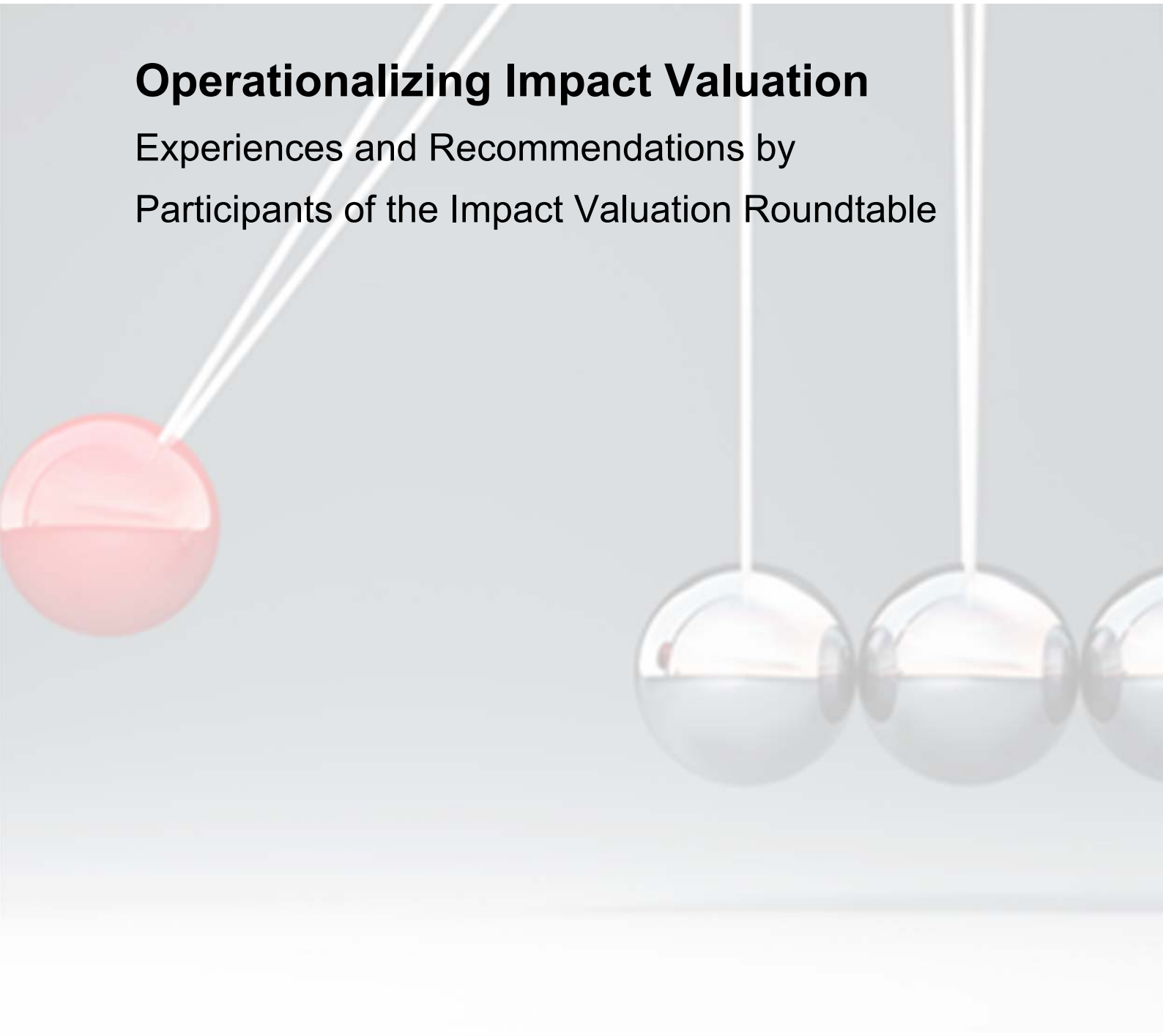


WHITE PAPER

Operationalizing Impact Valuation

Experiences and Recommendations by
Participants of the Impact Valuation Roundtable



March 2017

ABOUT THE IMPACT VALUATION ROUNDTABLE

Founded in 2015, the Impact Valuation Roundtable (IVR) is an informal group of over a dozen international companies who wish to develop and operationalize the emerging field of Impact Valuation. Impact Valuation can be defined as the application of welfare economics to determine the positive and negative value contribution of business activities to society in monetary terms. The IVR participants are at different stages of piloting, implementing, and communicating their efforts on Impact Valuation and are using the techniques at different levels within their organizations such as at corporate, country, project or product levels.

The IVR focuses its work on the operationalization of the respective frameworks and standards, which have been published or are under development such as the Natural and Social Capital Protocols or the ISO 14007 and 14008 standards. The participants wish to share their best practices and learnings on Impact Valuation with the objectives of: facilitating the uptake and implementation of the available concepts; identifying benefits and limitations of the techniques; and achieving an increasing alignment of valuation techniques and data sources used.

The IVR participants consider an Impact Valuation assessment as the best approach to measure and value the effects of business activities on the health and well-being of people and the planet – in economic, environmental and social dimensions. By taking a macro-societal perspective on the business contribution to society, we believe that Impact Valuation can support large and small companies alike to ensure long-term, successful and sustainable value creation for all stakeholders by more comprehensive reporting, integrated thinking, better risk assessment, and strategic decision making. Impact Valuation can also support companies in their contribution to international objectives and frameworks such as the United Nation's Sustainable Development Goals.

For the purposes of an Impact Valuation assessment we have started with the premise that a monetary valuation approach is possible. However, we are aware of other concepts to assess companies' impacts and we have highlighted certain areas where there could be limitations of monetary valuation. We have set out to demystify Impact Valuation wherever possible.

We invite companies to participate in the IVR and stakeholders to join our journey to further elaborate, align, and utilize the potential of this new way of thinking.

ABOUT THIS DOCUMENT

This White Paper is the first product of the IVR, which met several times in 2016 and 2017 to discuss practical ways to operationalize Impact Valuation for business application. It reflects common areas such as data, methods, and sources for valuation, covered by IVR participants across industries. We believe that establishing this common list will facilitate communication and reporting for all involved in this new area. It is not a request to start publishing Impact Valuation assessments.

The IVR participants recognize that communicating and integrated reporting of business impacts on society (often called externalities) is not an end in itself but should be the means to assist companies in decision making to prioritize projects, better assess risks, and drive actions to reach corporate objectives. This White Paper provides first insights into Impact Valuation and covers the current status from a perspective of communication and integrated reporting. In order to embed this approach in a more systematic way and for it to provide useful information on business strategies and models, performance and prospects, Impact Valuation needs to become comprehensive, transparent and explicit.

The White Paper has been designed to build upon and complement the Natural and Social Capital Protocols and ISO processes. This White Paper does not create any new standard nor is it a comprehensive best practice guide how Impact Valuation should be implemented and used within companies. For reasons of simplicity and practicability, this White Paper does not address aspects such as business dependencies on, or interdependencies of, economic, social, and environmental dimensions or capitals. It is considered to be applicable across industry sectors.

The following companies and their representatives have participated in the process:

- adidas AG (Marina Schurr)
- Allianz Global Corporate & Specialty (Michael Bruch, Christopher Bonnet)
- BASF (Dirk Voeste, Christian Heller)
- DSM (Jacobine Das Gupta)
- Dutch Development Bank (Mikkel Kallesoe)
- Kering Group (Michael Beutler, Baptiste Cassan-Barnel)
- LafargeHolcim (Pier Mario Gribaudo)
- Nestlé (Duncan Pollard)
- Novartis (Malcolm Cheetham, Sonja Haut)
- Olam International (Chris Brown, Christopher Stewart, Ravi Abeywardana)
- Philip Morris International (Huub Savelkous, Trevor McGaughey)
- SAP (Will Ritzrau, Thomas Birnmeyer)
- Syngenta (Marina Prada)

DISCLAIMER

The content presented here reflects the consensus from the companies' representatives that participated in the process, but it may not necessarily reflect the views, policies or commitments of the individual companies.

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1. IMPACT VALUATION IN CONTEXT

Our businesses strive to be sustainable and thereby support the implementation of the United Nation's Sustainable Development Goals (SDGs). Impact Valuation is a new, innovative concept to identify, understand, improve, and demonstrate the benefits and costs of business to society – such as the social cost of carbon. For this purpose, it is proposed, as far as possible, that the impacts or external effects of business activities on the life and well-being of people are measured and valued in monetary terms. By nature, these economic, social, and environmental impacts are positive or negative, e.g. contributions to a country's GDP, employment, or emissions to the environment.

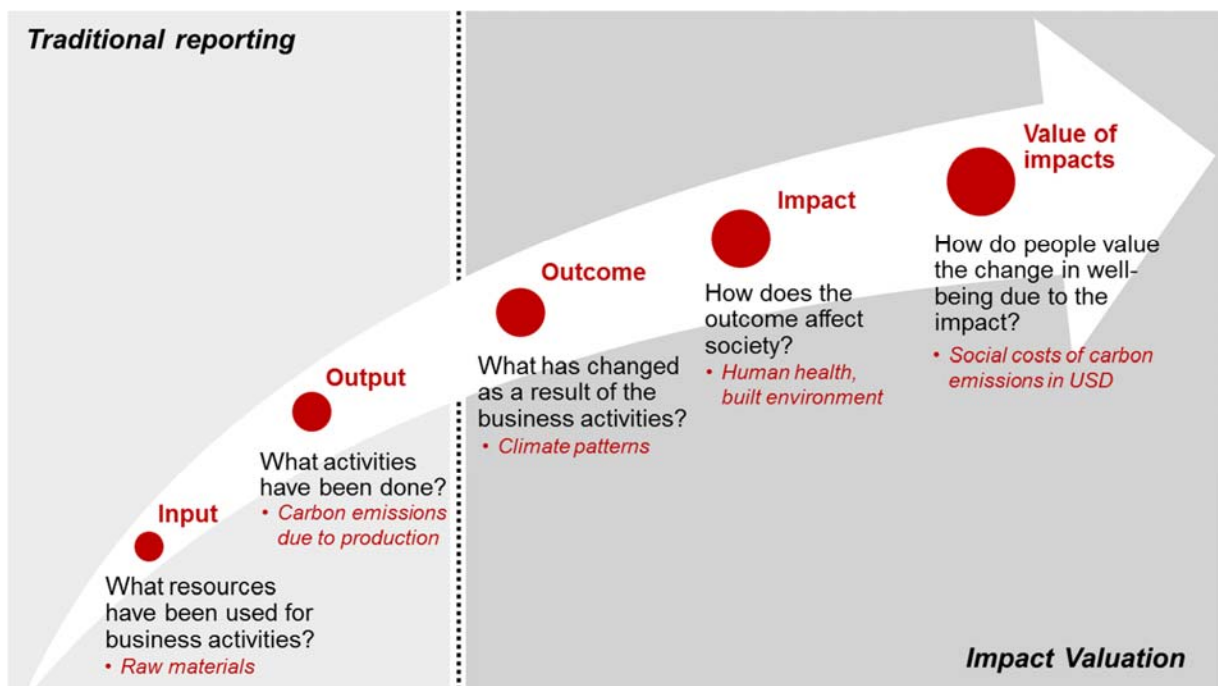


Diagram 1: The new aspects of Impact Valuation: From traditional reporting to impact valuation.

Impact Valuation has recently gained momentum:

- Frameworks and standards are being developed such as the Natural and Social Capital Protocols and ISO 14007 and 14008, and
- There is increasing interest of stakeholders such as the financial sector, rating agencies, reporting bodies, civil society, and public authorities.

The IVR participants are piloting and selectively applying Impact Valuation for various purposes at corporate, country, project, or product levels. The potential uses range from communications via strategy and operational decision making to target setting and steering actions – each requiring a different scope (value chain, impact categories coverage) and data accuracy.

As of today, we recognize that comparability of the communication of the results of Impact Valuation assessments across companies and sectors is one of the key challenges to the credibility and uptake of the concept. Therefore, this White Paper primarily focuses on steps to facilitate the communication and integrated reporting in accordance with the metrics of impact valuation concepts. The approach we set out can provide insights into our business activities, models and strategies, and the extent to which they are contributing to the SDGs (see Annex 1).

As IVR participants we recommend appropriate measurement and valuation methods and databases (see Annex 2), following the principles of materiality, simplicity and practicability, transferability and scalability, objective of assessment, as well as consistency with (emerging) frameworks and standards (see Annex 3). As a cross-sectoral initiative, this White Paper outlines a minimum set of common denominators. At an individual sector level the opportunity exists to further refine this approach by:

- Developing sector specific impact categories and the scope of value chain steps
- Focusing on the different purposes of impact measurement
- Developing and harmonizing coefficients for monetary valuation

2. SCOPE OF CALCULATIONS

Value chain

For communication and reporting purposes we recommend to cover at a minimum own controlled operations (as defined for financial reporting purposes), and direct suppliers.

Although we propose as a minimum scope of assessment just own controlled operations and direct suppliers, the potential broadest scope of the calculation may include the entire value chain from cradle to grave. This is because all business activities have an impact on society. These include purchasing, producing and providing goods and services, as well as the use and disposal of products. Especially the use of products and services create benefits and costs for society. However, the existing data and methods set boundaries for the complete assessment of a company's product portfolio.

Impact categories

For communication and reporting purposes within the boundaries of own controlled operations and direct suppliers we recommend covering at least:

- *Economic dimension: Contribution to gross domestic product (GDP), especially profits, taxes, and wages*

- *Social dimension: health and safety, training*
- *Environmental dimension: consumptive water use, water pollution, climate change/GHGs, air emissions, land use, and waste.*

These impact categories reflect the current cross-industry common denominator of the IVR participating companies. The economic, social, and environmental impacts of business activities in society can be quite different from sector to sector and between companies due to their different market environment, business model, position in the value chain, and different products and services. Therefore, every company should define their own valuation needs based on the relevant scope including value chain coverage and impact categories. This is where sector based processes could provide more detailed guidance.

With the objective to operationalize impact measurement and valuation, companies should be guided by materiality, feasibility, availability, and reliability of data and methods when defining and disclosing the scope of their assessments. The aim should be for a consistent application of scope throughout all impact categories. In case this is not possible or reasonable (e.g. due to substantially different value chains), the exceptions should be disclosed and explained.

We recommend assessing the material economic, social, and environmental impacts of a company as a whole. Assessing and optimizing impact categories separately might lead to unbalanced and therefore unsustainable decisions and actions.

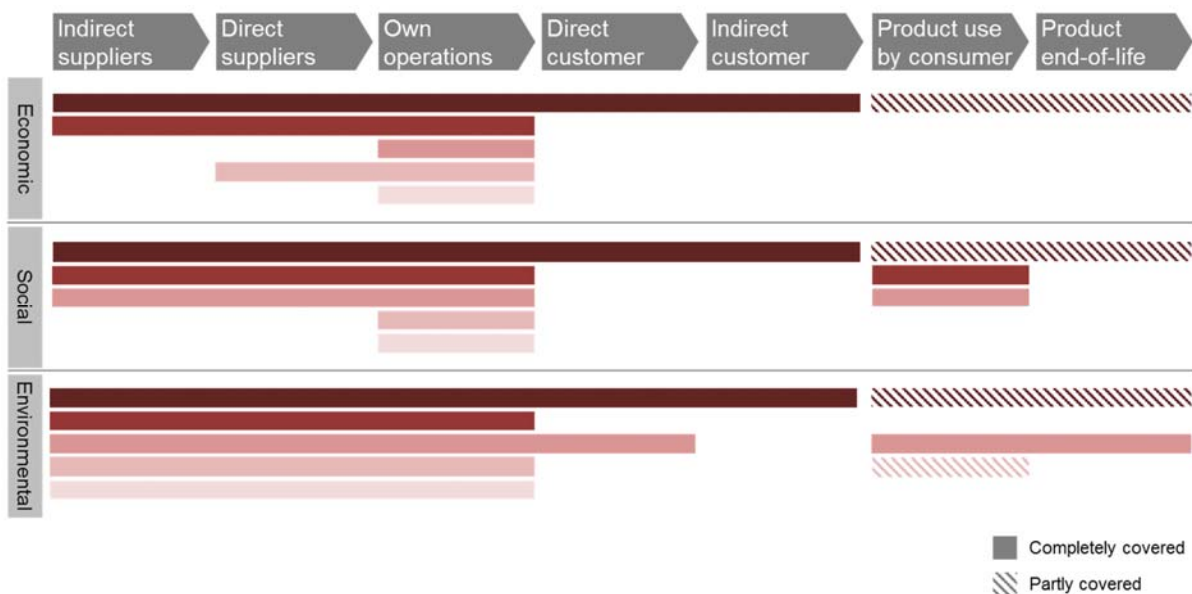


Diagram 2: Different scopes of Impact Valuation along a simplified value chain and generic impact categories, applied by five selected IVR participants (represented by different colors). For reasons of comparability, the availability of data and methods to enable a higher consistency is desired.

3. MEASUREMENT

Generally, data used for impact measurement are available from two sources:

- *High-quality primary data for operations under a company's own control*
- *Publicly available secondary data and/or primary data for direct suppliers*

Primary data enables a more specific assessment of corporate impacts in society. We recommend being transparent on the applied data and measurement techniques per impact category.

Different measurement techniques can be applied to assess the positive and negative effects on society (externalities). The data sources can be either primary data (e.g. life-cycle assessments by the company) or secondary data (e.g. input-output tables, scientific studies, sector level data).

The impact on society should be calculated as comprehensively and specifically as possible. However, as data sources and especially measurement techniques, are currently in the early stages of development, any measurement is still likely to be an estimation of a range rather than a precise point figure. As companies use different sets of data and methods, today's results are not yet likely to be directly comparable. For reasons of consistency and comparability, an alignment over time is desirable.

4. VALUATION

For communication and reporting purposes we recommend being transparent on the applied valuation coefficients including the use of country or locally specific coefficients.

Measuring and valuing economic, social, and environmental impacts in monetary terms enables an enhanced understanding of the materiality, relevance and interdependencies of companies' positive and negative impacts. It allows an engagement with a broader cross-section of company management. This is an essential step to informed management and decision making to improve companies' value contributions to society.

We are aware of the ethical concerns related to assigning a monetary value to certain impacts such as health and safety as well as the challenges to define an appropriate value for certain categories such as biodiversity. However, as IVR participants we are convinced that if appropriately used, such valuations support our companies to ensure long-term, successful value creation for all our stakeholders and will support the fulfillment of the SDGs.

The value contributions to society of all the positive and negative external effects of a business's activities should be considered and can be estimated by multiplying the measurements defined above by valuation coefficients. Existing market prices usually do

not fully reflect these externalities. Therefore, the use of benefits and costs to society are recommended as valuation coefficients. However, for some applications and audiences other pricing concepts, such as abatement costs, may be appropriate (see Annex 4).

We recommend that the valuation coefficients that a company uses should be made publicly available, and should come preferably from independent third party sources such as UN agencies, OECD, or scientific studies. For some impact categories globally consistent valuation coefficient can be applied (e.g. GHGs), other indicators should be valued with national or locally specific coefficients (e.g. water consumption). To support the discourse around valuation, the logic for choosing a particular coefficient should be documented, explained and disclosed.

We consider that assessments based on the above outlined principles will lead to a range of results that are directionally correct. Based on our experiences we consider the results will be sufficiently sound for communication and reporting purposes and robust enough for decision making and taking action.

5. THE WAY AHEAD

As leading companies and participants of the IVR we are convinced that Impact Valuation will support our companies to ensure long-term, successful and sustainable value creation for all our stakeholders. With this White Paper we are aiming to provide a business voice in the current movement of impact measurement and valuation. We will continue to share our learnings on the feasibility, benefits, and the practical limitations of Impact Valuation.

As a next step, the IVR will make efforts to improve the maturity, quality, reliability, consistency, and comparability of measurement and valuation techniques. An initial calculation performed by a sample of IVR participants has demonstrated that our currently used approaches are leading to different results across the companies. This is due to three aspects: methods applied for the measurement of impacts, the scope and coverage of sub-indicators within impact categories, as well as a significant difference in the valuation coefficients (e.g. the social cost of carbon ranges from approximately USD 30 to in excess of USD 140 per metric ton of CO₂e). We will also address in future methodological aspects, e.g. baselines to use and sequence of events.

With this in mind, we will continue our engagement with stakeholders – in a supportive and critical way – in the development of simplification, standardization, operationalization, and alignment of Impact Valuation methods and valuation coefficients.

ANNEX 1: COVERAGE OF SDGs IN WHITE PAPER

Dimension	Impact Categories	Direct Contribution	Consequence of Action or Potential Contribution
Economic	GDP Contribution		
Social	Health & Safety		
	Training		
Environmental	Consumptive Water Use		
	Water Pollution		
	Climate Change		
	Air Emissions		
	Land Use (biodiversity)		
	Waste		

Diagram 3: Coverage of the United Nation’s Sustainable Development Goals in the White Paper.

ANNEX 2: DATA AND METHODS APPLIED FOR MEASUREMENT AND VALUATION

In general two main concepts for impact measurement are applied – hybrid approaches are applied as well:

- a. **Bottom-up:** Collecting primary data on economic, social, and environmental impacts and aggregating the respective impacts to a total figure.
- b. **Top-down:** Using secondary industry data and allocating a share of total supplier / customer industry and consumer impacts to the company based on input-output models. Input-output models need to be extended to social and environmental indicators and in certain cases adjusted for company needs.

The intended objective of the impact assessment as well as data and method availability will determine the approach taken. For example, decision making usually requires a high data accuracy and method robustness.

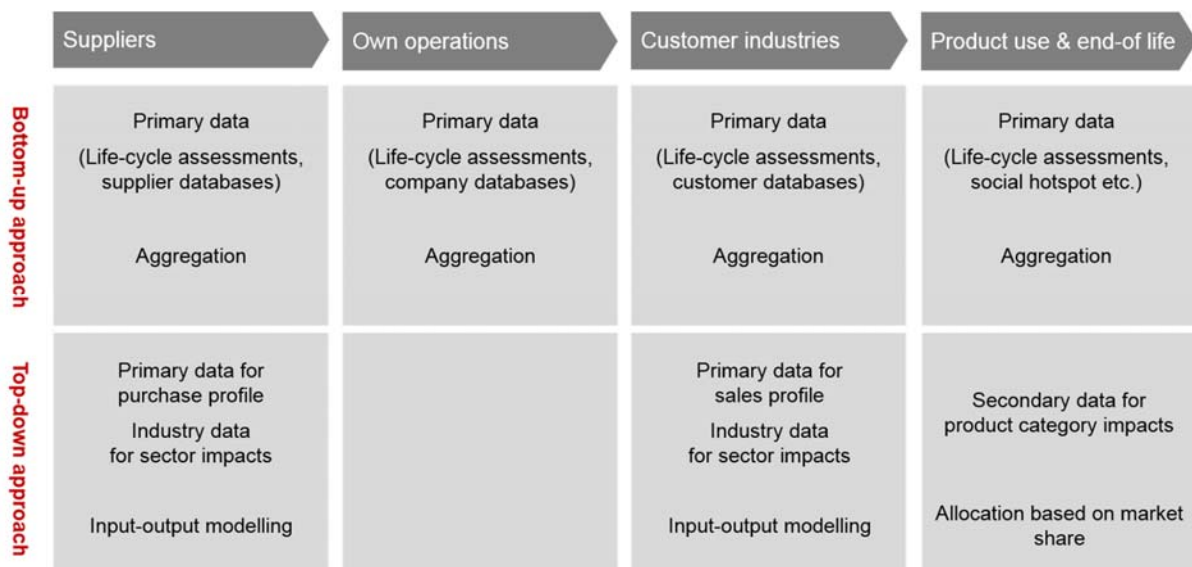


Diagram 4: General data sources and measurement methods applied by IVR participants.

For the measurement and valuation of impacts the following drivers and data sources are currently used by IVR companies. The tables below provide an overview of approaches used by the IVR companies. It is important to note that individual companies may not apply all approaches simultaneously. For simplicity, the indicators shown are applied discretely without considering any interdependencies. The IVR will make efforts

to create transparency and further explain and align data sources, methods, and valuation coefficients.

Economic dimension

GDP contribution			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Net income ▪ Amortization & depreciation ▪ Interest ▪ Salaries ▪ Own employment ▪ Taxes (direct income tax, indirect taxes & duties) 	<ul style="list-style-type: none"> ▪ Gross-value added (representing GDP contribution) ▪ Spillover indirect employment 	<ul style="list-style-type: none"> ▪ Reduction in economic inequalities of countries and of their populations ▪ Purchasing power 	<ul style="list-style-type: none"> ▪ Own financial data ▪ World Bank purchasing power parity conversion factors ▪ National statistics input-output tables ▪ Third party data on country taxation rates (e.g. World Bank)

Social dimension

Health & safety			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Health & safety incidents 	<ul style="list-style-type: none"> ▪ Fatalities ▪ Lost time injuries ▪ Permanent injuries and illnesses 	<ul style="list-style-type: none"> ▪ Human health ▪ Disruption of economic processes ▪ Costs for health-care system ▪ Reduced economic output 	<ul style="list-style-type: none"> ▪ OECD ▪ DALY/QALY (in combination with Value of Statistical Life) ▪ Safe Work Australia 2008

Training			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Skills ▪ Capabilities 	<ul style="list-style-type: none"> ▪ Improved human capital 	<ul style="list-style-type: none"> ▪ Increased employability ▪ Increased purchasing power ▪ Increased profits 	<ul style="list-style-type: none"> ▪ Wage increase directly linked to training (e.g. increased salary due to higher education level or new job)

Environmental dimension

Consumptive water use			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Consumptive water use 	<ul style="list-style-type: none"> ▪ Stock of ground water ▪ Water availability for different uses / groups ▪ Costs of supply 	<ul style="list-style-type: none"> ▪ Human right to water ▪ Water for functioning ecosystems ▪ Malnutrition ▪ Water borne diseases ▪ Resource costs ▪ Subsidy costs of water ▪ Economic opportunity costs 	<ul style="list-style-type: none"> ▪ Water stress level

Water pollution			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Nitrogen ▪ Phosphate ▪ Heavy metals ▪ Organic & inorganic compounds leading to <ul style="list-style-type: none"> ▪ Eutrophication ▪ Eco-toxicity ▪ Acidification 	<ul style="list-style-type: none"> ▪ Contaminated potable water ▪ Contaminated plants ▪ Algae growth 	<ul style="list-style-type: none"> ▪ Human health ▪ Recreation ▪ Property values ▪ Fish stocks ▪ Water borne diseases ▪ Malnutrition ▪ Human Right to Water ▪ Functioning ecosystems 	<ul style="list-style-type: none"> ▪ CE Delft University ▪ DALY/QALY (in combination with Value of Statistical Life)

Climate change / GHGs			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ CO₂ ▪ CH₂ ▪ N₂O ▪ HFCs ▪ PCFs ▪ SF₆ 	<ul style="list-style-type: none"> ▪ Climate patterns ▪ Sea level ▪ Extreme weather events ▪ Mean temperatures 	<ul style="list-style-type: none"> ▪ Human health ▪ Built environment ▪ Economic disruption ▪ Agriculture ▪ Desertification 	<ul style="list-style-type: none"> ▪ IPCC ▪ Stern ▪ Tol

Air emissions			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ SO₂ ▪ PM2.5, PM10 ▪ NH₃ ▪ NO_x ▪ VOCs ▪ Heavy metals 	<ul style="list-style-type: none"> ▪ Concentration of SO₂, PM, O₃ 	<ul style="list-style-type: none"> ▪ Human health ▪ Visibility ▪ Agriculture 	<ul style="list-style-type: none"> ▪ TEEB ▪ CE Delft University ▪ DALY/QALY (in combination with Value of Statistical Life) ▪ EU Environmental Agency

Land use (as a proxy for biodiversity)			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Occupation of converted land ▪ New conversion of natural ecosystems ▪ Restoration of converted land 	<ul style="list-style-type: none"> ▪ Provisioning services ▪ Regulating services ▪ Cultural services 	<ul style="list-style-type: none"> ▪ Functioning ecosystems ▪ Economic ▪ Health ▪ Cultural 	<ul style="list-style-type: none"> ▪ Costanza ▪ TEEB

Waste			
Indicator/output	Outcome	Impact	Sources of valuation data
<ul style="list-style-type: none"> ▪ Hazardous & non-hazardous waste to landfill, incineration, open dump sites ▪ Energy recovery 	<ul style="list-style-type: none"> ▪ Dioxin & heavy metals to air ▪ Noise, odor, pests, visual intrusion ▪ Leachate release 	<ul style="list-style-type: none"> ▪ Human health ▪ Disamenity 	<ul style="list-style-type: none"> ▪ Costanza ▪ TEEB

ANNEX 3: RELATED FRAMEWORKS, STANDARDS AND BENCHMARKS

- Natural Capital Protocol (<http://naturalcapitalcoalition.org/protocol/>): Standardized framework to identify, measure, and value impacts and dependencies on natural capital with the aim to support better decision making.
- Social Capital Protocol (<http://www.wbcsd.org/Clusters/Social-Impact/Social-Capital-Protocol>): Initiative to mainstream the measurement of social impacts of business with the aim to embed social performance into core decision processes.
- ISO 14007 (<https://committee.iso.org/sites/tc207sc1/home/projects/ongoing/iso-14007.html>): Standard on determining and communicating the environmental costs and benefits associated with companies' environmental aspects, impacts and dependencies on natural resources and ecosystem services
- ISO 14008 (<https://committee.iso.org/sites/tc207sc1/home/projects/ongoing/iso-14008.html>): Standard on monetary valuation of environmental impacts and related environmental aspects.
- Dow Jones Sustainability Index (DJSI): Family of indices evaluating the sustainability performance of the largest 2,500 companies listed on the [Dow Jones Global Total Stock Market Index](#) aiming to be a worldwide benchmark for sustainability performance of companies. In 2015, impact valuation was embedded for the assessment of selected sectors.
- [International <IR> Framework](#) (<http://integratedreporting.org/resource/international-ir-framework/>): Sets out how an organization can use an integrated report to communicate on how it creates value over time, including strategy, governance, performance and prospects. It aims to demonstrate the connectivity of financial performance with performance regarding other capitals. In some cases, this may also include monetizing certain effects on the capitals.
- Principles of Social Value (<http://www.socialvalueuk.org/why-social-value/the-principles-of-social-value/>): Provides the basic building blocks that take a wider definition of value into account – the value that people place on the changes they experience in their lives.

ANNEX 4: PRICING MODELS

Different models are available for assigning a monetary value to quantified impacts. The IVR participants strongly recommend using the concept of benefits and costs to society to value the positive and negative impact of business activities in society. A more comprehensive overview can be found in the Natural Capital Protocol, 2016, p.113-121.

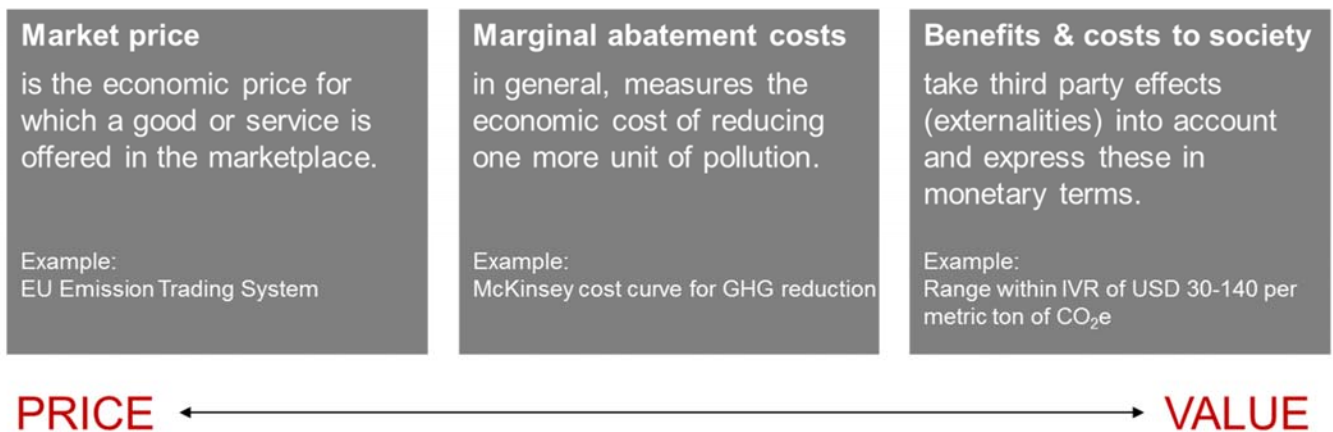


Diagram 5: Pricing models for valuation