity	EUR / kg 1,4 DB-eq	9.88E-02
3b	Human toxicity potential (HTPc)	EUR / kg 1,4 DB-eq	1.39E-01
3c	Human toxicity potential (HTPnc)	EUR / kg 1,4 DB-eq	9.55E-03
4	Photochemical Oxidant Formation	EUR / kg NMVOC-eq	1.25E+00
4b	Photochemical Oxidant Formation	EUR / kg NOx-eq	4.30E+00
4c	Photochemical Oxidant Formation - Human health	EUR / kg NMVOC-eq	3.58E-02
4d	Photochemical Oxidant Formation - Ecosystems	EUR / kg NMVOC-eq	4.26E+00
5	Particulate matter formation	EUR / PM10-eq	3.50E+01
6	Ionizing radiation	EUR / kg kBq U235-eq	5.03E-04
6	Ionizing radiation	EUR / kBq Co-60-Eq	5.03E-04
7	Terrestrial acidification	EUR / kg SO_2-eq	4.75E+00
8	Freshwater eutrophication	EUR / kg P-eq	1.78E+00
9	Marine eutrophication	EUR / kg N-eq	2.97E+00
10	Terrestrial ecotoxicity	EUR / kg 1,4 DB-eq	8.31E+00
11	Freshwater ecotoxicity	EUR / kg 1,4 DB-eq	3.45E-02
12	Marine ecotoxicity	EUR / kg 1,4 DB-eq	7.06E-03
13	Agricultural land occupation	EUR / m^2year	7.67E-02
14	Plastic in oceans	EUR/t plastic	1.61E+04
15	Water depletion	EUR/m^3	9.15E-02
16	Metal depletion	EUR/kg Fe-Eq	1.35E-02
17	Fossil depletion	EUR/kg oil	4.34E-01
16	Metal depletion	EUR/kg Cu-Eq	2.31E-01

2.4.2 Ecosystem services

Objective

To assess or value ecosystem services per unit of area affected by the activity of an organization. Each unit of area is associated with several ecosystem services (outcomes), which are valued (impact) based on primary data collection, expert interviews and data, and literature data that are transferred and adapted to the assessed cases. The types of ecosystem services can include direct-use services (e.g., fishing), regulation services (e.g., carbon storage and sequestration), and cultural values (e.g., tourism).

The general equation is:

ECOSYSTEM SERVICES

$$eQALY_{well\text{-}being} = \text{ecosystem unit or area} \times \text{ecosystem economic outcome} \times HUT_{average}$$

Output (unit: ha):	Reference area of ecosystem affected in ha or, in some cases, based flow (stock of fish, species diversity, etc.).
Outcome (unit: USD/ha):	Flow of ecosystem services per unit of area or base flow (physical unit, such as kg of fish collected per ha, water filtered per year, carbon sequestered per year, etc.). The literature provides many useful reference points.
Valuation factor (unit: USD/USD):	The equivalent HUT factor is also used for environmental externalities, which is equal to 0.71 USD/USD.

2.5 Other indicators

Other output, outcome, and impact indicators can be calculated based on the same pathways, depending on the needs of the methodology user, the stakeholders, and the audience engaged.

We recommend considering the following indicators:

- **QALY (i.e., number of years of quality of life gained/lost):**
  By dividing the monetized eQALY results provided in the methodology presented above by the constant value of QALY (in USD/QALY), we can back-calculate the amount of QALY. Each QALY is equivalent to 1 year of life lived in good health or, for instance, 10 years of life lived with an equivalent avoided disability (reduced life quality) of 10%.

- **Economic outcome** (or WEALTH+[26]):
  By stopping the analysis before the valuation factors for economic outcome and by monetizing the QALY from direct health/well-being pathways, we can obtain an economic indicator that represents the real-term change in the financial condition of the affected stakeholders. Of course, it will be biased, as it does not reflect changes in well-being or societal value, but only in economic value. However, in some contexts, and for some audiences who are not ready to look at societal value or well-being, this indicator might be useful.

Other valuation approaches and impact definitions allow for the measurement of other types of societal or business values. For instance, stated and revealed preference techniques allow us to capture people's subjective values for some impact drivers. Alternatively, market prices, solution, damage, and mitigation costs are generally used to calculate business value in terms of risks and opportunities, or for cost–benefit analysis, for instance. This methodology does not cover these, although Valuing Impact recommends considering them depending on the objectives of the study. Those valuation are useful for reporting using the TNFD or CSRD frameworks.

26 We use the label WEALTH+ to reflect the fact that this indicator measures accumulated financial capital, to which it adds the additional drivers of wealth and expresses them as potential financial wealth as well (thus the "+"). It reflects, then, the current and future potential value of wealth of a person or group of persons. This indicator excludes any economic value does not associate to a specific stakeholder (e.g. GDP contribution) or to stakeholders for which the utility of this economic value would be 0 (e.g. rich people).

3.

Tool template

Valuing Impact developed a spreadsheet with a standardized approach to developing impact valuation, which encompasses all dataset and valuation factors presented in this methodology. This spreadsheet was developed over many years and thousands of assessed activities, projects, investments, companies, and organizations. It is available from Valuing Impact upon request.

4.

Datasets and valuation factors

To operationalize this methodology, we developed our own datasets over time; we also recommend other existing datasets.

Here is a nonexhaustive list of data sources:

Table 4

Datasets and valuation factors used for Valuing Impact pathways (datasets in italic are found in the public domain or are not developed by Valuing Impact)

Capital type	Impact pathway	Datasets and databases	Source
Human capital	**Health and well-being**	*Global Burden of Disease, 2019*	Institute of Health Metrics and Evaluation, 2019
	Income/wage and financial effects	Global Living Wage dataset (country level)	Valuing Impact, 2023
		Wages dataset (per skill and country)	Valuing Impact, 2023
		Health Utility of Income	Valuing Impact, 2021/2023
	Education/training /skills	Education earning premium	Valuing Impact and World Bank, 2021
Social capital	**Taxes and social costs**	Health Utility of Taxes	Valuing Impact, 2021

Natural capital	**Environmental externalities**	*Ecoinvent 3.9*	www.ecoinvent.org
		ReCiPe 2016 life cycle impact assessment method	RIVM, 2016
		CE Delft Environmental Prices Handbook	CE Delft, 2017
		World Resources Institute/ Valuing Impact—water solution costs for water	Strong et al., 2020
		Valuing factors for environmental impact drivers	Valuing Impact, 2023
		Ecosystem Service Valuation database	ESVD

5.

Appendix: Custom impact pathways for specific activities—Nonexhaustive list

The detailed pathways are concrete applications of the generic pathways to specific activities derived from real-world case studies. We share them here as a living and nonexhaustive list to support the applicability of the method. They are classified per generic impact pathway.

We aim to move this list into a separate document, after this first methodology publication, to ensure a living and growing document consolidating the shared knowledge created from all the projects in the world using this methodology. Reach out to Valuing Impact to know more about and access it.

5.1 Health and well-being

5.1.1 Medicine donations—Number of doses method

Generic impact pathway type	Health and well-being
What is measured/activity	Medicine donations to address an emergency or public health issue whenever the medicine types and uses are not known. We assess the health-positive impact of donating and using these doses for a specific population.
Output	Number of doses.
Outcome	We consider a generic health improvement corresponding to a DALY (or QALY) weight of 10% for a period of 2 hours of relief per dose. If the types of medicines were known, we could target more specific disability weights from GBD 2019 and more specific relief durations to use.
Additivity	We assume that 50% of doses were not used properly, did not reach patients, or were just wasted for one reason or another given that in this case, we did not have any information on the specific use of the doses and the patients reached. This corresponds to a dropoff factor. This can be adjusted according to the context.
Valuation factor	Value of DALY.

5.1.2
Medicine donations—Financial value

Generic impact pathway type	Health and well-being
What is measured/activity	Medicine donations to address an emergency or public health issue whenever the medicine types and uses are not known. We assess the health-positive impact of donating and using these doses for a specific population.
Output	Financial donation.
Outcome	We consider a generic SROI ratio, assuming, for instance, that for every USD of medicine donated, a societal value of 2.5 USD is created, based on our expertise from similar past projects. An SROI of 2.5 means that the project is functioning and delivering societal impact but is rather inefficient overall.
Additivity	None. Embedded in the SROI ratio.
Valuation factor	None. Embedded in the SROI ratio.

5.1.3
Volunteering support to refugees, internally displaced people, people on the move, or any type of migrant population

Generic impact pathway type	Health and well-being
What is measured/activity	Volunteering activities supporting immigrants or refugees either in their country of origin or during a transition phase in the receiving or transition country. This pathway assesses the societal impact on refugees of their increase in psychological well-being only.
Output	Number of beneficiaries attended.
Outcome	The increased psychological well-being for the refugees using the disability weight for moderate anxiety disorder 0.133 (GBD, 2019), assuming that the psychological effect would cover a period of 5 days for each refugee attended.
Additivity	**Baseline:** We recommend using a low baseline factor, e.g., 10–20%, to account for the possibility that the support provided may not lead to a complete reduction of anxiety and |for some other inefficiencies.
Valuation factor	Value of DALY.

5.1.4
Humanitarian NGOs' generic support

Generic impact pathway type	Health and well-being
What is measured/activity	Activities leading to an increase in physical and psychological well-being. For example: a. Provision of food, security, and livelihoods b. Health care and health attention c. Child protection d. Access to water, sanitation, and hygiene (WASH) services e. Provision of shelter and nonfood items This methodology can be used in the absence of specific data and where only the number of beneficiaries is known.
Output	Number of beneficiaries attended.
Outcome	An increase in psychological well-being for the refugees using a disability weight ranging from 2% to 20% (depending on the outcome expected from each activity). A period of benefit could be measured as a percentage of a year (e.g., 10 days / 365 days = 0.027 years). An example of a dataset is provided below.
Additivity	**Baseline:** In certain scenarios, a 10%–50% baseline parameter is used to account for the possibility that the support provided may not lead to the benefit expected and that the specifics of the activities may not be fully understood.
Valuation factor	Value of DALY.

Table 4

Suggested DALY weight and benefit duration in days for refugee support by an NGO

Beneficiary group	Food security and livelihoods	Health	Nutrition	Child Protection	WASH - Water, sanitation & hygiene	Shelter and non-food items
DALY weight	10%	10%	10%	20%	15%	2%
Duration (in days)	30	30	30	30	30	30
Basis for the calculation	Assumed that financial support is provided, or similar support (food stamps), for a specific duration.	Assumed consultations, specific health treatments and medicines are provided.	Assumed that each of those beneficiary received a pack with food for a specific number of days.	Assumed that those childs were in a complex situation (e.g. no parents, injured, etc) and treatment/ emotional/ placement supports were provided.	Assumed items (soap, hygienic pads, water, etc) are provided to those persons to ensure a basic hygiene.	Assumed items such as sleeping bags, clothes, etc are provided, in addition to a place to stay (this latter not really considered).

5.1.5
Support for employee relocation and associated benefits to well-being

Generic impact pathway type	Health and well-being
What is measured/activity	We measure the psychological benefit from support for relocating employees around the world.
Output	Number of beneficiaries relocated.
Outcome	A 10% DALY weight increase owing to the financial support over a period of 1 month per case of relocation (the duration can be extended depending on the case).
Additivity	Baseline: A low baseline parameter in the range of 25–50% can be used to account for employees' capacity to relocate by themselves.
Valuation factor	The value of DALY.

5.1.6
Integration feeling for immigrants

Generic impact pathway type	Health and well-being
What is measured/activity	Immigrating to a new country is a stressful experience. Finding a place to live, learning a new language, and searching for employment are all challenging tasks, particularly for those unfamiliar with local systems and customs. However, receiving support for integration can provide significant social benefits, such as improved psychological well-being.
Output	Number of beneficiaries supported for integration. In the absence of primary data, immigration statistics in the country of intervention can be used as a proxy.
Outcome	An increase in psychological well-being using a 20% disability weight and a period of benefit that could be measured as a percentage of a year in which the person had support (e.g., 10 days / 365 days).
Additivity	**Baseline:** A high baseline factor from 75–90% can be used as a multiplier, as not all people will feel support. There is also a chance that, for some immigrants, this support will not be useful. **Dropoff:** If support is not provided long term, a parameter of 50% can be used to account for the reduction in attention over longer periods.
Valuation factor	The value of DALY.

5.1.7
Reduction in gender-based violence

Generic impact pathway type	Health and well-being
What is measured/activity	Any intervention aimed at reducing gender-based violence. Gender-based violence undermines a person's sense of self-worth and self-esteem. It affects not only physical health but also mental health and may lead to self-harm, isolation, depression, and suicide attempts.
Output	Number of beneficiaries (women). In the absence of primary data, the quantity of women affected can be estimated by the target population intervened by the statistics of women or the country statistics of women suffering gender-based violence.
Outcome	The length of the event and the percentage drop in gender violence that can be attributed to it. For example, there may be a 1% decrease over the span of a year. Alternatively, you can use a disability weight of 0.133 for moderate anxiety disorder as a proxy, along with an estimate of the number of days per year for the duration of the event.
Additivity	**Baseline:** Several factors can influence a reduction in gender violence outside the scope of the intervention. We suggest a conservative assumption of 50% considering other external factors. **Dropoff:** There is a probability that the intervention will not totally solve the problem and that it will persist over longer periods. A factor of 25–50% can be used to account for uncertainties.
Valuation factor	Value of DALY.

5.1.8
App-driven activities that lead to benefits for well-being

Generic impact pathway type	Health and well-being
What is measured/activity	A variety of mobile phone applications are being developed to provide various benefits, such as enhancing psychological well-being, promoting a sense of community, and improving health. While developers advertise numerous advantages, these can be evaluated by considering a DALY weight increase in psychological well-being. Alternatively, the disability weights for the health conditions being treated can also be used to measure the potential changes that users experience.
Output	One can estimate the number of beneficiaries reached by analyzing the app engagement metrics, such as the number of visitors and users.
Outcome	The outcome is the feeling of integration or psychological well-being (measured in DALYs per user), which can be calculated by multiplying the duration of a positive effect (per year) with disability weights related to the health conditions being addressed.
Additivity	**Baseline:** App engagement rates are often low—typically less than 1%—as other factors may contribute to the user's recovery. **Dropoff:** This is a range anywhere from 5–10%, resulting from the uncertainty of the app being useful over a long period. **Attribution:** This is a range of factors between 1% and 10%, as there are other online tools that provide psychological support.
Valuation factor	Value of DALY.

5.1.9
Increased physical health

Generic impact pathway type	Health and well-being
What is measured/activity	Here, we measure any type of sport or outdoor activity that contributes to increased physical health.
Output	Number of beneficiaries multiplied by the % increase in physical activity as metabolic equivalents (MET) per minute (MET; the ideal exposure scenario of physical activity is defined as 3,000–4,500 METs per week and low physical activity is considered to be less than this threshold).
Outcome	According to the Global Burden of Disease data, a value of 1.98E-3 DALYs per capita can be used to measure the avoided DALYs associated with low physical activities.
Additivity	**Baseline:** There is a high probability that the person could be doing another type of physical activity (walking, working, or commuting) that is not accounted for. Therefore, a value in the range of 70–90% can be used. **Dropoff:** If the intervention cannot ensure continued physical activity, a low parameter of 20–40% should be used.
Valuation factor	Value of DALY.

Note: Physical activity (PA) is quantified using total MET minutes per week, which is calculated by summating the frequency and duration per activity and the METs corresponding to the intensity of each activity. One MET is defined as the energy cost of sitting quietly and is equivalent to 1 kcal / kg / hour. Although the accepted threshold/definition for physical inactivity is <600 MET minutes / week, this threshold may not capture all increased mortality risk caused by inadequate PA. In GBD studies, the counterfactual level of risk exposure used is the risk exposure that is both theoretically possible and minimizes risk in the exposed population, which consequently captures the maximum population attributable burden. For PA in GBD 2019, the best available epidemiological evidence from published and unpublished relative risks by PA level and the lowest observed PA level from cohorts were used to select a single PA exposure level that minimizes risk for all causes of death combined to establish the theoretical minimum-risk exposure level (TMREL). The TMREL for PA was estimated to be 3,000–4,500 MET minutes per week, at which minimal deaths across outcomes occurred.

5.1.10
Increased sexual and reproductive health

Generic impact pathway type	Health and well-being
What is measured/activity	Interventions that promote sexual and reproductive health education among children and adolescents and that encourage the use of contraceptives or the adoption of habits that reduce the risk of contracting sexually transmitted infections (STIs) are measured.
Output	Number of beneficiaries or % of adolescents in the population.
Outcome	One positive result of sexual and reproductive health education is the decrease in the spread of sexually transmitted diseases. To measure the impact of the intervention, we can use the risk factors (DALYs / capita from the Global Burden of Disease) associated with HIV / AIDS, STIs, and gynecological diseases from the Institute of Health Metrics and Evaluation and calculate the number of avoided DALYs in the population that received the education.
Additivity	**Baseline:** It is unlikely that a single intervention would be sufficient to encourage contraceptive adoption or risk reduction habits in teenagers. Therefore, we recommend a low (e.g., 50%) baseline parameter. **Dropoff:** Without long-term follow-up programs on sexual education, we recommend using a low dropoff parameter in the range of 10–20%.
Valuation factor	Value of DALY.

5.1.11
Psychological well-being from avoided child marriage

Generic impact pathway type	Health and well-being
What is measured/activity	Child marriage is a harmful practice that affects a girl's health, education, and overall well-being. Girls who marry as children are more likely to suffer from violence and abuse, experience restricted physical mobility, and have limited decision-making ability and personal agency. They also have a higher risk of dropping out of school and being economically insecure. Therefore, any activity that aims to reduce or prevent child marriage is crucial. In this pathway, we assess only the increase in psychological well-being.
Output	Number of beneficiaries. To estimate the number of beneficiaries if the beneficiaries are not directly targeted, the total population addressed by an activity, multiplied by the ratio of women and the prevalence of child marriage based on the literature or public statistics, can be used.
Outcome	A 20% increase in psychological well-being over a period of 3 years.
Additivity	**Baseline:** This is when the activities relate to raising awareness, education, support system, and policy change. In these latter cases, a baseline of no more than 10% is recommended. **Dropoff:** For situations in which the benefit is lost for some reason over time, we recommend using at least 10–20%.
Valuation factor	Value of DALY.

5.1.12
Reduction of disease and WASH

Generic impact pathway type	Health and well-being
What is measured/activity	This is any activity that leads to the reduction of a disease, such as access to WASH, vaccines, or health interventions oriented to a change in behavior.
Output	Number of beneficiaries reached by the intervention; that is, the number of people who benefit from the intervention. In cases in which the beneficiaries are not directly reported, population statistics (% of children, % of women, etc.) can be used. These can be combined with the % rate of change or the % increase in beneficiaries who have new behavior.
Outcome	Health benefits are assessed in terms of a reduction of the diseases experienced by the beneficiaries. The GBD database or any other specific report can be used as a secondary data source to provide the average rate of diseases per capita and their equivalent DALYs (calculated by multiplying their disability weight by their duration).
Additivity	**Baseline:** Depending on the challenge addressed, the baseline parameter can range from very low values (10–15%) when the intervention does not solve the whole problem to higher values (100%) when the intervention is comprehensive and long term. **Dropoff:** This parameter is directly linked to how well the intervention is sustained over time. For example, for a safe water source infrastructure, the project might fail to provide maintenance over longer periods, leading to the deterioration of the infrastructure. In cases such as this, a 20% dropoff per year can be used. In other cases in which the effect of the intervention can be sustained, dropoff values of 0–10% can be used.
Valuation factor	The valuation of DALY, based on the social utility of life, is used. There are other pathways that can be linked to a reduction of disease (linked to WASH activities or not), which are addressed separately: • Education, productive time saved, additional income • Avoided healthcare costs • Reduced environmental impact

5.1.13
Cases of injury or death by fire in supply chains

Generic impact pathway type	Health and well-being
What is measured/activity	Some places and activities expose people to a high risk of fire. This pathway was created to assess the impact of fire-related injuries and deaths in suppliers or external sites. It can be used to either estimate the intrinsic risk of people being injured or dying by fire, or the positive impact that an improvement has made to prevent such occurrences.
Output	The number of individuals injured or killed by fire in the analysis period. To estimate the number of individuals when such a metric is not directly measured, one can use the total population exposed to the risk of fire multiplied by the ratio of injuries and deaths by fire from the literature or public statistics (usually found in the form "number of cases per 100,000 persons").
Outcome	The Global Burden of Disease database or any other specific report can be used as a secondary data source to provide an equivalent DALY (calculated as the multiplication of their disability weight by their duration). In the absence of an accurate figure, we recommend using a value between 1.0×10^{-5} and 3.0×10^{-4} DALYs/person.
Additivity	**Baseline:** When primary data is available, the baseline is 100%. When estimating the number of people affected using public statistics, consider the time individuals spend exposed to the risk over the analysis period (for example, 10 hours per day, 3 days per week over a 1-year period: $(10/24) \times (3/7) \times (1/1) = 18\%$). **Dropoff:** For situations where the benefit is lost over time, we recommend using at least 50–70%. **Attribution:** Consider the nature of your intervention and what other people must perform. For example, if you ensure that there are enough fire extinguishers, you are still relying on people to use them in a timely and correct manner. In such cases, we recommend attributing less than 50% of the change to your organization.
Valuation factor	Value of DALY

5.1.14
Cases of occupational injuries or death in supply chains

Generic impact pathway type	Health and well-being
What is measured/activity	Some places and activities expose people to high risks of injuries. This pathway was created to assess the impact of occupational injuries and deaths in suppliers or external sites. It can be used to either estimate the intrinsic risk of people being injured or dying through the course of their occupational activities, or the positive impact that an improvement has to prevent such occurrences.
Output	The number of individuals injured or killed through the course of their occupational activities in the analysis period. To estimate the number of individuals when such a metric is not directly measured, one can use the total population exposed to occupational risk multiplied by the ratio of occupational injuries and deaths from the literature or public statistics (usually found in the form "number of cases per 100,000 persons").
Outcome	The Global Burden of Disease database or any other specific report can be used as a secondary data source to provide an equivalent DALY (calculated as the multiplication of their disability weight by their duration). In the absence of an accurate figure, we recommend using a value between 1.0×10^{-4} and 5.0×10^{-2} DALYs/person.
Additivity	**Baseline:** When primary data is available, the baseline is 100%. When estimating the number of people affected using public statistics, consider the time individuals spend exposed to the risk over the analysis period (for example, 10 hours per day, 3 days per week over a 1-year period: $(10/24) \times (3/7) \times (1/1) = 18\%$). **Dropoff:** For situations in which the benefit is lost over time, we recommend using at least 50–70%. **Attribution:** Consider the nature of your intervention and what other people must perform. For example, if you ensure that there is enough personal protective equipment for all workers, you are still relying on people to use it in a timely and correct manner. In such cases, we recommend attributing less than 50% of the change to your organization.
Valuation factor	Value of DALY

5.1.15
Cases of forced labor in supply chains

Generic impact pathway type	Health and well-being
What is measured/activity	This pathway was created to assess the impact of forced labor on suppliers or external sites. It can be used to either estimate the impact of people working under conditions classified as modern slavery by the International Labor Association, or the positive impact that a mitigation strategy has in preventing such occurrences.
Output	The number of individuals working under conditions classified as modern slavery by the ILO in the analysis period. To estimate the number of individuals when such a metric is not directly measured, one can use the total population potentially exposed to forced labor multiplied by the prevalence ratio of forced labor from the literature or public statistics (usually found in the form "number of cases per 1,000 persons").
Outcome	A change of at least 20% in overall well-being over a period of 1 year.
Additivity	**Baseline:** Depending on the challenge addressed, the baseline parameter can range from very low values between 10% and 15% when the intervention does not solve the whole problem to higher values of 100% when the intervention is the only way to address the issue. **Dropoff:** For situations in which the benefit is lost over time, we recommend using at least 50–70%. **Attribution:** Consider how many other organizations are helping curtail (or indirectly contribute to) forced labor. In the absence of detailed data, we recommend using the share of the supplier's production that you purchase vs. the total production of this supplier.
Valuation factor	Value of DALY

5.1.16
Effects of using sunscreen

Generic impact pathway type	Health and well-being
What is measured/activity	This pathway was created to assess the impact of ensuring the availability of sunscreen to a target population. Based on scientific evidence on the topic, we assume that the regular use of sunscreen can lead to lower incidences of skin diseases in the target population.
Output	Number of individuals in the target population.
Outcome	The Global Burden of Disease database or any other specific report can be used as a secondary data source to provide an equivalent DALY (calculated as the multiplication of their disability weight by their duration). In the absence of an accurate figure, we recommend using a value between 6.0×10^{-5} and 2.5×10^{-3} DALYs/person.
Additivity	**Baseline:** To accrue the full benefit of using sunscreen, the individual must make regular use of it. Therefore, we suggest using a baseline of less than 50% to account for the fact that a share of the population will not be able to claim full benefits. **Dropoff:** Without long-term follow-up programs to ensure access to sunscreen, we recommend using a very low dropoff parameter in the range of 10–20%. **Attribution:** Access to sunscreen is only one component that may help people prevent skin diseases. Therefore, we suggest using a low attribution of 20–50%.
Valuation factor	Value of DALY

5.1.17
Effects of comfort/social integration from the use of cosmetics

Generic impact pathway type	Health and well-being
What is measured/activity	This pathway was created to assess the impact that using cosmetics, such as moisturizers or makeup, has on the feeling of comfort or social integration.
Output	The number of times the cosmetic product is used. In the absence of an accurate figure, one can estimate this value by dividing the total volume of product sold/distributed by its dosage.
Outcome	Each usage only renders a small increment in comfort or social integration with a limited duration. We recommend using an increment of 1–3% in comfort for a period of up to 2 hours. Such estimates would result in outcomes ranging from 1.1×10^{-6} and 6.8×10^{-6} DALYs/use.
Additivity	**Baseline:** Comfort and social integration are complex constructs that depend on a series of factors. Therefore, we recommend using an extremely low baseline value of around 0.5–1.0% to account for the fact that using cosmetics is only a tiny fraction of this outcome. **Dropoff:** If the cosmetic's effect decreases after several uses, we recommend taking this effect into account in the dropoff factor. Otherwise, a factor of 70–100% is recommended. **Attribution:** Depending on your place in the supply chain, your organization can try to allocate some share of the impact to you. In the absence of better references, we suggest assuming a value of less than 50%.
Valuation factor	Value of DALY

5.1.18
Effects of convenience from the use of housewares

Generic impact pathway type	Health and well-being
What is measured/activity	This pathway was created to assess the impact that using housewares such as pans and cups has on the feeling of convenience.
Output	The number of times the houseware is used. In the absence of an accurate figure, one can estimate this value by taking the inverse of the expected number of times the product will be used over its lifetime.
Outcome	Each usage only renders a small increment in the feeling of convenience with a limited duration. We recommend using an increment of 1–3% in comfort for a period of up to 1 h. Such estimates would result in an outcome ranging from 1.1×10^{-6} and 3.4×10^{-6} DALYs/use.
Additivity	**Baseline:** Convenience is a complex construct that depends on a series of factors. Therefore, we recommend using an extremely low baseline value of around 0.5–1.0% to account for the fact that using cosmetics is only a tiny fraction of this outcome. **Dropoff:** If the effect decreases after several uses, we recommend taking this effect into account in the dropoff factor. Otherwise, a factor of 70–100% is recommended. **Attribution:** Depending on your place in the supply chain, your organization can try to allocate some share of the impact to you. In the absence of better references, we suggest assuming a value of less than 50%.
Valuation factor	Value of DALY

5.2 Income, wages, and personal finances

5.2.1 In-kind benefits to corporate employees

Generic impact pathway type	Income and financial effects
What is measured/activity	Providing in-kind support and other nonmonetary services (e.g., housing and insurance) for employees.
Output	Number of beneficiaries supported financially.
Outcome	The equivalent financial value of the support provided is estimated as a cost saving for the beneficiaries (the employees).
Additivity	-
Valuation factor	HUI per country.

5.2.2 Employee cash donations for NGOs

Generic impact pathway type	Income and financial effects
What is measured/activity	Provide cash donations directly to beneficiaries, as a form of emergency response and support to communities, collected from the employees of a business.
Output	Number of beneficiaries supported financially.
Outcome	The financial value of the cash transfer to the beneficiaries.
Additivity	-
Valuation factor	HUI per country, which can be adapted to low-income households or beneficiaries at risk (higher HUI than t he average of the country, using, for instance, a 2x multiplier).

5.2.3
Employment for refugees

Generic impact pathway type	Income and financial effects
What is measured/activity	Create employment through a commercial or NGO activity as part of the overhead or production capacity.
Output	Number of employment positions created, usually measured in full-time equivalent (FTE).
Outcome	The value of the wage provided and, if relevant, the gap to the living wage per employee. The employees or FTE can be categorized per salary range or modeled individually (best practice).
Additivity	An additivity factor can be used to consider the fact that these jobs might be transferred instead of created. In this matter, we sometimes use the unemployment rate as a multiplier, which reflects the rate at which we add new jobs to the economy.
Valuation factor	HUI per country.

5.2.4
Income from tourism activities (homestays, hotels, and guides)

Generic impact pathway type	Income and financial effects
What is measured/activity	Any tourism activity that directly benefits the population participating in the initiative, such as accommodation services, meals, homestays, and guided tours.
Output	The number of people that participate in tourist activities. In other cases, there might be a need to use the country's statistics of economic activity dedicated to tourism.
Outcome	The net increase income (without tax) that is perceived by the tourism service providers.
Additivity	**Baseline:** If the tourism activity would not have occurred without any intervention, a 100% factor can be applied. However, in countries in which tourism is the primary activity, the use of a low (10%) factor is recommended. This is because there is a high chance that the activity would have taken place, even without any intervention. **Dropoff:** Depending on the business model, there is a possibility that the intervention may not be successful in the long run. For instance, tourists may stop visiting owing to poor services or external factors, such as the COVID-19 pandemic. In such cases, a low dropoff rate may range from 10%–25%.
Valuation factor	HUI per country.

5.2.5
Immigrants decreased time to employment

Generic impact pathway type	Income and financial effects
What is measured/activity	Activities that aim to reduce the amount of time it takes for immigrants to find employment in the country of residence, based on an activity to support them in finding job opportunities.
Output	The number of immigrants that are being part of the program.
Outcome	The time saved is quantified as the net present value of the social security paid by the state if the person does not have employment.
Additivity	**Baseline:** If it can be proven that the activity guarantees a reduction in time to get employment, we can consider a very high 90% value. **Dropoff:** Country statistics for job retention or turnover rates can be used to estimate the dropoff parameter. Otherwise, one could use an average of 80–90% of immigrants keeping jobs over a long period.
Valuation factor	HUI per country.

5.2.6
Women and household productive time saved

Generic impact pathway type	Income, wages, and personal finance
What is measured/activity	Here, we measure any activity that reduces the amount of time spent doing household tasks or that has positive health outcomes (e.g., the reduction of disease) that allow people to be more productive.
Output	The output of this impact pathway is the total quantity of time saved per beneficiary. For example, if there is a reduction in cases of diarrheal disease owing to access to a safe water source, a good proxy is the amount of time a person would avoid being sick (a diarrhea case usually lasts 3–4 days). Another example is when the intervention allows for saving wood fuel collection due to the donation of a cookstove. Women would have more time than previously because they would not need to gather wood fuel. Another example is when there is a well that is established close to a household; beneficiaries would save as much as a 2-hour round trip to fetch water from the nearest point of access.
Outcome	The value of time, which can be expressed as the average wage rate per hour of the country of intervention ($/hour).
Additivity	**Baseline:** Depending on the activity, the baseline parameter can range from very low values (10–15%) if it does not provide the full solution to higher values (100%) when the activity is very comprehensive. **Dropoff:** This parameter is directly linked to how well the intervention is sustained over time. For example, for a safe water source infrastructure, the project might fail to provide maintenance over longer periods, leading to the deterioration of the infrastructure. In cases such as this, a 20% dropoff per year can be used. In other cases in which the effect of the intervention can be sustained, higher dropoff values (0–10%) can be used.
Valuation factor	Pathway valued using HUI factors, which can be further adapted according to the specific situation of the beneficiaries.

5.2.7
Change in personal or household spending

Generic impact pathway type	Income, wages, and personal finance
What is measured/activity	Here, we measure any activity that provides a cost saving to the household or population (the beneficiaries). The following are examples: • Access to clean water might lead to reduced purchases of bottled water. • Access to electricity reduces the amount of money spent on battery packs. • An efficient cookstove might lead to reduced purchases of wood for fuel.
Output	The total number of beneficiaries that have a change in purchasing behavior.
Outcome	The economic outcome is quantified using the displacement of products being purchased before the intervention (net change of income) or the quantity of money that is saved.
Additivity	-
Valuation factor	Pathway valued using HUI factors.

5.2.8
Gender-based pay gap in supply chains

Generic impact pathway type	Income, wages, and personal finance
What is measured/activity	This pathway was created to assess the impact of gender-based pay gaps on suppliers or external sites. It can be used to estimate either the impact of female workers receiving less than their male counterparts for a similar job or the positive impact that a mitigation strategy has in preventing such occurrences.
Output	The number of female individuals earning less than their male counterparts for a similar job. To estimate the number of individuals when such a metric is not directly measured, one can assume that the entire female population is potentially facing a wage pay gap issue.
Outcome	Ideally, we would use the average pay gap observed in the supplier from primary data. In the absence of such a value, we can estimate the pay gap using average salary databases (the most granular possible) and pay gap data from the literature or public databases, such as that of the OECD.
Additivity	**Baseline:** Depending on the challenge addressed, the baseline parameter can range from very low values from 10–15% when the intervention does not solve the whole problem to higher values of 100% when the intervention is the only way to address the issue. **Dropoff:** For situations in which the benefit is lost over time, we recommend using at least 10–20%. **Attribution:** Consider how many other organizations are helping curtail (or indirectly contribute to) the pay gap. In the absence of detailed data, we recommend using the share of the supplier's production that you purchase vs. the total production of this supplier.
Valuation factor	This pathway is valued using the health utility of income factors.

5.3 Education/training/skills

5.3.1 Absenteeism reduction from health interventions

Generic impact pathway type	Income and financial effects
What is measured/activity	Interventions that improve student health can reduce school absenteeism.
Output	The output of this pathway is measured as days of education gained owing to the intervention. If the number of days gained is not known from primary data sources, an estimate can be obtained using the risk factors of diarrheal and lower respiratory diseases linked to unsafe water sources, unsafe sanitation, and no access to handwashing facilities. The conversion from the risk factor (DALYs/capita) is made using a multiplier of 365 days per DALY. As an example, the risk factor for diarrheal disease in Mexico is 3.28E-3 DALYs/capita × 365 = 1.20 days of life lost per person. We can usually have an additional multiplier of 3–4 days because one disability day of diarrheal disease can create up to 3–4 days of absence from school.
Outcome	The conversion from the risk factor (DALYs/capita) is made using a multiplier of 365 days per DALY. For example, the risk factor related to diarrheal disease in Mexico is 3.28E-3 DALYs/capita, which is multiplied by 365 = 1.20 disability days per person. Usually, we can have an additional multiplier of 3 days because 1 disability day of diarrheal disease can create 3 days of absence from school (1.2 × 3 = 4 days gained). The days gained are multiplied by the earning premium for primary, secondary, or tertiary education. The outcome unit is in monetary units per student ($/capita).
Additivity	**Baseline:** There is a slight chance that increased health outcomes occur due to other factors not related to the intervention, or that the intervention is inefficient for a variety of reasons. Therefore, an average efficiency of 60–80% could be used to account for uncertainty. **Dropoff:** Although there might be an initial health outcome over the long term, some interventions might fail to provide long-term support for the new habits or increased health to be maintained over time. We suggest 20–50% to account for the efficiency wearing out.
Valuation factor	HUI per country.

5.3.2
Online education and training

Generic impact pathway type	Education/skills/training
What is measured/activity	Online training courses (e.g., Coursera).
Output	Duration of training (in days) delivered by the number of beneficiaries (beneficiaries–hours).
Outcome	Earning premium used per country for secondary or tertiary education, depending on the topic of the course and the context of the beneficiaries.
Additivity	**Baseline:** A factor that can be used to account for the success of online training courses is completion rates (dropoff). We use, by default, a 50% dropoff rate, although this data can be replaced by actual knowledge retention or program completion.
Valuation factor	HUI per country.

5.3.3
Health or NGO workers gaining experience

Generic impact pathway type	Education/skills/training
What is measured/activity	Training for health or NGO staff.
Output	Duration of training (in days) delivered by the number of beneficiaries (beneficiaries–hours). In specific cases, we used a multiplier for the real duration of the training to express the high value of the training targeted for the specific need in the context of the activity. We used factors ranging from 2x to 3x.
Outcome	Earning premium used per country for secondary or tertiary education, depending on the topic of the skill acquired and the context of the beneficiaries. This outcome can be complemented by other pathways (health benefits for patients, feelings of accomplishment and happiness, etc.).
Additivity	**Baseline:** We suggest a 100% baseline parameter solely for training that is specific to an area of expertise (not generic health). If the training cannot happen, a lower baseline could be used, depending on the case.
Valuation factor	HUI per country.

5.3.4
Nonformal education

Generic impact pathway type	Education/skills/training
What is measured/activity	Any nonformal education activity, such as a 1-day computer course, 1 week of training in woodwork, or a 1-month Excel course.
Output	The estimated total training time can be calculated by multiplying the number of beneficiaries by the duration (in hours or days).
Outcome	Earning premium of education per hour or day.
Additivity	**Baseline:** When it is possible for the population to receive training through other means, a baseline parameter of 20–80% can be used. Otherwise, a value of 100% should be used. **Dropoff:** For short training, there is a higher probability of the knowledge being lost over time and if it is not put into practice; therefore, we could use a 20–50% dropoff rate.
Valuation factor	HUI per country.

5.3.5
Reduction in dropout rate from secondary school

Generic impact pathway type	Education/skills/training
What is measured/activity	Any activity that aims to maintain children or adolescents at school or reduce the dropout rate.
Output	There are various methods to determine the output, such as calculating the number of children who attend school or measuring the increased duration of their attendance. If primary data are unavailable, dropout rate statistics per country can be utilized. Ultimately, the outcome should be measured in terms of the additional time that students spend in school, either in hours or days.
Outcome	The earning premium of education per day (primary, secondary, or tertiary) depending on the intervened population.
Additivity	**Baseline:** School dropout is a multicausal problem. Therefore, the intervention might address one or more factors, so any baseline factor should account for this. In the case of high uncertainty, a low baseline factor of anywhere from 25–50% can be used. **Dropoff:** Controlling for long-term effects in school attendance is highly uncertain; therefore, a low dropoff rate is recommended to account for the factors involved in keeping students in school (10–25%). **Attribution:** A conservative approach should be considered because reducing dropout rates in adolescents is addressed not only by NGOs but also by government education institutions. Therefore, a parameter of at least 50% is required as a starting point.
Valuation factor	HUI per country.

5.3.6
Financial literacy

Generic impact pathway type	Health and well-being
What is measured/activity	Interventions aimed to increase financial literacy in population without any knowledge of business management.
Output	Training time delivered as number of days or hours of nonformal education.
Outcome	The earning premium of education per hour or day.
Additivity	No additivity factors used, as we consider the full benefit for the intervened population.
Valuation factor	HUI per country.

5.4 Taxes

5.4.1 Personal income taxes

Generic impact pathway type	Taxes
What is measured/activity	Tax income for the government paid on income change provided by an activity. This is the case for the vast majority of income received in the world.
Output	Number of beneficiaries observing a change in income.
Outcome	Taxation rate per country and tax bracket taken from the PwC or KPMG websites.
Additivity	No additivity factors used, as we consider the full benefit for the intervened population.
Valuation factor	HUT per country.

5.5 Social costs

5.5.1 Avoided healthcare costs from decreased disease rate

Generic impact pathway type	Social costs
What is measured/activity	Any intervention with the goal of reducing disease rates leading to healthcare cost savings for the state. This can be linked, for instance, to reproductive health, access to WASH services, and other types of interventions.
Output	Number of beneficiaries with improved health.
Outcome	Healthcare expenditure per beneficiary. Open-source data from the World Health Organization or the World Bank can be used to estimate each country's per capita health expenditure.
Additivity	**Baseline:** The change in healthcare cost linked to the reduction of disease measured can be determined by considering the number of times individuals are getting a disease per year or by using the ratio between the additional number of days gained from the reduction of disease and the average number of days sick in the population. **Dropoff:** Without long-term follow-up programs, we recommend using a very low dropoff parameter in the range of 10–20%.
Valuation factor	HUT per country.

5.5.2
Tax increase from reduced unemployment time for immigrants

Generic impact pathway type	Taxes
What is measured/activity	When immigrants integrate faster into a new society, it can have a positive impact on the economy by providing them with employment opportunities. This, in turn, allows them to pay income taxes. The amount of taxes paid by these integrated immigrants can be measured as a pathway for determining their contribution to society.
Output	Number of beneficiaries with improved health.
Outcome	Quantity of taxes paid or a % of income tax estimated directly from the salary.
Additivity	**Baseline:** We can account for the success rate in matching immigrants with work opportunities matching their skill set, if not already accounted for in the definition of the outcome.
Valuation factor	HUT per country.

5.6 Environmental externalities

5.6.1 Environmental impacts of airplane travel

Generic impact pathway type	Environmental externalities
What is measured/activity	Traveling by plane generates GHG emissions that cause climate change, as well as other natural capital impact.
Output	The number of people traveling by air based on the distance covered or the amount of fuel used. This output is measured in terms of the km traveled per person or volume/mass of fuel used.
Outcome	Natural capital impact indicators, covering 17 or 19 indicators (ReCiPe method) as explained in the respective methodology chapter. This also covers GHG emissions in tCO_2e/km travelled or liter of fuel used.
Additivity	**Baseline:** 100% attributed to the users of the flight. **Dropoff:** 0%, as this activity always happens.
Valuation factor	Valuing Impact provides a set of valuation factors to cover all 17/19 impact indicators from ReCiPe method.

5.6.2
Avoided food waste

Generic impact pathway type	Environmental externalities
What is measured/activity	Surplus food is produced when food availability exceeds the demand driven by global overproduction and contributes to food waste and all the environmental impacts associated with production upstream of agrifood value chains.
Output	The quantity of surplus food or food waste (tonnes or kg) that is avoided or reduced by the activity.
Outcome	Avoided emissions per kg of food production that can be sourced from secondary datasets, such as Ecoinvent, which provide impact indicators for each food type.
Additivity	**Baseline:** The definition of the output already provides the change from the baseline. **Dropoff:** For this pathway, the dropoff parameter can be neglected.
Valuation factor	An average HUT factor converts the economic value of ecosystem services into a unique measure of social well-being, aligned with the eQALY method.

5.7 Ecosystem services

5.7.1 Reduced impact on local forests from household activities

Generic impact pathway type	Ecosystem services
What is measured/activity	Any activity that reduces pressure on local natural resources, such as forests, linked to household or community activities. For example, efficient cookstoves or water filters reduce the amount of fuel collected from local forests used to cook or boil water.
Output	The quantity in physical units of the natural resource being used (kg of biomass or m^3 of groundwater saved).
Outcome	The outcome is measured in terms of change or conservation of the forest's ecosystem services. The value of those ecosystem services can be found in the literature. Forest ecosystem service values typically range between 500 and 5,000 USD/ha. Ideally, the market, damage, or mitigation cost valuation techniques should be prioritized.
Additivity	**Baseline:** In this case, the baseline parameter is high (80–100%) to account for the avoided pressure on nature; this can also come from other sources, not only household firewood use. **Dropoff:** The dropoff parameter could account for shifting behavior over time, such as the use of firewood for other purposes, which does not effectively reduce forest degradation.
Valuation factor	An average HUT factor (0.71 USD/USD) converts the economic value of ecosystem services into a unique measure of social well-being, aligned with the eQALY method.

5.7.2
Marine conservation benefits

Generic impact pathway type	Ecosystem services
What is measured/activity	Marine areas that are protected provide a number of benefits for biodiversity (species richness, habitat preservation, etc.) and communities (fish spillover, touristic value, etc.). When degraded areas are protected, they increase in value over time.
Output	The sea area protected (in ha), the amount of fish stock available for local fishermen (kg or t of fish caught), or the additional number of tourist visits per year (#).
Outcome	The outcome is either the gain of ecosystem services (in USD/ha) found in the literature (transfer value), the value of the additional fish caught (e.g., using market prices), or the local spend per additional tourist visiting the protected area (in USD/tourist).
Additivity	**Baseline:** We consider that the increase in the value of ecosystem services or fish stock does not exceed 1–5% improvement per year. This can change according to the local context. **Dropoff:** We consider that the conservation activity is not always successful, that some illegal fishing can occur, or that tourism activity can damage the area. A value of 5% or 10% of dropoff is typical but needs to be adjusted to the local context or project specificities.
Valuation factor	An average HUT factor (0.71 USD/USD) converts the economic value of ecosystem services into a unique measure of social well-being, aligned with the eQALY method.

5.7.3
Avoided plastic leaked to oceans

Generic impact pathway type	Ecosystem services
What is measured/activity	The change of plastic leaking toward freshwater bodies and oceans. Plastic can come from manufacturing processes, tire wear, washing, the use phase, and the end of life of products.
Output	The quantity of plastic leaked toward freshwater bodies or the sea (in kg or t). It can be estimated using the Plastic Leak Project method and data.
Outcome	There is little existing research on the economic cost or damage to the ecosystem caused by plastics in oceans. Beaumont et al. (2019) wrote one of the only articles providing a range of costs—from 3,000 to 33,000 USD per tonne of plastic leaked into oceans. We recommend using an average or lower bound value, to remain conservative.
Additivity	**Baseline:** The definition of the output already provides the change from the baseline. **Dropoff:** For this pathway, the dropoff parameter can be neglected.
Valuation factor	An average HUT factor converts the economic value of ecosystem services into a unique measure of social well-being, aligned with the eQALY method.

5.7.4
Advocacy and policy change for plastic waste reduction

Generic impact pathway type	Ecosystem services
What is measured/activity	The advocacy activities that aim to produce a policy change toward plastic pollution and reduce the quantity of plastic leaking into the ocean. There is high uncertainty regarding the direct effect, which requires additivity parameters.
Output	Number of people affected by the policy change.
Outcome	The quantity of plastic leakage (tonnes or kg) prevented from entering the ocean, based on average citizen or consumer behavior. The economic cost can be estimated based on Beaumont et al. (2019) (see the "Avoided plastic leaked to the oceans" pathway).
Additivity	**Baseline:** A range of 10–30% values is used to account for the uncertainty of the activity. **Dropoff:** 50% is used to account for the effectiveness of the advocacy activity in influencing a policy change. **Attribution:** In general, a very low attribution (1%) is used to account for the high quantity of factors that influence a policy change that is not dependent on an individual organization. Some of the other factors include the state moving toward better waste management, public opinion, and other advocacy partners.
Valuation factor	An average HUT factor converts the economic value of ecosystem services into a unique measure of social well-being, aligned with the eQALY method.

VALUING
IMPACT