IFVI
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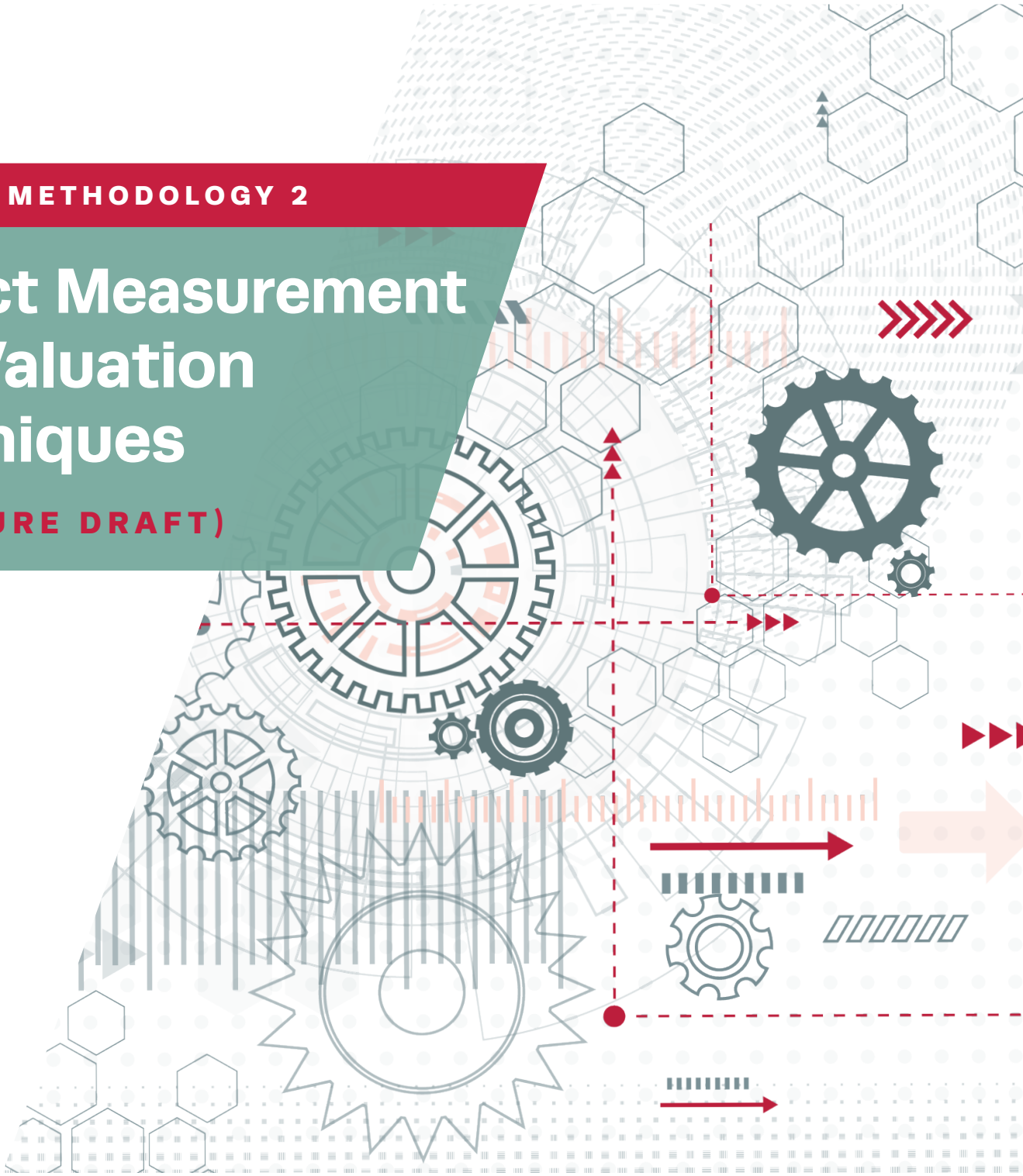
GENERAL METHODOLOGY 2

Impact Measurement and Valuation Techniques

(EXPOSURE DRAFT)



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This Exposure Draft has been produced by the International Foundation for Valuing Impacts (IFVI) in partnership with the Value Balancing Alliance (VBA) as part of the impact accounting system (the Methodology). The Methodology is a globally applicable and comprehensive methodology for the public good for valuing organizational social and environmental impact that is designed for incorporation into financial analysis and organizational planning and decision-making.

The Methodology is governed by the Valuation Technical & Practitioner Committee (VTPC), an independent committee comprising 18 members, established by IFVI and authorized by its Terms of Reference to direct, validate, and approve impact accounting research and methodology produced by the cooperation of the IFVI and VBA.

VTPC members are global leaders in the fields of impact, sustainability, accounting, business, and finance. Members provide advice in their individual capacities as experts, with composition and procedures designed to ensure independence, balance, and the avoidance of conflicts of interest. Please refer to the full Terms of Reference for information regarding membership, voting, and approval processes.

Methodology development aims to follow a rigorous and credible due process balanced with the urgent and dynamic needs of stakeholders in the face of great social and environmental challenges. The development process is outlined in the Due Process Protocol and designed to be impact-focused, stakeholder-informed, collaborative, and transparent. As detailed in the Due Process Protocol, formal methodology statements undergo public exposure prior to final approval by the VTPC.

The IFVI Board of Directors provides oversight to the Due Process Protocol through its Due Process Oversight Committee. More information about the VTPC and Due Process Protocol are available in the VTPC Terms of Reference and Due Process Protocol.

Questions or comments about IFVI governance or methodology can be submitted to the VTPC at VTPCLeadership@ifvi.org, the Chair of the DPOC at DueProcessOversight@ifvi.org, or directly to technical staff at research@ifvi.org.

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Explanatory Note

Background

This document, the Exposure Draft for *General Methodology 2: Impact Measurement and Valuation Techniques*, provides an initial proposal to solicit feedback on the concepts and methods that are required to develop impact accounting methodologies and prepare impact accounts.

This statement is the second General Methodology statement published as part of the impact accounting system (the Methodology) being developed by the partnership between the International Foundation for Valuing Impacts (IFVI) and the Value Balancing Alliance (VBA). The concepts of and methods for impact accounting are not inherently consistent across sustainability topics and industries. The General Methodology is designed to provide guidance on the conceptual and methodological components of the Methodology that are generalizable and to inform the development of Topic and Industry-specific Methodologies.

This statement builds on the vision for impact accounting presented in *General Methodology 1: Conceptual Framework for Impact Accounting*, which introduced key concepts, definitions, and principles used in the Methodology, by outlining the approach to data requirements, and presenting quantitative methods that are required to develop impact accounting methodologies and prepare impact accounts. This statement also clarifies approaches for clearly defining an impact and choosing the most suitable methods for measuring and valuing impacts for the rest of the Methodology.

This statement was developed by the technical staff beginning in December 2023. The development process involved a comprehensive literature review of frameworks, protocols, and standards for measuring and valuing the impacts of corporate entities, including those of the Capitals Coalition, Impact Economy Foundation, Impact Management Platform, Impact Weighted Accounts project at Harvard Business School, ISO standards, Social Value International, Transparent Project, and the Value Balancing Alliance.

The technical staff also closely reviewed the OECD Well-being Framework, and sought expert consultation on how to apply that framework to impact accounting. The disclosures of the European Sustainability Reporting Standards (ESRS), Global Reporting Initiative (GRI), and International Sustainability Standards Board (ISSB) of the IFRS were also reviewed as this statement seeks to establish connections to sustainability-related disclosures.

This statement was originally distributed to the Valuation Technical and Practitioner Committee (VTPC) as a Pre-Exposure Draft in May of 2024. The members of the VTPC provided feedback and the Exposure Draft was approved on June 26, 2024, for public distribution in order to solicit comments and feedback.

Exposure draft summary

The following is a section-by-section summary of key proposals made in the Exposure Draft of General Methodology 2 and is not an exhaustive overview of the statement. The summary is included to support the public comment questions by highlighting key points and decisions made in the development of the Exposure Draft.

Section 1: Introduction

Section 1.1 establishes the purpose of the statement, which is to outline the data requirements and methods that are necessary for impact measurement and valuation in the context of impact accounting, and presents the frameworks, protocols, and standards that the statement builds upon. The section then reviews the relationship between the General Methodology and Topic and Industry-specific Methodologies, restating a proposal made in General Methodology 1 that no content in the General Methodology overrides guidance in Topic or Industry-specific Methodologies.

This section establishes that the General Methodology exists to provide guidance for and transparency into the development of Topic and Industry-specific Methodologies. The section also reiterates that in the absence of published Topic and Industry-specific Methodologies, preparers of impact accounts can use the General Methodology to prepare impact pathways for additional topics and industries. The disclosures that should be made to users of impact information when preparers design their own impact pathways are listed.

Section 1.2 summarizes the process to measure and value impacts, which builds on the logic of an impact pathway and can be articulated in three steps. The first step relates to the impact driver stage of the impact pathway, the second step relates to the outcome and impact stages of the impact pathway, and the third step sits outside of the impact pathway and covers the monetary valuation of impacts.

Section 2: Data requirements and impact drivers

Section 2.1 provides an overview of the impact driver data required to prepare impact accounts. Impact driver data are specific to the entity and must be collected to establish connections between the entity's activities and the impact being measured. Impact driver data may be sourced from within the entity or from external sources.

Section 2.2 introduces data sources for impact drivers. The delineation between primary and secondary sources was cross-referenced with frameworks and protocols in the impact management ecosystem and sustainability-related disclosures to ensure alignment in definitions.

This section includes a statement, similar to statements in the *Natural Capital Protocol* and *Social and Human Capital Protocol* of the Capitals Coalition and *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* of the GHG Protocol, which establishes that while primary data is the preferred source within an entity's own operations and value chain, secondary data may be used if primary data is unavailable or if secondary data is of higher quality.[1] In practice, a combination of primary and secondary data may be used to quantify impact drivers.

Section 2.3 describes commonly used modeling techniques that can be used to estimate impact drivers for an entity's own operations and value chain when data gaps exist, or data are not of sufficient quality. Each data source and modelling technique has limitations and varying degrees of suitability. For this reason, the Methodology relies on the application of the qualitative of characteristics of faithful representation, comparability, understandability and verifiability as a means to decide between data sources and modeling techniques.

Section 3: Defining outcomes and measuring impacts

Section 3.1 establishes that the role of impact measurement in the Methodology is to understand and quantify changes in well-being of affected stakeholders that result from an entity's activities. The section proposes that outcomes should be clearly defined as part of the process of measuring impacts. This is an important proposal because it establishes that clearly defining outcomes is the stage in which the scope of an impact is determined. Accordingly, much of the rest of the section is dedicated to the process of identifying and clearly defining outcomes.

Sections 3.2 and 3.3 introduce proposals that pertain to the definition and role of well-being in the Methodology. The definition of well-being is adapted from the Impact Management Platform, both to promote harmonization of impact management resources and because of the absence of a consistent definition in the field of well-being.[2]

Section 3.4 proposes that the OECD Well-being Framework is the default framework to describe dimensions of well-being in the Methodology. The methodological choice for this framework is its relevance in public policy, common reference in the impact management ecosystem, and support by academic research.

Section 3.5 proposes a definition of a well-defined outcome, which is an outcome that identifies the affected stakeholder and the dimensions of well-being that change for that affected

[1] Capitals Coalition. (2016). *Natural Capital Protocol*; Capitals Coalition. (2019). *Social & Human Capital Protocol*; GHG Protocol. (2011). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

[2] OECD. (2013). *OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*.

stakeholder as a result of the entity's activities. This concept builds on the *Standard on applying Principle 2: Understand what changes* of Social Value International.[3]

The section continues by proposing that the qualitative characteristic of relevance should be applied to determine whether a well-defined outcome is material from an impact materiality perspective, and therefore should be included in an entity's impact accounts. Several specific proposals, described in paragraphs 48 and 49, are made for assessing whether an affected stakeholder or a dimension of well-being is relevant.

Section 3.6 proposes that changes in well-being can be measured using either objective or subjective well-being measures, or a combination of the two. Each of the two approaches are described and limitations of each measure are introduced. The distinction used in this section between objective and subjective well-being measures is based on academic research, which considers these measures as the primary approaches for measuring well-being.[4]

Section 3.7 describes considerations for selecting an impact measurement method. The section proposes that the qualitative characteristic of faithful representation should be applied when selecting an impact measurement method to ensure that indicators depict the underlying well-being dimensions in a manner that is complete, neutral, and free from error. Several considerations for applying the qualitative characteristic of faithful representation are described in paragraph 55. The section also proposes that the qualitative characteristics of comparability, verifiability, and understandability may be applied to decide between available well-being measures.

Section 4: Monetary valuation

Section 4.1 starts by describing how monetary valuation is linked to defining and measuring outcomes but is not necessarily the same step in the process of preparing impacts accounts. The section then proposes a definition for a value factor.[5] The definition of value factor comes from the *Value Commission, Draft Transparency Criteria* of the Capitals Coalition. The section then describes how value factors may be presented as either a summary value that collapses the measurement and valuation of an impact into a single value, or as a factor that is separate from the impact measurement step and reflects only the monetary valuation of changes in well-being.

Section 4.2 describes key definitions and concepts that underpin monetary valuation. A foundational idea is the notion that monetary valuation is derived from the preferences of

[3] Social Value International. (2019). *Standard on applying Principle 2: Understand What Changes*.

[4] See, for example, Harvard T.H. Chan. (2017). *Well-Being Measurement.*

[5] Value Commission. (2023). *Value Commission, Draft Transparency Criteria Consultation.* [To be updated upon release of latest Value Commission Transparency Criteria]

individuals, which reveal the relative importance, worth, or usefulness of a topic. Additional concepts that are described include an individual's willingness to pay, or willingness to accept, and how market prices for goods and services relate to an individual's willingness to pay.

Section 4.3 introduces the concept of total economic value, which is adapted from the field of environmental economics, and describes how total economic value is applied in the Methodology. Total economic value refers to the combination of all types of value that people derive from market or non-market goods or services.

Section 4.4 presents valuation techniques that may be used to value the impacts of an entity, including cost-based, market-based, revealed preference, stated preference and subjective well-being valuation approaches. See Figure 6 and section 4.4 for a consideration of the advantages and disadvantages of each technique.

Section 4.5 proposes that a valuation technique for a given impact pathway will be selected that best captures the preferences of affected stakeholders in regard to the impacts they experience, in line with the fundamental qualitative characteristic of faithful representation. It is further proposed that the enhancing qualitative characteristics of comparability, verifiability, and understandability should be considered to ensure that impact information is decision-useful for users of impact information. The section then proposes key considerations to consider when selecting a valuation technique, including the degree to which total economic value is reflected, measurement uncertainty, quality of the proxy, and whether the technique is commonly used and accepted. This principled based approach to determining the appropriate valuation technique for an impact pathway is designed under the recognition that there will need to be flexibility in determining the proper approach for any given topic.

Sections 4.6 and 4.7 provide technical guidance and considerations for value transfer and social discounting, respectively. The section proposes that social discount rates should be consistent and comparable throughout the Methodology and are formally established in Topic and Industry-specific Methodologies.

Request for Public Comment

Instructions to comment

The VTPC invites comment letters on the proposals in this Exposure Draft, particularly on the questions set out below. Feedback from stakeholders will be incorporated impartially. Comments are most helpful if they:

a) address the questions as stated;

b) specify the paragraph(s) to which they relate;

c) contain a clear rationale;

d) identify any wording in the proposals that is ambiguous in its interpretation; and

e) include alternative proposals the VTPC should consider, if applicable.

In providing comments, not all questions need to be addressed. When addressing a question, please provide sufficient detail and context for the comment. Comments should also be included when there is strong support for the proposal in the Exposure Draft. The VTPC is requesting comments only on matters addressed in the General Methodology 2 Exposure Draft.

Please note that comment letters are a matter of public record and will be published on the IFVI website. Comments can be submitted using the General Methodology 2 Public Comment Form. Alternatively, comment letters could be sent to the technical staff via e-mail at research@ifvi.org with "General Methodology 2 Public Comment" in the subject line.

Questions for feedback

Each box contains a series of questions related to a specific topic. For more context on each question, please refer to the corresponding sections of the Exposure Draft mentioned in the boxes below.

Question 1 – Overall Usability of General Methodology 2
1a. As proposed, does the General Methodology 2 statement provide clarity on the development of the impact accounting methodology? Does it provide sufficient flexibility for development of Topic and Industry-specific Methodologies?
1b. Does General Methodology 2 statement sufficiently align with and build on existing frameworks, protocols, and standards? Are there additional ways in which the statement could be revised to clarify or enhance alignment?

Question 2 – The OECD Well-being Framework and its role in the Methodology (section 3.4)

2a. Do you agree that the OECD Well-being Framework should be the default framework in the Methodology for describing well-being dimensions? If not, what other frameworks should be considered and why?

2b. Should the statement clarify any additional points related to how the OECD Well-being framework is applied in the Methodology?

Question 3 – Well-defined outcomes and impact materiality (section 3.5)

3a. Do you agree with the definition of a well-defined outcome? Would you suggest additional requirements for clearly defining an outcome in addition to those in paragraph 45?

3b. Do paragraphs 47, 48, and 49 provide sufficient guidance for determining whether an outcome is material from an impact materiality perspective and therefore should be included in impact accounts?

Question 4 – Value factors in impact accounting (section 4.1)

4a. Does the description of a value factor in paragraph 59 align with your understanding of a value factor? If not, what adjustments would you suggest and why?

4b. Are the two approaches for presenting a value factor described in paragraph 59, specifically the summary value factor approach and the disaggregated approach, clearly written and conceptually understandable?

4c. Do you agree with the approach taken in the Exposure Draft, which disaggregates considerations related to monetary valuation in section 4 from considerations related to defining outcomes and measuring impacts in section 3? Do you anticipate any challenges in developing Topic and Industry-specific Methodologies when adopting this approach?

Question 5 – Considerations for selecting a valuation technique (section 4.5)

5a. Do you agree with the considerations for selecting a valuation technique listed in paragraph 91, why or why not?

5b. Are there any other valuation techniques that should be included?

5c. Should any additional considerations be applied to select a valuation technique?

Question 6 – Additional feedback

6a. Do you disagree or have concerns with any additional proposal(s) in the Exposure Draft? For example, this could include feedback on the framing of the overall purpose and

structure of the statement, references used, and definitions, among other areas. If so, what are they and what do you see as viable alternative approaches?

Due Process Provisions Applicable to the Exposure Draft

The Due Process Protocol of IFVI establishes an independent committee, the Valuation Technical and Practitioner Committee (VTPC), to direct, validate, and approve the impact accounting methodology produced by the partnership between IFVI and VBA. The VTPC oversees and is supported by the work of the technical staff of IFVI and VBA.

Public exposure is a vital step in the Due Process Protocol to ensure the development of high-quality methodologies that reflect stakeholder input. When the VTPC has reached general agreement on a methodology statement, the VTPC votes on whether to proceed with releasing a proposed methodology statement. An approval by a simple majority of the VTPC is required to proceed with releasing an exposure draft of a proposed statement.

The Exposure Draft herein reflects feedback provided by members of the VTPC and is a proposal of a statement that has been approved for public exposure.

After the conclusion of the public comment period, the VTPC reviews the received comment letters. To support the VTPC's considerations, the technical staff will prepare a summary of the comment letters. The summary provides an overview of the significant issues raised in the letters and any additional related research and/or consultations. Comments are published on the IFVI website and significant matters are deliberated at a VTPC meeting

1 Introduction

1.1 Document purpose

1. The purpose of this document is to outline the data requirements and methods that are necessary for the impact measurement and valuation components of the impact accounting methodology being produced by the partnership between IFVI and VBA. This document builds on the concepts, definitions, and principles in *General Methodology 1: Conceptual Framework* for *Impact Accounting* by describing the quantitative tools used to develop impact accounting methodologies and prepare impact accounts. This statement also provides considerations for selecting the most suitable methods for measuring and valuing impacts.

2. In addition to building on frameworks and protocols published by leading organizations in the impact management ecosystem, in particular the *Natural Capital Protocol* and *Social and Human Capital Protocol* of the Capitals Coalition, the Transparent Project, key terms and concepts of the Impact Management Platform, and the Principles of Social Value of Social Value International, and sustainability-related disclosures required by governing jurisdictions and international standard setters, this statement also builds on ISO standards for the valuation of impacts and the OECD Framework for Measuring Well-being. Throughout the Methodology, well-being is understood to mean the well-being of people, or human well-being.[1]

3. The General Methodology is being developed across several interrelated statements and this statement should be read in conjunction with those statements. As part of the General Methodology, the contents of this statement are generalizable across sustainability topics and industries. The General Methodology is designed to inform and explain the development of Topic and Industry-specific Methodologies. No content in the General Methodology overrides guidance in Topic and Industry-specific Methodologies and certain guidance in Topic and Industry-specific methodologies may depart from aspects of the General Methodology.

4. In the absence of published Topic and Industry-specific Methodologies that contain standardized impact pathways, preparers can use the General Methodology to develop impact pathways for additional topics and industries in alignment with the Methodology.[2] If a preparer develops an impact pathway for an as yet undeveloped topic, the assumptions and decisions made during the development process, including data sources, descriptions of the outcomes included in the impact pathway, and the

[1] See the Bibliography for a full list of sources used to develop this statement.

[2] See section 5.5 in IFVI & VBA. (2023). *General Methodology 1: Conceptual Framework for Impact Accounting*.

methods and techniques used to measure and value the impact, should be disclosed to users of impact information.

5. This document is not intended to be exhaustive. As the field of impact accounting develops, the methods that are most appropriate for measuring impacts and valuing them in monetary terms within the specific context of impact accounting will evolve.

1.2 Impact measurement and valuation in the context of impact accounting

6. To prepare impact accounts, a preparer measures and values the impacts of the entity or entities being considered. Impacts are identified by understanding the sustainability context of the activities and business relationships of an entity and through engagement with experts, topic and industry-specific research, and stakeholders.

7. The process to measure and value an impact can be articulated in three steps and builds on the logic of an impact pathway. [3] As shown in Figure 1, the first step relates to the impact drivers stage of the impact pathway, the second step relates to the outcomes and impact stages of the impact pathway, and the third step sits outside of the impact pathway and covers the monetary valuation of impacts. In the Methodology, measurement is distinct from valuation. This statement contains a separate section that provides guidance for each step. The sections are summarized below.

    a) ***Section 2: Data requirements and impact drivers:*** This section describes the data required for the preparation of impact accounts and provides guidance on data sources and modeling techniques that can be used to estimate data when gaps exist.

    b) ***Section 3: Defining outcomes and measuring impacts:*** This section outlines the process for identifying well-defined outcomes and describes the methods that can be used to measure impacts, or changes in well-defined outcomes. This section also lays out the role of well-being in impact accounting.

    c) ***Section 4: Monetary valuation:*** This section describes the conceptual foundations for monetary valuation, including how the preferences of individuals can be interpreted in monetary terms, and provides guidance on the valuation techniques available to value impacts.

[3] See the Stage 3: Measure and Value chapter in Capitals Coalition. (2016). *Natural Capital Protocol* and Capitals Coalition. (2019). *Social and Human Capital Protocol*, which are organized by the following three steps: (i) Measure impact drivers and/or dependencies, (ii) Measure changes in the state of natural capital (or social and human capital), and (iii) value impacts and/or dependencies.

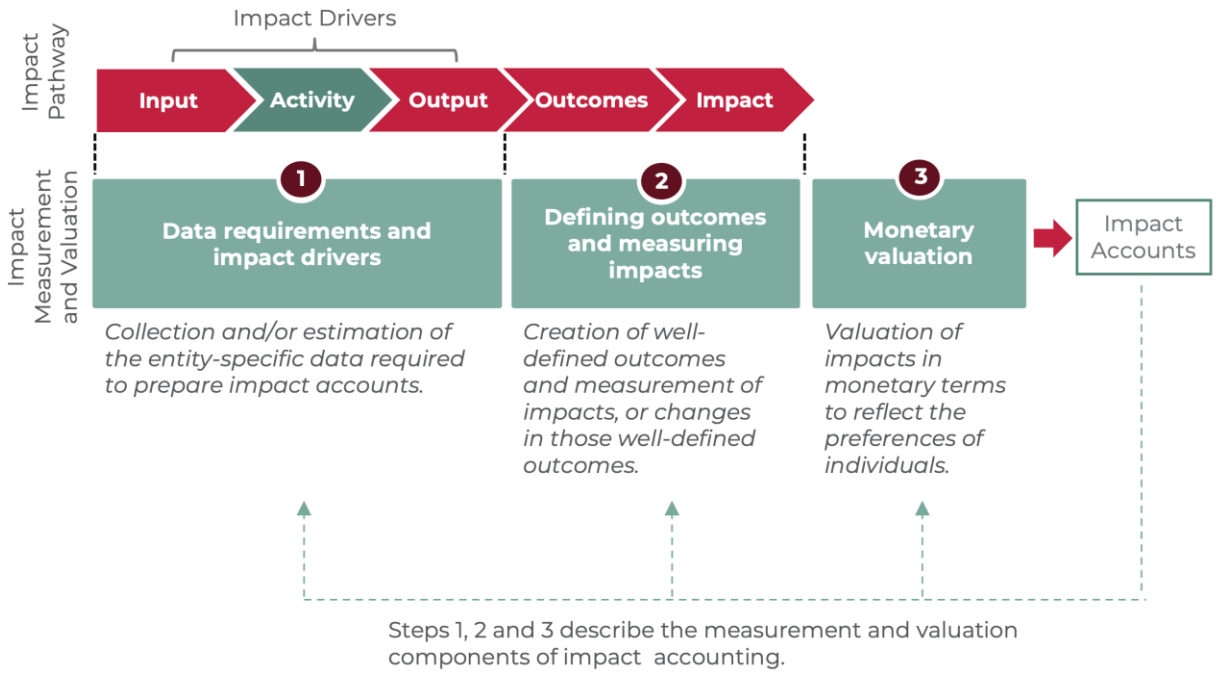

Figure 1. Process to measure and value an impact

8. The three steps to measure and value an impact are interrelated and decisions made in one step may result in limitations in the others. The implications of decisions made in one step on the data requirements and viability of usable methods in other steps are considered throughout the Methodology to ensure observance of the qualitative characteristics of impact information.

2 Data Requirements and Impact Drivers

2.1 Data requirements

9. To prepare impact accounts, data specific to the entity being considered must be collected. Such data establish connections between the entity's activities and the impacts being measured. Impact drivers establish those connections. Impact drivers refer to an entity's inputs and outputs that lead to outcomes and cause or contribute to impacts.[4] Impact drivers are typically input or output related data that are measured by the entity.

10. Impact driver data may be sourced from within the entity or from external sources across the value chain. Accordingly, data collection often requires coordination and engagement across the entity, including with several internal departments, as well as with business partners outside of the entity. While the availability of data is continuously improving, it may not be possible to satisfy all data requirements through data that already exist. When data gaps are present, data may be estimated using modeling techniques.

11. The impact driver data required to prepare impact accounts are specific to each impact pathway and their selection is dependent upon the impact measurement methods and valuation techniques used in later steps. Impact drivers are specified in standardized impact pathways in Topic and Industry-specific Methodologies.

12. Preparers developing impact pathways for as yet undeveloped topics will generally select impact drivers after identifying the sustainability topic and in conjunction with the other steps in the impact measurement and valuation process. When developing an impact pathway, preparers should disclose the sources of impact driver data, including any techniques used to estimate data, and a description of how impact drivers are connected to the impacts being measured.

2.2 Data collection and sources

13. The Methodology seeks to align its data requirements with sustainability-related disclosures required by governing jurisdictions and international standard setters to the greatest extent possible while still generating relevant and faithfully represented impact information. Topic and Industry-specific Methodologies outline the degree of alignment with sustainability-related disclosures and provide additional guidance as necessary.

[4] Adapted from Impact Management Platform. (2023). Key terms and concepts.

14. The data used to quantify impact drivers can be primary or secondary data.[5]

    a) *Primary data*: Data collected by the entity or an external party specifically for the purpose in which it is used. Some primary data sources include:

        i. data collected from customers or suppliers within the value chain, such as through direct measurement, focus groups or surveys;

        ii. internal and/or reported data from accounting information systems, financial and operational data, employee engagement studies, and data from other areas of the entity; and

        iii. physical quantities, including by-products, that are directly measured and result from an entity's activities.

    b) *Secondary data:* Data originally collected and published for a different purpose. Secondary data sources include:

        i. data from audit and certification programs;

        ii. estimated data derived using modeling techniques;

        iii. government or intergovernmental organization statistics or reports;

        iv. industry, trade group, or labor organization data;

        v. past assessments; and

        vi. peer-reviewed and grey literature.

15. To measure impact drivers, primary data is the preferred source within an entity's own operations as well as upstream or downstream in the value chain.[6] Secondary data should be used when primary data is not available or when secondary data is of higher quality than primary data.[7] In practice, a preparer may need to use a combination of primary and secondary data to quantify impact drivers.

2.3 Techniques to estimate data

16. Modeling techniques use primary and/or secondary data to estimate impact drivers for the own operations and value chain of an entity when data gaps exist or data are not of sufficient quality. Common techniques that quantify impact drivers are summarized in Figure 2 and described below.

[5] Adapted from Capitals Coalition. (2016). *Natural Capital Protocol*.

[6] Capitals Coalition. (2016). *Natural Capital Protocol*; Capitals Coalition. (2019). *Social & Human Capital Protocol*; TNFD. (2023). *Guidance on the identification and assessment of nature-related Issues: The TNFD LEAP approach*.

[7] GHG Protocol. (2011). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

Technique	Description
Extrapolated data	- Refers to data that are specific to an activity and are adapted to be more representative of another activity being studied.
Hybrid approaches	- Combine different estimation techniques, mainly LCA and IO modeling, to make use of the strengths of the different approaches.
Input-output models (IO)	- Represents interdependencies between different sectors or economies. - Quantifies impact driver data per monetary unit within tables.
Life cycle assessment (LCA)	- Assesses the environmental or social effects of a good or service through all stages of its life, from material extraction to end-of-life.
Material flow analysis	- Estimates the flows and stocks of materials within a defined system in terms of mass from extraction through processing to disposal. - Can be used to estimate impact driver data based on the flow diagrams.
Productivity modeling	- Analyzes the relationship between inputs and outputs of systems and/or entities by estimating the efficiency in resource use.

Figure 2. Techniques to estimate data (in alphabetical order)

2.3.1 Extrapolated data

17. Extrapolated data refers to data that are specific to an activity and are adapted, scaled up, or customized to be more representative of another activity being studied.[8] If data from an entity's activities are unavailable or impractical to collect, a preparer may extrapolate data from a similar activity. Extrapolated data may require adaptation to ensure relevance for the specific application.

2.3.2 Hybrid approaches

18. Hybrid approaches combine different modeling techniques, mainly life-cycle assessment (LCA) and input-output (IO) modeling, to make use of the strength of the different approaches and to overcome some of their limitations. When combining LCA and IO modeling, the detailed process analysis of LCAs can be merged with the economy-wide scope of IO models.[9]

19. Like other modeling techniques, hybrid approaches may lead to inaccuracies when applied to specific entities. As secondary data sources are derived from industry

[8] GHG Protocol. (2011). *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*.

[9] Reimann et al. (2010). *Evaluation of environmental life cycle approaches for policy and decision making support in micro and macro level applications*. JRC of the EU Commission.

averages, they may fail to capture the distinct circumstances, processes, or technologies employed by an entity, and may require adaptation to ensure relevance for the specific application.

2.3.3 Input-output models[10]

20. An IO model is a quantitative macro-economic model that represents the interdependencies between different sectors of a national economy or different regional economies. In IO models, one unit of demand in one sector and region triggers a demand in other sectors and regions. IO models offer an econometric approach for modeling the full value chain.

21. Different types of IO models exist, including environmentally extended input-output (EEIO) models. EEIOs are based on traditional economic models and integrate satellite accounts that quantify environmental data per monetary unit for each sector and country within IO tables. Other forms of accounts include social data, such as occupational health and safety data or education and training data, that can be integrated into input-output models.[11,12]

22. The results from IO data models reflect sector averages and may require adaptation to ensure relevance for the specific application of an entity. The granularity of information in different IO data models varies with regards geography, industry, and value chain stage.

2.3.4 Life-cycle assessment

23. LCA and social life-cycle assessment (S-LCA) are techniques used to assess the environmental or social effects of a good or service through all stages of its life, from material extraction to end-of-life, including disposal, recycling, and reuse.[13] Different approaches exist, such as, Product and Organizational Environmental Footprint, ReCiPe, and PSILCA.[14]

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[10] Adapted from Capitals Coalition. (2016). *Natural Capital Protocol*.

[11] Adapted VBA. (2021). *Methodology Impact Statement Extended Input-Output Modelling Version 0.1*.

[12] Adapted Scholz, D. R. et al. (2022). *Impact measurement using the Value Balancing Alliance (VBA) method*.

[13] Transparent Project. (2023). *Standardized Natural Capital Management Accounting: A methodology promoting the integration of nature in business decision making*; Capitals Coalition. (2019). *Social & Human Capital Protocol.*

[14] EU Commission – Joint Research Center. (2012). *Organisation Environmental Footprint (OEF) Guide*; EU Commission. (2021). *Understanding Product Environmental Footprint and Organisation Environmental Footprint methods*; Huijbregts et al. (2016). *ReCiPe2016: A harmonized life cycle impact assessment method at midpoint and endpoint level*; GreenDelta. (2023). *PSILCA v. 3.1 - A Product Social Impact Life Cycle Assessment database.*

24. LCA model and database providers have made available a vast array of standard models and data sets, reflecting the conversions of inputs to outputs or outcomes. These standard data sets may help estimate impact drivers associated with a given good, service, or business process.[15]

25. Data sets offered by database providers refer to specific geographic, temporal, and technological conditions. Preparers should consider the suitability of the underlying assumptions before applying data to measure a specific impact driver.[16] LCAs can be time consuming and a limitation is that quantities of inputs, such as raw materials used, are not always available in an entity's information systems.

2.3.5 Material flow analysis[17]

26. Material flow analysis estimates the flows and stocks of materials within a defined system in terms of mass from extraction through processing to disposal. Material flow analysis can be used to estimate outputs based on the underlying modeling techniques and flow diagrams. This technique is focused on outputs related to environmental topics and often builds the foundational data for LCA datasets.

27. Material flow analysis is often complex and requires a large amount of data, which makes it resource intensive to apply. The method typically does not account for the economic or qualitative aspects of material flows, focusing strictly on physical units, which might not be available in internal data systems.

2.3.6 Productivity modeling[18]

28. Productivity modeling refers to methods that analyze the relationship between inputs and outputs of systems or entities by estimating the efficiency in resource use. Productivity modeling can be used to estimate the environmental outputs of production processes, including emissions and waste generation. Results from productivity models may have significant measurement uncertainty as they build on data from industry reports or government statistics. In addition, the results may require adaptation to ensure relevance for the specific application.

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[15] Transparent Project. (2023). *Standardized Natural Capital Management Accounting: A methodology promoting the integration of nature in business decision making*.

[16] Adapted from Capitals Coalition. (2016). *Natural Capital Protocol*.

[17] Ron Basu. (2022). *The Green Six Sigma Handbook: A complete Guide for Lean Six sigma practitioners and managers.*

[18] Adapted from Capitals Coalition. (2016). *Natural Capital Protocol*.

2.4 Considerations for data collection

29. When selecting between data sources or selecting a modeling technique to estimate data, the qualitative characteristic of faithful representation should be applied to ensure that impact drivers are complete, neutral, and free from error.

30. The application of faithful representation is unique to each circumstance. For instance, secondary data that are estimated across the value chain may be more complete than primary data that are collected from business partners but contain gaps. The choice of a data source or modeling technique should not result in emphasizing either positive or negative impacts disproportionately to ensure that impact information is neutral. Data, and in particular estimated data, do not need to be perfectly precise in all respects to be free from error as long as estimates are clearly identified and inputs are reasonable and supportable.

31. Each data source and modeling technique has limitations and varying degrees of suitability. When more than one data source or modeling technique is viable, the enhancing qualitative characteristics of comparability, understandability, and verifiability may be used to decide between the available options. For instance, consideration should be given to the most commonly used and accepted modeling techniques across the value chain to enhance the comparability of impact information. The most commonly applied techniques may also have the highest degree of understandability and verifiability as a result of widespread use. Conversely, in some circumstances novel techniques may provide a more faithful representation. The development of novel modeling techniques is necessary for the advancement of impact accounting.

32. The choice of a data source or modeling technique to estimate data requires trade-offs between the considerations described above, as well as other considerations that may be relevant for specific circumstances. Data sources and modeling techniques shall be specifically established within Topic and Industry-specific Methodologies as appropriate. Preparers developing impact pathways for as yet undeveloped topics in the Methodology should disclose the rationale for the selection of a data source or modeling technique. Preparers may use the same data source or modeling technique over time to enhance the comparability of impact information.

3 Defining Outcomes and Measuring Impacts

3.1 Foundations of impact measurement

33. The objective of impact measurement is to understand what changes in the well-being of an affected stakeholder as a result of an entity's activities. This step is performed in the Methodology by clearly defining outcomes and measuring changes in those outcomes. Whereas an outcome describes a resulting state or condition, an impact refers to the change and evolution in this state or condition as a result of the entity's activities. In other words, impacts measure changes in outcomes.[19]

34. In many instances, preparers of impact accounts do not directly measure outcomes or collect data on well-being. Instead, preparers rely on standardized impact pathways within the Methodology that provide detailed instructions for calculating changes in well-being using the impact driver data of an entity. In developing standardized impact pathways, the Methodology identifies the best available methods for measuring impacts by evaluating peer-reviewed research and assessing the availability of third-party data.

35. The measurement of an impact and its valuation may be collapsed into a single value per unit of an impact driver. For example, the social cost of carbon, which quantifies the impact of greenhouse gas emissions, estimates changes in the condition of the natural environment across time and values those changes in monetary terms. The output of the model is a cost per metric ton of CO_2e emitted by an entity. Throughout the Methodology, when the measurement and valuation stages are collapsed into a single value, descriptions of the underlying components implicit in the value are disclosed.

3.2 The role of well-being in impact accounting

36. Outcomes and impacts are defined by various dimensions of people's well-being and aspects that describe the condition of the natural environment. Due to limitations associated with measuring the intrinsic value of nature, impact in the Methodology is interpreted through the well-being of people. Accordingly, the end-quantity measured through an impact pathway, and by impact accounting, is the well-being of people.

37. Impacts may be classified as affecting either people directly or indirectly through a change in the natural environment. When an outcome affects the condition of the natural environment, linkages should be made to the well-being of people. Impacts

[19] Impacts measure changes against the default reference scenario, which assumes that the entity's activities, and any comparable substitutes, do not exist. For additional description of the default reference scenario, see section 4.6 Reference Scenario in IFVI & VBA. (2023). *General Methodology 1: Conceptual Framework for Impact Accounting.*

affecting the condition of the natural environment are typically identified by describing aspects of nature before drawing connections to the well-being of people. Linkages between the condition of the natural environment and the well-being of people should be based on underlying causal relationships.

38. The methodological choice to interpret impact through the well-being of people does not imply that impacts to the natural environment are only relevant from an impact materiality perspective if they have an immediate effect on actual people. Impacts that affect the condition of the natural environment may exist without any clear impact on the well-being of people in the present, such as environmental impacts in a remote region of the world where the land is not utilized for economic activities.

3.3 The definition of well-being

39. For the purposes of the methodology, well-being is defined as the state of being or doing well in life; happy, healthy, or prosperous condition; moral or physical welfare.[20] The well-being of people is a complex phenomenon and to assess well-being it is useful to use a comprehensive framework that includes a large number of components that shape people's lives.[21]

40. Well-being is distinct from the economic concept of utility, which refers to the value that an individual or group of people derives from a good or service given the constraints, information, and resources available to them.[22] A person's well-being is a dynamic and more encompassing concept than utility and is affected over time by the benefits and/or costs derived from goods and services.

3.4 A framework for well-being

41. While different frameworks to understand the well-being of people exist and will continue to evolve, the framework used to present dimensions of well-being in the Methodology is the OECD Framework for Measuring Well-being. The framework builds on extensive work by the OECD and other international organizations, national governments, and researchers on the measurement of societal progress.[23] The framework also provides useful granularity through its well-being dimensions to

[20] Adapted from Impact Management Platform. (2023). *Key terms and concepts*..

[21] Adapted from OECD. (2013). *How's Life? 2013: Measuring Well-being*.

[22] See page 10 of New Economics Foundation. (2008). *Measuring Well-being in Policy: Issues and Applications*.

[23] OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" Social performance*.

describe outcomes and integrates concepts used in the field of impact management, such as capitals.

42. The OECD well-being framework is composed of 11 dimensions that describe components of current well-being and 4 dimensions that describe the resources that underpin well-being in the future. The second category of dimensions are also referred to as capitals, which are defined as the resources and relationships affected and transformed by an entity.[24,25] By organizing the framework into two distinct categories, the framework considers intertemporal trade-offs of impacts as an integral component of well-being.[26] The dimensions of current well-being and resources for future well-being are referred to collectively as dimensions of well-being in the Methodology. The dimensions are shown in Figure 4 and described individually in Appendix B.

Figure 4. OECD Framework for Measuring Well-being

43. The role of the OECD well-being framework in the Methodology is to help identify and clearly define outcomes. As shown in Figure 5, entities contribute to the well-being of societies by influencing the current well-being of their stakeholders, and through the

[24] Impact Management Platform. (2023). *Key terms and concepts*.

[25] Capitals Coalition. (2016). *Natural Capital Protocol* and Capitals Coalition. (2019). *Social & Human Capital Protocol*.

[26] OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" Social performance*.

creation as well as depletion of capitals.[27] As such, an outcome may relate to one or more dimensions of current well-being and one or more resources for future well-being. The activities of an entity may have an impact on a dimension of current well-being without having an impact on a resource for future well-being, and vice-versa.[28] Impact pathways in Topic and Industry-specific Methodologies shall include descriptions of the well-being dimensions affected by an impact.

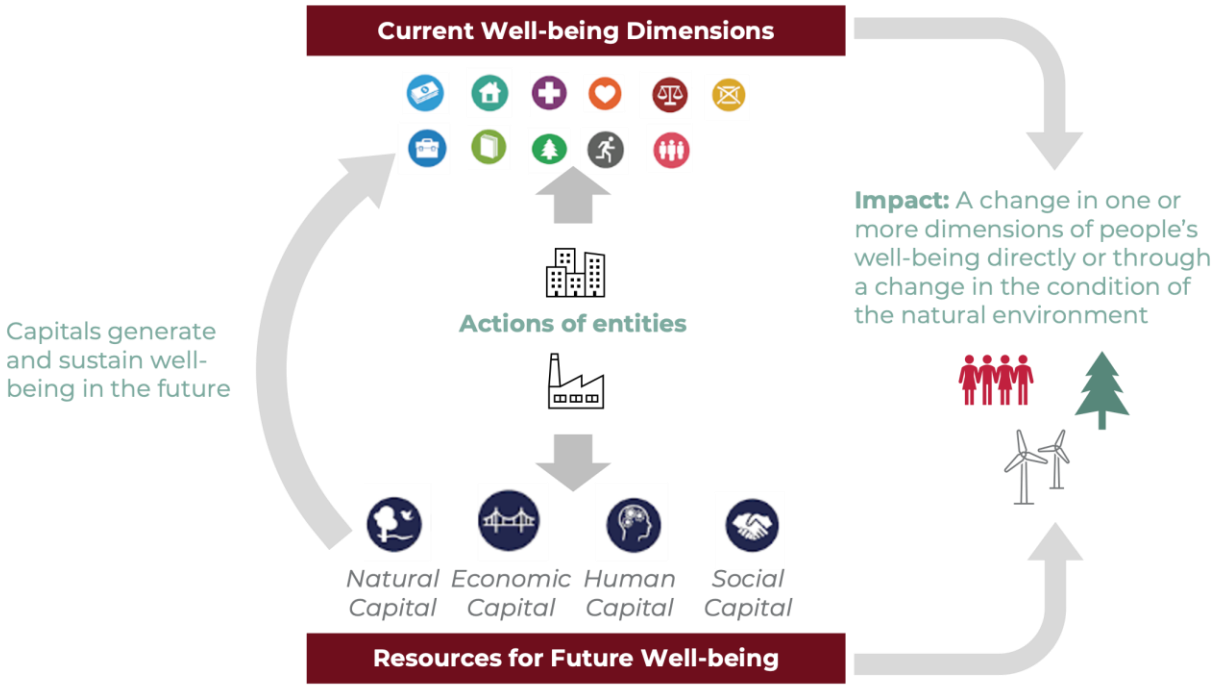


Figure 5. Impacts affect current well-being and resources for future well-being[29]

44. The dimensions in the OECD well-being framework are not necessarily exhaustive and additional components that shape people's lives may be considered in Topic and Industry-specific Methodologies. Each dimension is of equal importance and should be considered when identifying and defining outcomes. Further, the dimensions are interrelated and not necessarily mutually exclusive. Dimensions may have an instrumental relationship to each other, whereby a change in one dimension causes a change in another. For instance, satisfaction of the housing dimension may lead to

[27] OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" Social performance*.

[28] See paragraph 5 in OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" Social performance*.

[29] Figure is adapted from OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" social performance.*

improved health outcomes and higher reported levels of subjective well-being. For that reason, the dimensions should be used to enhance the understandability of impacts as opposed to organize impacts into perfectly discrete categories.

3.5 Well-defined outcomes[30]

45. Impact pathways may contain one or more outcomes related to the sustainability topic covered in a methodological statement. Each outcome in an impact pathway should be well-defined. A *well-defined outcome* identifies the affected stakeholder and the dimensions of well-being that change for that affected stakeholder as a result of the entity's activities. A well-defined outcome also establishes linkages to the well-being of people when the outcome affects the environmental quality dimension of current well-being or the natural capital dimension for future well-being. An outcome may also be defined by human rights. Instances in which an outcome relates to a human right are established in Topic and Industry-specific Methodologies.[31]

46. The process of identifying and defining outcomes is a critical step to ensure a fair presentation. While impact drivers link impacts to an entity and monetary valuation converts impacts into a commensurable monetary unit, it is the process of clearly defining outcomes that sets the scope of an impact. To provide a fair presentation, all material outcomes related to a sustainability topic are included in an impact pathway.

47. To determine whether a well-defined outcome should be included in an impact pathway, a principles-based approach is followed. Specifically, the qualitative characteristic of relevance is used to determine whether an impact, which results from a change in a well-defined outcome, is material from an impact materiality perspective. The following considerations should be applied.

3.5.1 Well-being dimensions

48. When determining whether a dimension of well-being should be included as part of a well-defined outcome, the qualitative characteristic of relevance is applied. In particular, the first perspective of relevance that considers the significance of the impact on affected stakeholders. The significance of an actual impact is based on its severity, while the significance of a potential impact is based on its severity and likelihood. Severity is

[30] This section is adapted from Social Value International. (2019). *Standard on applying Principle 2: Understand What Changes*.

[31] Human rights refer to rights inherent to all human beings, which include, at a minimum, the rights set out in the United Nations (UN) International Bill of Human Rights and the principles concerning fundamental rights set out in the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work.

based on the scale, scope, and irremediable character of an impact.[32] A dimension of well-being is more relevant as the significance of the impact increases.

3.5.2 Affected stakeholders

49. When determining whether a well-defined outcome on an affected stakeholder should be included as part of an impact pathway, the qualitative characteristic of relevance is applied, including the following considerations.[33]

    a) *Degree of separation:* The degree of separation refers to whether the entity through its activities interacts directly with a stakeholder or is indirectly linked to a stakeholder.[34] A greater degree of separation may make an affected stakeholder group less relevant from an impact materiality perspective. For the avoidance of doubt, nature is considered a silent stakeholder in impact accounting.

        i. A greater degree of separation may reduce the capacity of the impact information to influence the decisions of users. Impact information related to a stakeholder that is further removed from the entity is less decision-useful when the entity is unable to influence decisions that lead to different outcomes.

        ii. A greater degree of separation may reduce the need for transparency and accountability towards affected stakeholders.

    b) *Whether the affected stakeholder is society in general:* An affected stakeholder may be an individual, a group of people, or society in general when impacts affect all members of a region or the global community. When society in general is the affected stakeholder, oftentimes impacts can be clearly linked to an entity, such as with impacts related to greenhouse gas emissions, increasing their relevance from an impact materiality perspective. In other scenarios, however,

[32] See paragraph 28 of IFVI and VBA. (2023). *General Methodology 1: Conceptual Framework for Impact Accounting.*

[33] The three perspectives of the qualitative characteristic of relevance include (i) the significance of the impact on affected stakeholders, (ii) the capacity of the impact information to influence the decisions of users, and (iii) the need for transparency and accountability towards affected stakeholders. For additional description, see paragraphs 25 through 30 in IFVI & VBA. (2023). *General Methodology 1: Conceptual Framework for Impact Accounting*.

[34] For an articulation of why a direct business relationship is important for assessing relevance, see page 32 of OECD. (2022). *Measuring the non-financial performance of firms through the lens of the OECD Well-being Framework: A common measurement framework for "Scope 1" Social performance*.

the following factors may reduce the relevance of outcomes that affect society in general.

i. An impact that affects society in general may be caused by a diffuse set of factors, potentially reducing the reliability with which the significance of the impact and its attribution to the entity can be established.

ii. An impact that affects society in general may not hold an expectation for transparency and accountability to affected stakeholders, particularly if the outcomes in question are within the purview of governments or policy-makers.

3.6 Impact measurement methods

50. The process of measurement in the Methodology refers to measuring the extent to which a well-defined outcome has changed against the default reference scenario. Indicators are used to measure outcomes at a point in time. The words indicator and metric are often used interchangeably. Repeated measurement of an indicator makes it possible to determine changes in well-being over time.[35] Measuring changes in well-being can be done through objective and subjective well-being measures.

a) *Objective well-being measures:* Objective well-being measures use indicators that are tangible in nature to measure changes in dimensions of well-being.[36] These measures do not capture the direct experience of individuals affected and therefore serve as proxies for well-being. Objective well-being indicators may be used to measure changes in dimensions of current well-being, except for the subjective well-being dimension, and resources for future well-being.

b) *Subjective well-being measures:* Subjective well-being measures use indicators from self-reported surveys to more directly reflect the experience of the individuals affected. Such evaluations reflect people's own internal judgements of well-being and typically encompass three distinct aspects.[37]

i. Life evaluation: Refers to a reflective assessment on a person's life or some specific aspect of it. The most used measures of life evaluation refer to "life as a whole" or some similar over-arching construct, people

[35] Impact Management Platform. (2023). *Key terms and concepts*.

[36] Adapted from Harvard T.H. Chan. (2017). *Well-Being Measurement*.

[37] OECD. (2013). *OECD Guidelines on Measuring Subjective Well-being*.

may also provide evaluations of particular aspects of their lives such as their health or their job.

ii. Affect: Refers to measures of particular feelings or emotional states, typically measured with reference to a particular point in time. Affect has at least two distinct dimensions: positive affect and negative affect. Positive affect captures positive emotions such as the experience of happiness, joy, and contentment whereas negative affect comprises the experience of unpleasant emotional states such as sadness, anger, fear, and anxiety.

iii. Eudaimonia: Also referred to as psychological flourishing, eudaimonia goes beyond reflective evaluations and emotional states but focuses on a sense of meaning and purpose in life, or good psychological functioning.

51. Objective and subjective well-being measures have limitations that are considered when selecting a measurement method. Objective well-being measures do not reflect the multi-faceted nature of well-being and may require multiple indicators to capture the dimensions affected by an impact. Further, when objective well-being measures are aggregated across dimensions, the potential for double counting arises because objective well-being indicators are not perfectly discrete. Objective well-being measures also do not reflect the direct experience of affected stakeholders.

52. Subjective well-being measures have limitations that reveal the degree of sensitivity of self-reported surveys; however, extensive evidence over the last two decades supports the validity of subjective well-being measures. The OECD provides recommendations and guidelines, such as large data samples and consistent survey design for self-reported measures, that may improve the reliability of subjective well-being indicators. Limitations to consider include the following.[38]

a) Retrospective recall processes may interfere with people's long term evaluative judgements on their well-being. When people recall experiences in retrospect, they may display peak end effects, whereby their evaluation is based largely on the most intense and the last emotion experienced.

b) Self-reports can be influenced by momentary moods and one-off circumstances at the time of the survey, such as the weather and day-to-day events that may influence the comparability of impact information.

[38] OECD. (2013). *OECD Guidelines on Measuring Subjective Well-being*.

c) The meaning of well-being may vary due to cultural, demographic, and linguistic differences amongst people, leading to variations in response styles when answering subjective well-being questions. Such variations in response styles may skew responses and make it difficult to distinguish genuine subjective well-being from interpretation of scale use or biases of the different groups.

3.7 Considerations for selecting an impact measurement method

53. The measurement of changes in well-defined outcomes is complex and will vary by topic. The change in an outcome can be measured either using only one of the two impact measurement methods outlined above or by using a combination of the two methods. The two methods may be complimentary, with each assessing different aspects of well-being. The OECD recommends that well-being be measured through objective and subjective measures, stating that a number of dimensions of well-being are inherently subjective.[39] The use of a single method may also be fit for purpose and provide a faithful representation of an impact.

54. Indicators are selected that serve as a reasonable interpretation of the underlying dimensions of well-being. The qualitative characteristic of faithful representation is applied to ensure that the indicators selected depict the underlying well-being dimensions in a manner that is complete, neutral, and free from error.

55. The application of faithful representation is unique to each circumstance. For instance, when multiple dimensions of well-being are affected, subjective well-being measures may provide a more complete measurement of an impact by capturing the combined effect of all the different changes in life circumstances.[40] The use of objective indicators may allow for the inclusion of a wider range of positive and negative impacts, helping to ensure that impact information is neutral. The measurement of changes in well-being do not need to be perfectly precise to be free from error, allowing for higher levels of measurement uncertainty in situations in which combining well-being indicators provides for more complete impact information.

56. When more than one method is being considered, the enhancing qualitative characteristics of comparability, verifiability, and understandability may be used to decide between available options. For instance, consideration should be given to indicators that are most commonly used to reflect a dimension of well-being in order to enhance the comparability of impact information. Conversely, in some circumstances

[39] OECD. (2022). *Measuring the Non-financial Performance of Firms through the Lens of the OECD Well-being Framework: A Common Measurement Framework for "Scope 1" Social Performance.*

[40] OECD. (2013). *OECD Guidelines on Measuring Subjective Well-being*.

novel techniques may provide a more faithful representation. The development of novel measurement methods is necessary for the advancement of impact accounting.

57. The choice of an impact measurement method requires trade-offs between the considerations described above, as well as other considerations that may be relevant for specific circumstances. Impact measurement methods shall be specifically established within Topic and Industry-specific Methodologies. Preparers developing impact pathways for as yet undeveloped topics in the Methodology should disclose the rationale of the selection of an impact measurement method.

4 Monetary Valuation

4.1 Monetary valuation in impact accounting

58. The result of the impact measurement process in the prior section is to calculate changes in the well-being of people affected by an entity's activities. The role of monetary valuation is to translate those changes in well-being into monetary terms to reflect the value of the impact to affected stakeholders.

59. The valuation of an impact is performed with a value factor. A value factor translates the information that an entity collects across its operations into insights on the relative importance, worth, or usefulness of an impact.[41] A value factor may collapse the measurement and valuation of an impact into a summary value that is multiplied by an impact driver. The social cost of carbon is an example of this type of value factor. This section describes value factors that translate changes in well-being into monetary terms, taking a disaggregated approach to impact measurement and valuation whereby valuation is a separate process from measuring impacts.

60. The goal of this section is to enhance the comparability and transparency of valuation approaches by outlining various techniques and how they are applied in the Methodology.

4.2 Foundations of monetary valuation

61. Monetary valuation, both in monetary or other terms, is inherently complex and requires the establishment of assumptions and the use of proxies. Accordingly, there is not one single approach to valuation; instead, there are numerous approaches and techniques that can be used depending on the use case and availability of data.

62. A common foundation for valuation is the notion that the preferences of individuals reveal the relative importance, worth, or usefulness of a topic. Monetary valuation in impact accounting uses the preferences of individuals or groups to value changes in well-being and create consistent and comparable evaluations of relative importance. Monetary values are not meant to reflect the inherent value a dimension of well-being but instead a representation of the preferences of individuals at a point in time.

63. Preferences are expressed through an individual's willingness to pay (WTP) for a good or service, or to avoid an undesirable outcome. Willingness to pay refers to the maximum amount of money an individual is prepared to pay. Preferences are also revealed

[41] Value Commission. (2023). *Value Commission, Draft Transparency Criteria Consultation.* [To be updated upon release of latest Value Commission Transparency Criteria]

through an individual's willingness to accept (WTA) to forgo a desirable outcome, or tolerate an undesirable outcome. An individual's willingness to accept refers to the minimum amount of money an individual is prepared to accept.[42]

64. Asking an individual their willingness to pay or willingness to accept should result in the same monetary valuation for identical underlying outcomes; however, in practice the two often diverge.[43] In this statement, willingness to pay is used as the default to describe an expression of preferences; however, it is intended that a willingness to accept approach could be used interchangeably.

65. The preferences of individuals serve as the foundation of a market based economy. Market prices for goods and services are an empirical starting point for those preferences. In many applications of impact accounting, indicators used to measure dimensions of well-being are not obviously relatable to any market good or service. In such scenarios, a valuation technique is required that estimates the value of a non-market good or service. Several techniques exist for performing monetary valuation for non-market goods and services, including techniques that rely on directly asking individuals about their preferences and techniques that use statistical methods to infer people's preferences.

66. If a change in well-being is measured using an indicator that relates directly to a market good or service, that does not necessarily mean that a market price is the best available valuation technique, as markets are not always sufficient measures of changes in well-being. Conversely, if a change in well-being is related to a non-market good or service, using the market price of a good or service that serves as a proxy to represent the underlying change in well-being may be the best available valuation method.

[42] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

[43] See page 3 of ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

Box 1. Valuation of impacts related to human health or human rights

Impacts related to human health or human rights violations have significant societal implications and capturing these impacts is crucial for a comprehensive assessment of the societal value created or eroded by an entity's activities and business relationships.

The Methodology converts these impacts into monetary values. This does not mean that it aims to determine a price for human health or human rights. Life and human rights are invaluable and cannot be traded like market goods. People cannot sell a year of their life or any of their human rights to someone else. Monetary valuation acknowledges that individuals can purchase life-protecting goods that enhance life expectancy or reduce health risks. Similarly, people can indicate how much they are willing to pay to avoid certain health risks. The valuation of these sensitive topics is built on extensive research in fields such as environmental and health economics and is frequently used in policy-making.

Incorporating the monetary valuation of impacts related to human health or human rights necessitates considering the perspectives of the affected stakeholders. This approach aligns with the guidance of international organizations on monetary valuation and builds on the *General Methodology 1: Conceptual Framework for Impact Accounting.*

4.3 Total economic value

67. The concept of total economic value is adapted from the field of environmental economics, in which it is applied to disaggregate the total economic value of environmental goods into three categories: use value, option value, and non-use value.[44] See Appendix C for descriptions of use value, option value, and non-use value. In the Methodology, total economic value refers to the combination of all types of value that people derive from not only environmental goods but also market and non-market goods or services. The extent to which a value factor captures total economic value varies depending on the valuation technique used.

68. Theoretically, an individual's willingness to pay measures their total economic value related to a market or non-market good. Willingness to pay varies across individuals in a population based on their preferences and income. In a perfect data environment, the willingness to pay for each individual would be assessed and added together to capture total economic value of a change in well-being for an affected stakeholder group. In practice, the mean willingness to pay of the affected stakeholder group or underlying population is oftentimes the best available measure to use.[45]

[44] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

[45] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

69. Willingness to pay is a different concept from the market price for a traded good or service. The market price equals the willingness to pay of only the marginal consumer and is lower than the willingness to pay of all non-marginal consumers. Said differently, a market price does not account for some of the economic value experienced by affected stakeholders, specifically the difference between their willingness to pay and the market price they pay, known as consumer surplus.[46]

70. Selecting and evaluating a valuation technique for a particular impact involves consideration of two different perspectives related to total economic value.

    a) The first perspective applies when a well-being indicator is related to a good or service and considers the extent to which all of the use and non-use values of that good or service are captured. This perspective recognizes that individuals place value on a good independent of its actual or future use cases.[47]

    b) The second perspective is the extent to which the willingness to pay for each individual in an affected stakeholder population is captured. This perspective ensures that when market prices are used as value factors, any differences between willingness to pay and the market price are included, to the extent feasible. This perspective also ensures that when economic value varies across an affected stakeholder population, careful consideration is taken to capture the varying degrees of economic value.

71. To ensure a fair presentation, a value factor should capture enough of the economic value to provide a faithful representation, but it does not have to capture total economic value. In some instances, it is not feasible to ascribe a monetary value to every aspect of a change in well-being.[48]

4.4 Valuation techniques[49]

72. Several techniques exist to value the impacts of an entity, which reflect the last step of an impact pathway. Each technique has advantages and disadvantages for providing a faithful representation of the preferences of affected stakeholders. The approaches that

[46] OECD. (2013). *OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*.

[47] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

[48] Adapted from Capitals Coalition. (2019). *Social & Human Capital Protocol*.

[49] The valuation techniques are adopted from Capitals Coalition. (2016). *Natural Capital Protocol*; Capitals Coalition. (2019). *Social & Human Capital Protocol;* and ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

are most commonly applied in impact accounting are summarized in Figure 6 and described below. The following is not intended to be exhaustive.

Technique	Description	Advantages and Disadvantages
Cost-based	Uses the cost of compensating for damages, the cost of restoring a negative impact, or the cost paid to mitigate a risk to value an impact.	**Advantage:** - Uses observable costs rather than hypothetical scenarios - Less resource and time intensive **Disadvantage:** - Provides a lower bound estimate of TEV - Value factors may be context specific
Market-based	Uses observed market price of a good, service, or asset to value an impact.	**Advantage:** - Highly observable and reflects actual decisions - Less resource and time intensive **Disadvantage:** - Reflects WTP of only the marginal consumer - May not faithfully represent WTP due to market distortions
Revealed preference	Examines existing markets to reveal preferences for non-existing markets. Some approaches include hedonic pricing and travel-cost method.	**Advantage:** - Values non-market goods/services by observing actual behavior and purchases - Measures WTP and captures TEV **Disadvantage:** - Data required may not be readily available - Several assumptions are necessary - Captures use and non-use values, but they cannot be disaggregated
Stated preference	Asks individuals to state their preferences using questionaries that create hypothetical markets. Some approaches include contingent valuation and choice experiment.	**Advantage:** - Captures use and non-use values, which can be disaggregated or aggregated - Measures WTP and captures TEV **Disadvantage:** - Results are subject to several response biases
Subjective well-being valuation	Estimates the monetary value of non-market goods or services based on people's self-reported well-being.	**Advantage:** - Based on actual and not hypothetical experiences - Not subject to the biases present in revealed and stated preference techniques - Measures WTP and captures TEV **Disadvantage:** - Relatively new technique and less is known - Challenges in isolating the effect of income or non-market goods/services on subjective well-being

Figure 6. Valuation techniques (in alphabetical order)

4.4.1 Cost-based approaches

73. Cost-based techniques use the cost of compensating an individual or group of individuals for damages, the cost of restoring a negative impact to its previous condition, or the cost paid to mitigate a risk to value an impact.

74. The advantages of cost-based approaches are that they do not rely on hypothetical scenarios but instead use data from the entity, public sources, or observable

compensation or repair costs. Cost-based approaches may also be less resource and time intensive.

75. The main disadvantage of cost-based approaches is that they provide a lower bound estimate of total economic value. Certain cost-based approaches may also generate value factors that are context specific, reducing their applicability to a wide range of scenarios; however, context specificity may be advantageous if the study addresses the particular parameters of the impact being valued.

4.4.2 Market-based approaches

76. Market-based techniques use the observed market price of a good, service, or asset to value an impact. Market-based approaches are most applicable when the underlying well-being indicator is directly related to a market good, service, or asset. When the underlying well-being indicator is not directly related to a market good, service, or asset a market price may be used as a proxy. A proxy should provide a reasonable interpretation of the well-being dimensions being measured.

77. The advantages of market-based approaches are that they reflect the behavior of actual individuals, are highly observable, and may be less resource and time intensive to apply.

78. A disadvantage of market-based approaches is that they reflect the willingness to pay of only the marginal consumer and provide only a lower bound estimate of economic value. Further, in many instances, market prices may not faithfully represent the willingness to pay of the marginal consumer due to distortions caused by externalities, imperfect information, imperfectly competitive markets, taxes, and/or subsidies.[50] When distortions are quantifiable, market prices may be adjusted to better express the economic value of an impact.

4.4.3 Revealed preference techniques

79. Revealed preference techniques examine the way in which people reveal their preferences for a good or service in existing markets as surrogates for non-existing markets. These techniques estimate the value of non-market goods or services by observing value differentials and how people behave when they make real-world choices. The value factors are typically derived using econometric analysis and large data sets.

80. Several revealed preference approaches exist, including:

[50] OECD. (2013). *Framework for Statistics on the Distribution of Household Income, Consumption, and Wealth.*

a) *Hedonic pricing method:* Analyzes price differentials between otherwise identical goods or services to isolate the value of non-market aspects. For example, a price differential between otherwise identical houses may be isolated to value aspects such as pollution, noise, crime, or education facilities. Wage differentials in a labor market may be isolated to value risks to human health, such as morbidity and mortality.

b) *Travel-cost method:* Estimates the value of recreational or leisure sites, such as rivers, parks or forests, by considering factors that affect the individual's cost of visiting and traveling. Typically, data is collected over an extended time period to account for seasonality effects, and socioeconomic data is collected to control for factors like age, gender, education and family status.

81. An advantage of revealed preference techniques is that the value of non-market goods and services can be imputed by observing behavior and purchases, avoiding the need to use a representative good or service as a proxy. This allows a value factor to be based on actual decisions that reflect the well-being dimensions being measured. Revealed preference techniques also measure the willingness to pay of individuals, meaning that total economic value is captured.

82. The disadvantages of revealed preference techniques are that the data required may not be readily available and several assumptions are necessary to produce reliable estimates. Another disadvantage is that revealed preference methods capture use and non-use values, but the two cannot be disaggregated.[51]

4.4.4 Stated preference techniques

83. Stated preference techniques ask individuals directly to state their preferences using questionaries that create hypothetical markets in which respondents trade off specific impacts and money. The questionnaires estimate the willingness to pay or willingness to accept for a defined outcome.

84. Several stated preference approaches exist, including:

a) *Contingent valuation:* Presents individuals with a detailed hypothetical scenario in which they are purchasing or foregoing a good or service. Contingent valuation questionnaires typically include questions about demographics, socioeconomic characteristics, and the reason behind a respondent's decision.

[51] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

b) *Choice experiment*: Values specific attributes of a good or service by asking individuals to make a series of choices between two hypothetical goods or services. Each good or service is described in detail, and certain characteristics of the good or service vary among the options, including the price to be paid or the amount of money offered. This enables a statistical analysis that can value each of the individual characteristics of the good or service.

85. The advantages of stated preference techniques are that they can capture use and non-use values together or separately. Stated preference methods are the only valuation technique that can disaggregate between use and non-use value. Stated preference techniques also measure the willingness to pay of an individual, meaning that total economic value is captured.

86. The main disadvantages of stated preference approaches are that the results are subject to several response biases. Further, in responding to stated preference questionnaires, it may be challenging for respondents to truly weigh the alternative choices given to them in the time available.

4.4.5 Subjective well-being valuation techniques[52]

87. Subjective well-being valuation techniques estimate the monetary value of non-market goods or services based on people's self-reported well-being. These techniques take a non-market good or service of interest, such as environmental quality, and calculate the change in income that would produce a subjective well-being impact of equivalent size. The value factors derived using these techniques can be interpreted as the amount of money that would be required to keep subjective well-being constant in absence of the non-market good or service for impacts that provide positive well-being.[53]

88. The advantages of subjective well-being valuation techniques are that they are based on actual and not hypothetical experiences, do not require assumptions about rationality regarding individual's preferences, and are not subject to the same types of biases affecting revealed and stated preference techniques.[54] The technique also measures the willingness to pay of an individual, meaning that total economic value is captured.

[52] Subjective well-being valuation has been a more recently developed valuation technique, and in some resources has been considered a sub-category of other approaches. It is presented here as a separate technique in alignment with OECD. (2018). *Cost-Benefit Analysis and the Environment* and HM Treasury, Department for Work and Pensions. (2011). *Valuation Techniques for Social Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-Being Approaches.*

[53] OECD. (2018). *Cost-Benefit Analysis and the Environment, Future Developments and Policy Use.*

[54] OECD. (2018). *Cost-Benefit Analysis and the Environment, Future Developments and Policy Use.*

89. The main disadvantage of subjective well-being valuation techniques is that they are relatively new and less is known about them. Challenges may arise in isolating the effect of income or the effect of non-market goods and services on subjective well-being.[55] While the technique can in theory capture non-use values, identifying behaviors or experiences that reflect non-use values can also be difficult.[56]

4.5 Considerations for selecting a valuation technique

90. A valuation technique for a given impact pathway is selected that best captures the preferences of affected stakeholders in regard to the impacts they experience, in line with the fundamental qualitative characteristic of faithful representation. The enhancing qualitative characteristics of comparability, verifiability, and understandability are also considered to ensure that impact information is decision-useful for users of impact information.

91. In practice, the following list outlines key considerations related to the qualitative characteristics when applied to select an appropriate valuation technique. The choice of a valuation technique requires trade-offs between these criteria.

    a) *Total economic value*: A value factor should capture as much of the economic value an affected stakeholder places on an impact as possible. A value factor is more complete when it reflects more of the willingness to pay of an individual and, when the underlying well-being indicator is related to a good or service, more of the use and non-use values. When value factors reflect the economic value, impact accounts prepared using those value factors are more likely to provide for a comprehensive assessment, enhancing the comparability of impact information between entities.

    b) *Certainty:* A value factor should reflect the preferences of individuals with the greatest degree of certainty possible. A value factor is more certain when measurement uncertainty is lower. Measurement uncertainty arises from using estimation techniques and refers to the degree of variation between the estimated and actual underlying valuation of an impact. The certainty of a value factor is enhanced when the preferences of individuals are directly observable. Market prices are observable and provide a high degree of certainty when they are drawn from well-functioning markets. Revealed preference techniques use observable inputs to impute value factors based on actual behaviors and purchases, but they introduce uncertainty as several assumptions are required to

[55] HM Treasury. (2011). *Valuation Techniques for Social Cost-Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-Being Approaches.*

[56] OECD. (2018). *Cost-Benefit Analysis and the Environment, Future Developments and Policy Use.*

produce reliable results. Stated preference techniques are not based on observable preferences and introduce uncertainty as a result of cognitive biases. Certainty is typically enhanced when the valuation is based on context-specific and localized studies.[57]

c) *Quality of proxy:* A value factor should serve as a reasonable interpretation of preferences. This criterion is most applicable when a market-based or cost-based approach is used and a proxy good or service serves to interpret an impact. A proxy should have face validity and provide a substantive interpretation of the underlying dimensions of well-being.[58] A high quality proxy enhances the faithful representation of an impact, increasing the likelihood that an impact is complete and free from error, and improves the understandability of impact information.

d) *Commonly used and accepted:* All other things being equal, a valuation technique should be selected that is consistent with relevant industry-practice and the latest academic research, and is commonly used to value impacts across topics in order to enhance the comparability and understandability of impact information. Conversely, in some circumstances novel techniques may provide a more faithful representation. The development of novel valuation techniques is necessary for the advancement of impact accounting.

92. The choice of a valuation technique requires trade-offs between the considerations described above, as well as other considerations that may be relevant for specific circumstances. Valuation techniques are specifically established within Topic and Industry-specific Methodologies. Preparers developing impact pathways for as yet undeveloped topics in the Methodology should disclose the rationale of the selection of a valuation technique.

4.6 Value transfer and currency adjustments

93. Value transfer, also known as benefit transfer, refers to the process of using a measure of economic value from an existing study and applying it in a different context, making adjustments when appropriate for spatial, temporal and other contextual differences. Transfer functions can be developed to transfer the values in a study in a defined location and context to other locations and contexts while controlling for relevant variables.

94. Spatial value transfer applies when an economic value from a specific country, region, socioeconomic group, or demographic group is adjusted for applicability in other

[57] Localized value factors through value transfer do not necessarily lead to improved certainty.

[58] Adopted from OECD. (2011). *How's Life?: Measuring Well-being*.

contexts. When adjusting for geographical differences, national-level and, in some cases, subnational-level adjustments are possible. It is important to adjust for physical and environmental conditions in various locations. When adjusting an economic value to other countries, a control for the income level or inequality may be included.

95. Temporal transfer requires the consideration of two types of time-related value conversion:

    a) *Value over time:* Valuation may change over time as outcomes and preferences related to those outcomes change. If marginal cost increases over time, valuation factors will increase over time. For example, an additional unit of GHG emissions causes more damage the higher the accumulated level of emissions already in the environment. When valuations for different years are provided, the year closest to the timeframe should be used.

    b) *Price over time:* Due to price inflation, the real value of nominal valuation coefficients changes over time. Valuation factors should be expressed in the base price year when preparing impact accounts.

96. The studies used to develop value factors are in a variety of currencies and may need to be converted to another currency to prepare impact accounts. Consistent data sources should be used for exchange rates. Exchanges rates and their sources should be disclosed to users of impact information.

4.7 Social discounting[59]

97. Impact accounting depicts impacts in the period in which the related activities of the entity occur, even when those impacts materialized in a prior period or may materialize in a future period. When impacts materialize in a period other than that for which impact accounts are being prepared, they should be converted into present value using a social discount rate.

98. A social discount rate measures the rate of change over time of costs and benefits to society. The social discount rate is embedded in the economic theory of how to measure intertemporal trade-offs and is used to analyze individual's preference for optimizing between savings today and consumption in the future. The social discount rate answers the question at what rate should society be compensated for giving up a unit of well-being today and realizing it in the future.

[59] The concepts in this section are adopted from OECD. (2018). *Cost-Benefit Analysis and the Environment: Further Developments and Policy Use Subjective well-being valuation*.

99. The predominant approach to determining the social discount rate is known as the Ramsey Rule and is defined below.

$$\text{Social discount rate} = \delta + \eta \times g$$

In this approach, the δ value is commonly interpreted as the pure rate of time preference and a higher value reflects a stronger preference for well-being today than in the future. The η value describes the relationship between consumption and utility, or for the purposes of impact accounting consumption and well-being, specifically the degree to which the value of an additional unit of well-being changes as consumption increases. When η is multiplied by the growth rate of consumption g, the combined value represents a wealth effect, whereby as wealth increases, individuals value consumption in the future less.

100. When preparing impact accounts, the Ramsey Rule is used to determine a social discount rate to convert impacts into present value. In the Methodology, social discount rates aim to be consistent and comparable but are formally established in individual Topic and Industry-specific Methodologies. The social discount rates applied in the Methodology may be adjusted over time. If the social discount rate varies for a particular sustainability topic, a rationale shall be provided in the Topic or Industry-specific statement.

101. When determining a discount rate, it is important to consider that intra-generational time horizons should set δ at a non-trivial amount in excess of zero as individuals demonstrate a stronger preference for consumption in the present than in the future. When impacts materialize over inter-generational time horizons, δ should be set at zero to avoid the assumption that the well-being of the present generation is more valuable than well-being of future generations.

102. At the current state of development, the Methodology does not consider additional variables in the social discount rate for the uncertainty of payoffs or uncertainty in the growth rate of consumption. Those topics may be explored as future areas of development.

Appendix A: Glossary

Term	Definition	Source [60]
Activities	Everything that an entity does, including operations, the procurement of inputs, the sale and provision of products and/or services, as well as any supporting activities. Activities span a large number of different actions that altogether contribute to outputs and ultimately, outcomes and impact.	Impact Management Platform
Affected stakeholders	Affected stakeholders are individuals or groups whose well-being is affected or could be affected, positively or negatively, by the entity's activities and its business relationships across its value chain.	N/A
Business relationships	The relationships the entity has with business partners, entities in its value chain, and any other non-State or State entity directly linked to its business operations, products or services. Business relationships are not limited to direct contractual relationships. They include indirect business relationships in the entity's value chain beyond the first tier, and shareholding positions in joint ventures or investments.	European Sustainability Reporting Standards
Capitals	The resources and relationships affected and transformed by an entity.	Impact Management Platform
Comprehensive assessment	A comprehensive assessment evaluates the societal value created and/or eroded as a result of the entity's activities and business relationships across its value chain	N/A
Direct impact	An impact caused or contributed to by the entity's own operations.	N/A

[60] Some definitions are adapted from the original source.

Impact	A change in one or more dimensions of people's well-being directly or through a change in the condition of the natural environment.	Impact Management Platform
Impact accounting	A system for measuring and valuing the impacts of corporate entities and generating impact information to inform decisions related to an entity's effects on sustainability.	N/A
Impact accounts	A set of accounts that contain the material positive and negative impacts of an entity valued in monetary terms.	N/A
Impact drivers	Refer to the sequence of an entity's inputs and outputs that lead to outcomes and cause or contribute to impacts.	Impact Management Platform
Impact information	Impact information is derived from impact accounts and informs decision-making related to an entity's effects on sustainability. Impact information includes, but is not limited to, impacts that have been classified and aggregated for the purpose of presentation, supplemental notes that describe the assumptions, data, or methods used to measure and value impacts, and qualitative commentary that contextualizes impacts.	N/A
Impact pathway	The series of consecutive, causal relationships, ultimately starting at an input for an entity's activities and linking its actions with related changes in people's well-being.	ISO
Indicator	Indicators are used to measure the state of something at a point in time. The words indicator and metric are often used interchangeably. Repeated measurement of an indicator makes it possible to determine changes in well-being over time.	Impact Management Platform
Indirect impact	An impact directly linked to the entity's own operations, products, or services	N/A

	through its business relationships in the upstream and/or downstream value chain.	
Input	The resources and business relationships that the entity draws upon for its activities.	Impact Management Platform
Outcome	The level of well-being experienced by people or condition of the natural environment that results from the actions of the entity, as well as from external factors. Outcomes are used to describe the one or more dimensions of people's well-being that are affected by an input, activity, and/or output.	Impact Management Platform
Output	The direct result of an entity's activities, including an entity's products, services, and any by-products.	Impact Management Platform
Primary data	Data collected by the entity or an externally contracted party specifically for the purpose in which it is used.	N/A
Reference scenario	The set of activities and related outcomes that is assumed to happen in the absence of the entity's activities.	Impact Economy Foundation
Secondary data	Data originally collected and published for a different purpose.	N/A
Social discount rate	A social discount rate measures the rate of change over time of costs and benefits to society. The social discount rate is embedded in the economic theory of how to measure intertemporal trade-offs and is used to analyze individual's preference for optimizing between savings today and consumption in the future.	N/A
Stakeholder	Stakeholders are defined as those who can affect or be affected by the entity.	European Sustainability Reporting Standards
Sustainability topic	A term used broadly to denote aspects of stakeholder well-being (e.g. health, wealth, safety), or business activities or practices that are evidenced drivers of well-being	Impact Management Platform

	(e.g. employment, diversity and inclusion). This term is synonymous with 'sustainability matters', 'impact areas', or 'general issue categories' which are similar terms used by different standard setters.	
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.	Report of the World Commission on Environment and Development
Total economic value	Total economic value (TEV) refers to the combination of all types of value that people derive from market or non-market goods or services.	N/A
Value chain	The value chain of an entity is the full range of activities and business relationships related to the entity's business model(s) and the external environment in which it operates. A value chain encompasses the activities and business relationships the entity uses and relies on to create its products or services from conception to delivery, consumption, and end-of-life.	European Sustainability Reporting Standards
Value factor	A value factor translates the information that an entity collects across its operations into insights on the relative importance, worth, or usefulness of an impact.	Value Commission
Well-being	Well-being can be defined as the state of being or doing well in life; happy, healthy, or prosperous condition; moral or physical welfare.	Impact Management Platform
Well-defined outcome	A well-defined outcome identifies the affected stakeholder and the dimensions of well-being that change for that affected stakeholder as a result of the entity's activities.	Social Value International
Willingness to accept	The minimum amount of money that an individual is willing to accept to forgo a desirable outcome or tolerate an undesirable outcome.	ISO 14008

Willingness to pay	The maximum amount of money that an individual is willing to pay for a good or service or to avoid an undesirable outcome.	ISO 14008

Appendix B: Well-being Dimensions in the OECD Framework[61]

B1. The OECD Framework for Measuring Well-being is composed of 11 dimensions that describe components of current well-being related to how people experience their lives here and now and 4 dimensions that describe the resources needed to sustain well-being in the future. The dimensions are described and shown in the figure below.

B2. *Income and wealth:* Together income and wealth indicate what households have available to spend and inform about material conditions. Wealth meanwhile provides a buffer that can help to smooth consumption and enable longer-term investments, such as in housing. Economic insecurity is broadly related to the concept of income and wealth. It is important to consider the distribution of income and wealth to provide a full picture of a household's economic situation. For example, households that own much wealth but are income poor have more possibilities than their income alone would suggest, and vice versa.

B3. *Work and job quality:* Work refers to productive activity, whether paid or unpaid, and job quality is about both material and non-material aspects of people's working conditions. Material aspects of working conditions include issues such as remuneration, the availability of jobs, and the risk of job loss. Non-material aspects relate to the quality of the working environment, the content of their job, how well this matches their skills and abilities, the autonomy afforded, their learning opportunities, working time arrangements, and relationships with co-workers.

[61] Adapted from OECD. (2020). *How's Life? 2020: Measuring Well-being*.

B4. *Housing:* Housing provides shelter, safety, privacy and personal space. The area where people live also determines their access to many different services. An ideal set of measures for housing conditions would provide information on the quality of housing, on aspects of housing affordability, and on the amenities and characteristics of neighborhoods.

B5. *Health:* Health is about being and feeling well, a long life unencumbered by physical or mental illness, and the ability to participate in activities that people value. Health refers to information about good health states alongside the most important diseases and conditions causing poor health, disability or death, including their prevalence, chronicity and intensity. Capturing both physical and mental aspects of health outcomes is vital.

B6. *Knowledge and skills:* Knowledge and skills are about what people know and can do. Literacy and numeracy are foundational skills that enable full participation in daily activities such as work and leisure, but other skills such as science and digital skills are increasingly becoming a basic requirement for inclusion in economic and social activities. Beyond these core building blocks, the range of knowledge and skills that can contribute to well-being is wide, from job-specific skills to parenting. Non-cognitive abilities, such as social and emotional skills, including resourcefulness, perseverance, adaptability and team-working, can also be considered as essential competencies.

B7. *Environmental quality:* Environmental quality affects human health through the quality of air, water and soil, which is related to the presence and density of hazardous substances. Environmental quality also matters intrinsically to people who value natural beauty and the amenities that affect their life choices. Finally, people benefit from environmental services and assets. For example, access to green space is associated with numerous health and well-being benefits, including psychological relaxation, stress reduction, enhanced physical activity, the mitigation of exposure to air pollution, excessive heat and noise, improved social capital and pro-environmental behaviors.

B8. *Subjective well-being:* Subjective well-being is about good mental states, and how people experience their lives. Subjective well-being emphasizes three distinct elements: life evaluations, affect, and eudaimonia. See section [X.X] in this statement for additional information.

B9. *Safety:* Safety is about freedom from harm, whether that harm comes in the form of crime, conflict, violence, terrorism, oppression, accidents or natural disasters. An ideal set of safety indicators would inform about the various crimes and offenses experienced by individuals, including crimes against property, contact crimes, and non-conventional crimes, including hate crimes, emotional abuse, corruption, money-laundering, and terrorism. Cybercrime and incidents of privacy breaches and consumer fraud online present new forms of criminal activities associated with the digital transformation.

Other threats to people's safety include traffic accidents, natural disasters and conflicts such as wars. People's freedom to express personal, political and social objectives without fear is another element of personal safety.

B10. *Work-life balance:* Work-life balance is about being able to combine family commitments, leisure, and work. The scope of this dimension includes aspects such as the quantity of time devoted to leisure and personal care as well as people's satisfaction with their time use, and *some sense of the balance between both paid and unpaid work. Time use that is negatively associated with well-being, such as time spent commuting, also belongs in the scope, as this constrains time available for other activities. This dimension overlaps with aspects of job quality included in work and job quality dimensions.*

B11. *Social connections: Social Connections refer to the quantity of social interactions, including frequency and amount of t*ime individuals spend with household members, family, friends, colleagues, and other known persons, satisfaction with social interactions and perceived loneliness, and the support, including emotional and financial, provided by these connections. Measuring both the quantity and quality of social connections is particularly relevant, as the two do not necessarily capture the same phenomena: spending a considerable amount of time interacting with people does not necessarily prevent loneliness or a lack of support.

B12. *Civic engagement:* Civic engagement is about whether people can and do take part in a range of important civic activities that enable them to shape the society they live in. Civic engagement addresses whether individuals have opportunities to engage; whether they perceive that they have the skills, ability and other resources needed to engage; whether they actually take up and realize the opportunities that they have; and whether doing so makes a difference in practice. People's political rights and preferences, such as through voter turnout, and their perceived empowerment in this process, are relevant considerations.

B13. *Economic capital:* Economic capital consists of produced and financial capital. Produced capital refers to man-made tangible assets such as roads, railways, buildings and machinery; intellectual property such as R&D expenditure, computer software and art works; and inventories of final and intermediate goods. Financial capital includes financial assets such as currency and deposits, equity, securities and derivatives, and liabilities in the form of loans and debt securities. Economic capital plays a crucial role in supporting material living standards, such as housing, jobs, wealth and incomes, and in producing goods and services that people consume in pursuit of their well-being today and in the future.

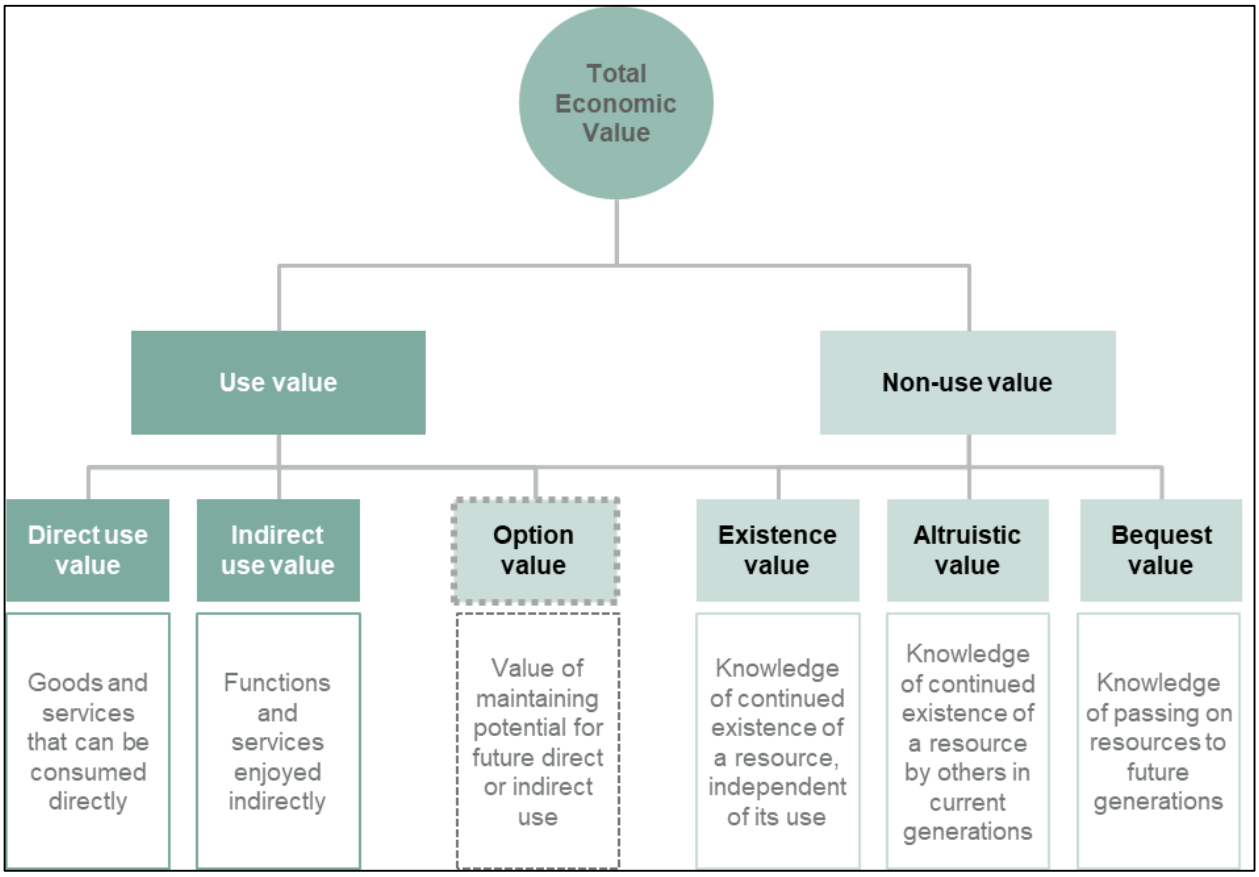
B14. *Natural capital:* Natural capital consists of naturally occurring assets and ecosystems, from tradable items such as minerals and timber through to oceans and the atmosphere. The scope of natural capital is vast, and includes land, soil resources, water resources, mineral and energy resources, aspects of ecosystems and biodiversity.

B15. *Human capital:* Human capital broadly refers to the skills, competencies, including education and tacit knowledge, and health status of individuals. Many researchers and institutions are currently using definitions of human capital that emphasize its value to economic production and income generation, particularly regarding the importance of the quality of labor. Beyond technical skills, the concept of human capital has since been expanded to include aspects of motivation and behavior, as well as the physical, emotional and mental health of individuals. Both health and education are also outcomes of intrinsic value in their own right, as well as contributing extensively to the production of other well-being outcomes.

B16. *Social capital:* Social capital is about a society's networks, norms and shared values that foster co-operation among different groups. Information on expectations of other people and public institutions, i.e., trust, engagement in activities that contribute to civic and community life, and aspects of governance and the institutional arrangements that set the framework conditions for generating social capital, including government stakeholder engagement, integrity, and gender equality in decision-making.

Appendix C: Total Economic Value Framework[62]

C1. The Total Economic Value (TEV) framework is used in environmental economics to describe the types of value attached to environmental goods. The framework disaggregates value into three categories: use value, option value, and non-use value. This framework can be adapted to impact accounting to categorize the types of economic value contained in a good or service.



[62] ISO. (2019). *ISO 14008:2019 Monetary valuation of environmental impacts and related environmental aspects*.

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