

# FIT FOR THE FUTURE

Improving how we understand corporate  
social and environmental impact

## List of abbreviations

A4S	Accounting for Sustainability
GDP	Gross domestic product
BMWK	Federal Ministry for Economic Affairs and Climate Action
CO <sub>2</sub>	Carbon dioxide
COP26	26th United Nations Climate Change Conference of the Parties
CSB	Chemical oxygen demand
CSRD	Corporate Sustainability Reporting Directive
DEAL	Doughnut Economics Action Lab
ESG criteria	Environment, social and governance criteria
EU	European Union
GHG	Greenhouse gas
GRI	Global Reporting Initiative
WBE	well-being economy
HBS	Harvard Business School
IFRS	The International Financial Reporting Standards Foundation
IMV	Impact Measurement and Valuation
IPCC	International Plant Protection Convention
ISSB	International Sustainability Standards Board
IWAI	Impact Weighted Accounts Initiative
LCA	Life cycle analysis
LCIA	Life cycle impact assessments
NFRD	Non-Financial Reporting Directive
VBA	Value Balancing Alliance
wbcsd	World Business Council for Sustainable Development

# EXECUTIVE SUMMARY

Climate change, environmental changes and societal challenges, along with the regulations passed in response to these issues, are increasingly relevant developments for companies. More and more firms are studying these trends and seeking to incorporate them systematically into strategic decisions. On the one hand, this is being driven by rising social pressure to disclose the social and environmental impacts of corporate activity. On the other hand, failures to adequately manage the sustainability-related aspects of corporate governance present a growing risk to business models. The social and environmental aspects of such activities are consequently becoming financially material.

In order to establish sustainability-related objectives as central decision-making factors within their companies, firm executives and analysts must be able to grasp the social and ecological impacts of corporate actions along with their economic effects. *A variety of actors are today developing and testing different approaches to measuring these impacts.* Impact measurement and valuation (IMV) approaches measure this impact and assign monetary value to it. In this regard, two distinct perspectives can be identified. So-called double materiality captures how a company's business activities affect the environment and society. However, it also sheds light on how developments in the environment and society affect a company. Currently, IMV primarily assesses and measures the former perspective, the impact of business activities on the environment and society. At the same time, players such as the Value Balancing Alliance are working on the integration of the opposite approach, the measurement of the impact of the environment and society on the company.

This analysis provides an overview of the state of development of selected IMV approaches. To this end, four key IMV approaches are analyzed in depth, compared and conceptually situated with reference to the other approaches. Based on expert interviews and an expert workshop, this publication identifies existing gaps, points out potential for the further development of IMV approaches and provides an outlook regarding possible next steps.

## KEY FINDINGS INCLUDE THE FOLLOWING

- There is a need to **consolidate and standardize** the various IMV approaches so as to ensure comparability.
- Many companies currently find it difficult to place more weight on social and ecological objectives, as the underlying legal frameworks that would support this, such as a higher price for CO2 emissions and thus clearer incentive structures, are either not in place or have not yet been sufficiently developed and implemented. This can put companies that operate sustainably at a competitive disadvantage, for instance if an environmentally friendly product is more expensive than its less sustainable competitor, and is therefore less attractive to customers. Therefore, it will be necessary to **update the regulatory frameworks set at the political level**, for example via stronger CO2 pricing. For this to succeed, **IMV stakeholders, innovative companies and policymakers** should intensify their dialogue.
- Companies need instruments and methods that enable them to capture and value their social and environmental impacts in a scientifically rigorous manner. For this to succeed, they need **better data**. **An improved basis for valuation can help in making better decisions**, thus **rendering companies more resilient and fitter for the future**.

- To date, the development of IMV methods has largely been dominated by consulting firms. However, there is a need for broad-based accord regarding standardized methods of calculating and assigning societal value. Such methods must be driven by science and anchored in widely held societal mores. Strengthening cooperation between the corporate and research communities in order to develop IMV approaches could facilitate their legitimacy and acceptance. Ideally, care should be taken to provide open source access to the methods and to validate new findings by means of a peer review process.
- Those developing the methodologies should also give greater consideration to the issue of **qualitative impact**. As yet there has been little work done on impacts that are difficult to quantify, such as a company's influence on people's quality of life. Companies often focus entirely on monetization and tend to ignore qualitative outcomes. Problems also exist with regard to measuring issues such as violence, abuses or the inequitable treatment of marginalized groups.
- In the future, as new scientific knowledge flows steadily into the field, there will be **continuous further development** of double materiality calculations within business models. On the one hand, these relate to the influence of the environment and society on corporate business models – for example, in the case of climate change, which requires climate adaptation. On the other hand, research on the way corporate activities impact nature and people – for instance, the construction and use of buildings that affect biodiversity – is also expanding. The IMV approaches used to date are able to depict complex interactions of this nature to only a limited extent.

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# Fit for the future?

## FOREWORD

**Birgit Riess, Program Director**  
Sustainable Social Market Economies  
Bertelsmann Stiftung

When, if not now, does one realize that without fundamental changes, the consequences of climate change and the permanent overburdening of our planetary boundaries can no longer be effectively countered? Nevertheless, we seem to be dealing less with a problem of realization, because for years we have had the indisputable evidence that urgent action is imperative. While we now know relatively well what needs to be done and changed in many areas, the changes are not happening fast enough and in some cases are not yet being widely implemented. However, we also know that this is an economic and societal tour de force that can only succeed if the associated areas of tension and systemic interactions between material prosperity, social justice and ecological sustainability are wisely balanced. These are the core principles of a sustainable social market economy.

One of the central levers for an ecological and social transformation is the conversion to a climate-neutral and resource-conserving economy. This requires precisely tailored and targeted economic policy measures that set the right framework conditions and incentive systems for entrepreneurial action. But it also requires new management systems in the companies themselves that make it possible to adequately record the ecological and social impacts of their business activities on society and align them with consistent target systems.

A new level of sustainability reporting is currently being created with the EU Taxonomy to facilitate sustainable investment, the new reporting standards of the Corporate Sustainability Reporting

Directive (CSRD) and the International Accounting Standards Board's decision to develop baseline accounting for sustainability. However, these approaches may still fall short against the background of the enormous pressure to achieve greater sustainability. This study therefore aims to take a look at so-called Impact Measurement and Valuation (IMV) approaches, which attempt to map the actual comprehensive and holistic effects of corporate actions on society and thus offer data-based instruments that can lead to measurable changes in companies.

The European Union is clearly committed to a sustainable transformation of the economy. It has sent strong signals in this regard by adopting the European Green Deal and a new emissions reduction target of 55% by 2030.<sup>1</sup> It has also linked its pandemic assistance program to environmental targets, requiring that 37% of the coronavirus aid money provided must be spent on green investments.<sup>2</sup> The aim is to create an economy in Europe that allows nature and the climate to regenerate. At the same time, the EU wants to promote social cohesion and social justice.<sup>3</sup> Policies such as the EU Corporate Sustainability Reporting Directive (CSRD) require companies to publish information about their business activities on a regular basis.

Some cutting-edge companies have shown how social and ecological objectives can successfully

be made a primary focus of corporate activity.<sup>4</sup> In this regard, having a comprehensive understanding of an organization's impact on society and the environment is becoming increasingly relevant, even in financial terms. Companies acting in this way can benefit from an enhanced image, an improved reputation among customers,<sup>5</sup> increased innovative strength in the market<sup>6</sup> and financial savings.<sup>7</sup> These factors can in turn produce competitive advantages. Consumers are increasingly paying attention to the social and environmental impact associated with their consumption, and market demand is shifting more and more in favor of sustainable offerings. For example, 10 percent of Germans are now vegetarian.<sup>8</sup> However, sustainability considerations in business decisions

1 European Parliament 2021.

2 Simon 2020.

3 European Commission 2021.

4 Braig and Edinger-Schons 2020.

5 Hermann 2007; IDC 2021

6 Rufer and Huber 2021; IDC 2021.

7 Rufer, and Huber 2021.

8 Bundesministerium für Ernährung und Landwirtschaft 2021.

## INNOVATORS

**Patagonia** is handing over ownership to foundations, with all profits going into investing in climate protection projects.

**Danone** has been an "enterprise à mission" since 2020. Under this model, the company's purpose as defined in its articles of association must be aligned with social and environmental objectives.

**Hejhej**, a producer of yoga mats, drives the circular economy not only by manufacturing its products from recycled materials, but also by taking its products back from customers at the end of their life and reuses them.



are also playing a growing role in the financial market. Investors are increasingly incorporating company information relating to environmental, social and governance (ESG) criteria into their decisions. A stronger focus on corporate social responsibility can also translate into long-term competitive advantages, as this too can help improve a company's reputation.<sup>9</sup> Companies at the forefront of sustainability are also gaining popularity in the labor market. Along with being more successful in protecting the climate, such companies find that their employees are on average more motivated than their counterparts in traditional, primarily profit-oriented companies.<sup>10</sup>

A change in strategy and thus of corporate objectives is vitally important in order to be able to achieve sustainability and climate targets, regardless of whether these have been set by government policy or are socially desired.

**“ It appears that the days of purely profit-driven companies are past, and that companies need to understand, transparently communicate and actively manage their contribution to society.”**

Per Braig & Laura Edinger-Schons<sup>11</sup>

To date only a few companies have set out on this path. For the vast majority, social and ecological goals continue to be relegated to the background.<sup>12</sup> While many have adorned themselves with net-zero greenhouse gas emissions targets (“climate neutrality”) in their corporate reports, this often means something other than what the name suggests. In a study by Day et al. (2022) examining the emissions reduction targets of 25 companies, the authors showed that these ambitious-sounding buzzwords often cloak much lower ambitions.<sup>13</sup> Some companies market even minimal changes

in their operations as “net zero” by excluding the emissions produced in their supply chains, using a year in which emissions were particularly high as a benchmark, or outsourcing the most climate-damaging activities to third-party suppliers. In such a case, net zero may mean overall reductions of only 40%, rather than emissions that actually sum to zero.<sup>14</sup> Only the most ambitious companies reviewed in the study are actually targeting reductions of up to 90%.<sup>15</sup>

Thus, the challenge is to ensure that social and environmental considerations actually lead to measurable change in all companies. Currently, many companies find it difficult to place social and environmental goals on a par with monetary objectives, as the legal frameworks governing the markets in which they operate severely limit the opportunities to do so. For example, an individual company that wants to act as a leader in this regard may today be at a competitive disadvantage, because most social and ecological costs are not reflected in the prices of the final product. Rather, such costs are said to be “externalized,” because they are borne by society rather than by the company or the customer. The market price of a non-sustainable product is often lower than that of a competing sustainable item. This may be because the non-sustainable manufacturer has moved production to distant and inexpensive facilities, pays its employees less or uses non-organically grown raw materials, for example.

In November 2021, at the U.N. Climate Change Conference (COP26), the International Financial Reporting Standards Foundation (IFRS) announced the creation of the International Sustainability Standards Board (ISSB). This new body is currently working to develop a generally accepted standard for reporting on sustainable aspects of corporate governance, with the goal of counteracting the fragmentation of reporting obligations. It presented

9 Bianchi, Bruno and Sarabia-Sanchez 2019.

10 Henderson 2020.

11 Braig and Edinger-Schons 2020.

12 Kunzmann, Edinger-Schons and Kraemer 2021.

13 Day et al. 2022.

14 Op. cit.

15 Op. cit.

the first necessary steps in May 2022, and aims to have defined the core elements of a global reporting framework by the end of 2022.

At the EU level, the Corporate Sustainability Reporting Directive (CSRD) will soon replace the existing Non-Financial Reporting Directive (NFRD). As of 1 January 2024, companies will be required to submit reports complying with the provisions of the CSRD, with the first such reports addressing fiscal year 2023. The goal is not only to create EU-wide standards for sustainability reporting, but also to make significantly more companies subject to reporting requirements.

Germany supports the initiatives launched by the EU. In Germany, the topic is accorded particular relevance at the macroeconomic level. For instance, the Annual Economic Report produced by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) places a strong emphasis on social and ecological objectives:

“ **The goal is to further develop the social market economy into a social-ecological market economy, and thus continue its success story while remaining within planetary boundaries.**”<sup>16</sup>

Later in the report, the ministry says:

“ **This path also means that companies and regions will come under pressure to adapt. Some business models will no longer be viable, and new ones will have to be developed.**”

Federal Ministry for Economic Affairs and Climate Action<sup>17</sup>

The current form of sustainability reporting, as well as much of the new regulation in the area, can serve as one element of a more comprehensive approach to impact measurement and valuation. This will become necessary as investors, consumers and others begin evaluating business models, products and services on the basis of their impact on the environment and society. The reporting models used to date remain at the level of output and outcome indicators. Actual impact is much more difficult to calculate. A next step is thus to express this impact in monetary terms using coefficients. This enables these ecological and societal effects to be assessed and compared with other economic variables within a conventional economic framework, via their valuation in monetary units. We regard the further development of impact measurement and valuation approaches as a necessary task, both to transform the economic system so that it remains resilient and no longer exceeds planetary boundaries, and to create a system of value creation that can be sustainable over the long term.

This study, commissioned by the Bertelsmann Stiftung, analyzes what are known as *impact measurement and valuation* (IMV) approaches. The category includes a range of instruments that provide the ability to measure, understand and compare a company's social and ecological impacts,<sup>18</sup> allowing these to be incorporated into the organization's decision-making. Analysis of this kind addresses both the company's impact on the environment and society, and the impact of the environment and society on the company. This two-way concept is referred to as double materiality. Companies need instruments and methods that enable them to capture and evaluate their social and environmental impact in a well-founded manner.

16 Bundesministerium für Wirtschaft und Klimaschutz 2022: 10.

17 Op. cit.: 28

18 When discussing IMV, this study largely refers to companies. However, the analysis and conclusions also refer to any other organizations and institutions that may also use IMV approaches.

## Relevance of IMV for the transformation of the economy

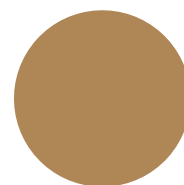
With the help of IMV, it becomes possible to put companies' activities in context and better understand their impact on the environment and society. For example, data drawn from the environmental management field are given new significance, and can be incorporated more directly into corporate business decisions. Take, for instance, a beverage company that has not established a recycling system for its bottles. The firm's executives know that this will have a negative impact on the environment and society, which may in turn create risks in the form of new regulations or damage to the company's reputation. However, the executives cannot gauge the exact magnitude of the impact associated with the absent system, or determine the context in which it should be evaluated. With an IMV approach, they could better measure, assess and ultimately manage these impacts on society and the environment.<sup>19</sup> This is the value-to-society perspective.

The last stage of evaluating impact can involve the translation into monetary units. This valuation component of IMV approaches focuses on placing a monetary value on the various aspects of impact. Coefficients are used to calculate the societal costs generated by the company's activities.

This study's analysis looks at a number of different actors in this field, offering a detailed examination of four key approaches developed by the following organizations: the Capitals Coalition, the Value Balancing Alliance, the Impact Weighted Accounts Initiative and QuartaVista.

**Chapter 2** of this study describes the methodology and procedures being used. **Chapter 3** offers a general overview of impact measurement and valuation and introduces the conceptual landscape.

**Chapter 4** compares the different IMV approaches. **Chapter 5** describes key challenges for companies on the way to fulfilling social and ecological goals. **Chapter 6** sketches an outlook for the field.



<sup>19</sup> Value balancing alliance 2022 a.

The aim of this report is to provide an overview of the impact measurement and valuation field and selected approaches, as well as to identify gaps and make initial comparisons between different approaches and strategies. The underlying data were collected in the following three ways:

### 1. An analysis of the literature

Based on the snowball sampling method,<sup>20</sup> relevant literature was collected until the point of theoretical saturation. This exploratory approach makes it possible to obtain an overview of existing systems and approaches.

### 2. A workshop

In a co-creation workshop, the authors discussed initial results with experts from the Bertelsmann Stiftung. Participants also identified key issues to be addressed in the subsequent stages of the study. This process served as the basis for the team's mapping of existing IMV approaches. In addition, the workshop participants narrowed down the content to be addressed, and discussed initial assessments of advantages and disadvantages. Participants included Birgit Wintermann, Christian Schilcher, Birgit Riess, Cornelia Nyssing, Marc Wolinda and Marcus Wortmann.

### 3. Interviews

The authors conducted six semi-structured interviews with experts. The selection of the interview subjects was carried out via *purposive sampling*.<sup>21</sup>

Thus, subjects were specifically selected and the interviews themselves organized with the goal of the work in mind.<sup>22</sup> Interviews were conducted with the following individuals:

1. Prof. Dr. Laura-Marie Edinger-Schons; University of Mannheim
2. Prof. Dr. Judith Ströhle; University of St. Gallen
3. Dr. Jenny Lay-Kumar; Regionalwert AG/QuartaVista
4. Dr. Michael Verbücheln, Value Balancing Alliance
5. Karen Wilson, OECD/Impact Management Platform
6. Natalie Nicholles, Capitals Coalition

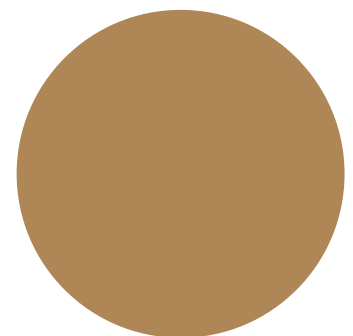
The methodological objectives were:

- a. To ensure that no important information was left out of the snowball sampling performed for the literature review;
- b. To review central findings in the field to date;
- c. To assess the applicability of the various approaches; and
- d. To identify methodological weaknesses and potential for future development.

<sup>20</sup> Creswell 2015.

<sup>21</sup> Bryman 2016.

<sup>22</sup> Teddlie and Yu 2007.



## 3.1 What is impact measurement and valuation?

The economy, the environment and society interact in complex ways. To make products, services and entire business models more sustainable, companies need to understand the impact of their activities on the environment and society. At the same time, company business models are themselves subject to emergent risks and dependencies due to ecological and social developments. Taken together, these two perspectives are referred to as double materiality. To acquire a comprehensive understanding of these interactions, the various forms of impact must be measured, and the results translated into a (monetary) value.

IMV approaches perform exactly this task. They provide a set of tools and methods that enable companies to identify, measure, value and manage their non-financial – that is, social and environmental – impacts.<sup>23</sup> Per Braig and Laura Edinger-Schons define IMV as follows:

“**IMV is an approach that is built on the idea that value creation is mutually dependent. It is a set of tools and methodologies that enable companies to identify, measure, monetarize and manage their societal and environmental impacts.**”

Per Braig & Laura Edinger-Schons<sup>24</sup>

Examining the constituent terms separately can help convey the scope of IMV:

- **Impact** comprises the planned and unplanned, positive and negative effects of corporate activities.
- **Measurement** refers to the recording and measurement of these effects.
- **Valuation** describes the process of associating these effects with monetary units.<sup>25</sup> This point makes IMV particularly relevant, because the approach differs in this respect from previous concepts used for non-financial matters. For example, the standards set by the Global Reporting Initiative (GRI) do not provide for a monetary valuation.

Many of the developments in the IMV field have emerged from academic discourse, management consultancies or from companies themselves.<sup>26</sup> **Section 3.2** introduces the conceptual landscape around IMV. **Section 3.3** uses an illustrative example to look more closely at the detailed steps of an IMV analysis.

<sup>23</sup> Kunzmann, Edinger-Schons and Kraemer 2021.

<sup>24</sup> Braig and Edinger-Schons 2020: 3.

<sup>25</sup> Op. cit.

<sup>26</sup> Stroehle 2021 (Interview).

### 3.2 Distinctions and terminology (conceptual landscape)

The IMV landscape includes a number of different actors, each with their own interests and concepts. Moreover, a variety of different subfields and approaches can be identified, each coming with its own “language.” Each one addresses different aspects of the field, draws on its own set of assumptions and features its own terminology. At the same time, there are a number of similarities and points of overlap – for example, in the topics dealt with.<sup>27</sup> According to the definition given at the beginning of this chapter, IMV is a broad subject area. All of the different approaches are therefore directly or indirectly part of the discourse,<sup>28</sup> the totality of which can thus appear confusing and complex.<sup>29</sup>

Further complicating things is the fact that IMV is a relatively new field. Until recently, it was considered a niche topic, and it still plays only a limited role in today’s academic discourse.<sup>30</sup> The social and environmental aspects of corporate governance are regarded as a new class of information that supplements previously available information, and which can consequently make decision-making more efficient. It is at once a goal and a challenge to describe such information by means of language, ascribe (monetary) value to it, and finally make this language understandable outside a company’s boundaries, within society at large. Christian Heller of the Value Balancing Alliance<sup>31</sup> notes that, in addition to the previously dominant language of profit maximization, companies now need to learn new languages – such as those of social and environmental capital, which are still emergent.<sup>32</sup> The Impact Management

Platform<sup>33</sup> provides a comprehensive overview of the terminologies used by these new languages. Providing explanations of terms, the platform's website links these terms to each stage in the IMV process.<sup>34</sup>

**Figure 1** from the Value Balancing Alliance (VBA) depicts the distinction between IMV and traditional reporting. The parameters of input and output are familiar from sustainability reporting, for example when a production process uses raw materials (input), leading to the emission of greenhouse gases (output). Measuring and assigning monetary value to the impact adds three steps to this approach: outcome, impact and value of impact. A production process can produce local changes to the climate (outcome), which can in turn lead to health problems for the local population due to more intense heat waves (impact). The costs associated with any necessary treatments are borne by the healthcare system. These costs can be calculated. These are thus the societal costs generated by the output of greenhouse gases. Proposals for calculating the societal costs associated with emissions of a ton of CO<sub>2</sub> have been developed by the German Federal Environment Agency,<sup>35</sup> among other sources. The population or the healthcare system can assign monetary value to this impact (value of impact).

Since sustainability reporting can be understood as part of a comprehensive IMV process, there is some conceptual overlap between the two. For example, the concept of double materiality should soon find its way into sustainability reporting.<sup>36</sup> One key distinction, however, is that regular reporting remains focused on the measurement and disclosure of inputs and outputs. IMV, by contrast, includes the identification of outcomes and impact, and also assigns a value to this impact. The

27 Edinger-Schons 2022b.

28 True Price 2015.

29 Op. cit.

30 Lay-Kumar 2021 (Interview).

31 Edinger-Schons 2022b.

32 Edinger-Schons 2022b; Natural Capital Coalition 2016.

33 Impact Management Platform 2022 (website).

34 Wilson 2022 (Interview)

35 Umweltbundesamt 2021

36 Nuijten 2021.



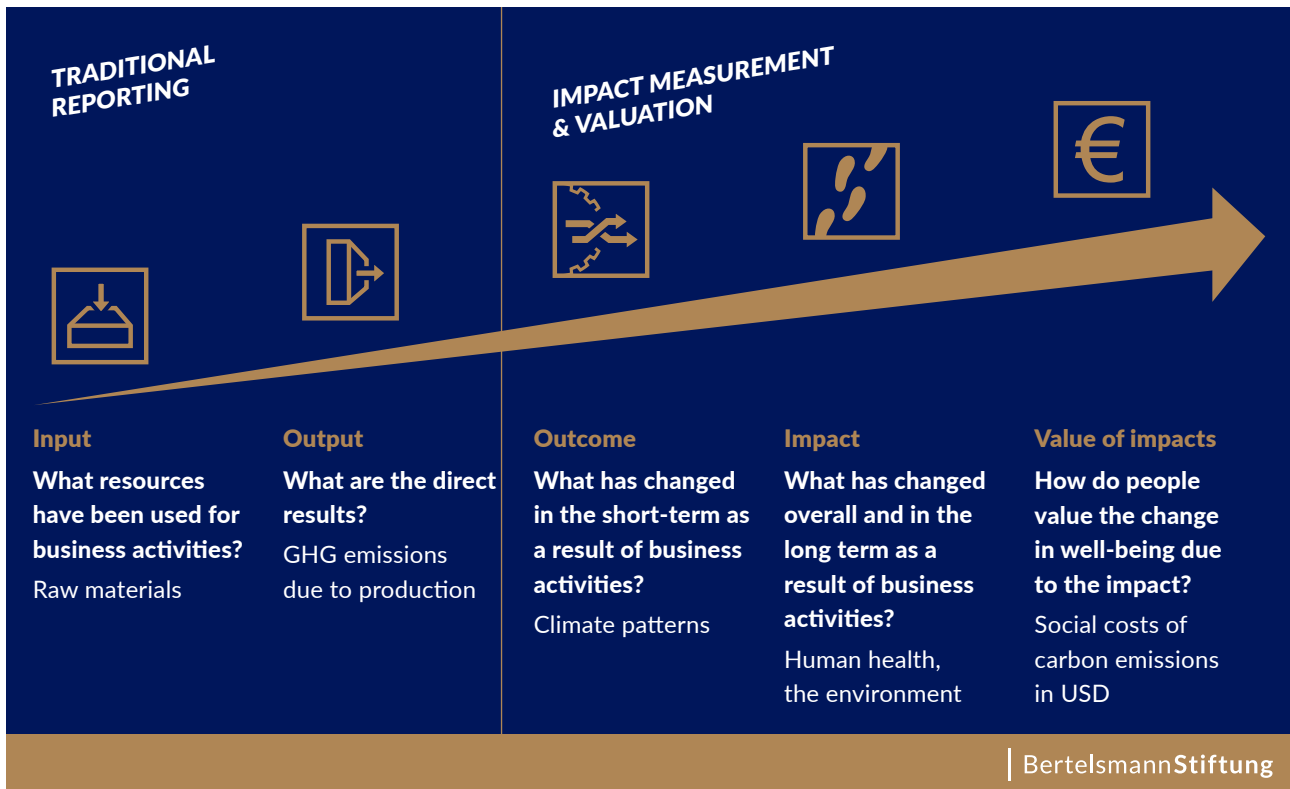


Figure 1 Comparison between traditional sustainability reporting and an expansion of the concept to include impact measurement and valuation. (Source: Value Balancing Alliance)

primary difference between this and traditional sustainability reporting is therefore that impact in IMV is not only measured, but also assigned a value,<sup>37</sup> and can thus better serve as a basis for decision-making at the strategic and operational levels. The monetary valuation of impact in particular facilitates its integration into economic decisions. Impact expressed in monetary units can be compared with other values, and can be aggregated and integrated into accounting operations.<sup>38</sup> However, this approach is not free of ethical controversy. There is a concern that social, environmental and economic factors are being set off against each other, which may mean that certain important aspects are being overlooked and the risk of so-called greenwashing increases.<sup>39</sup>

37 Braig and Endinger-Schons 2020.

38 Value Balancing Alliance 2022 a

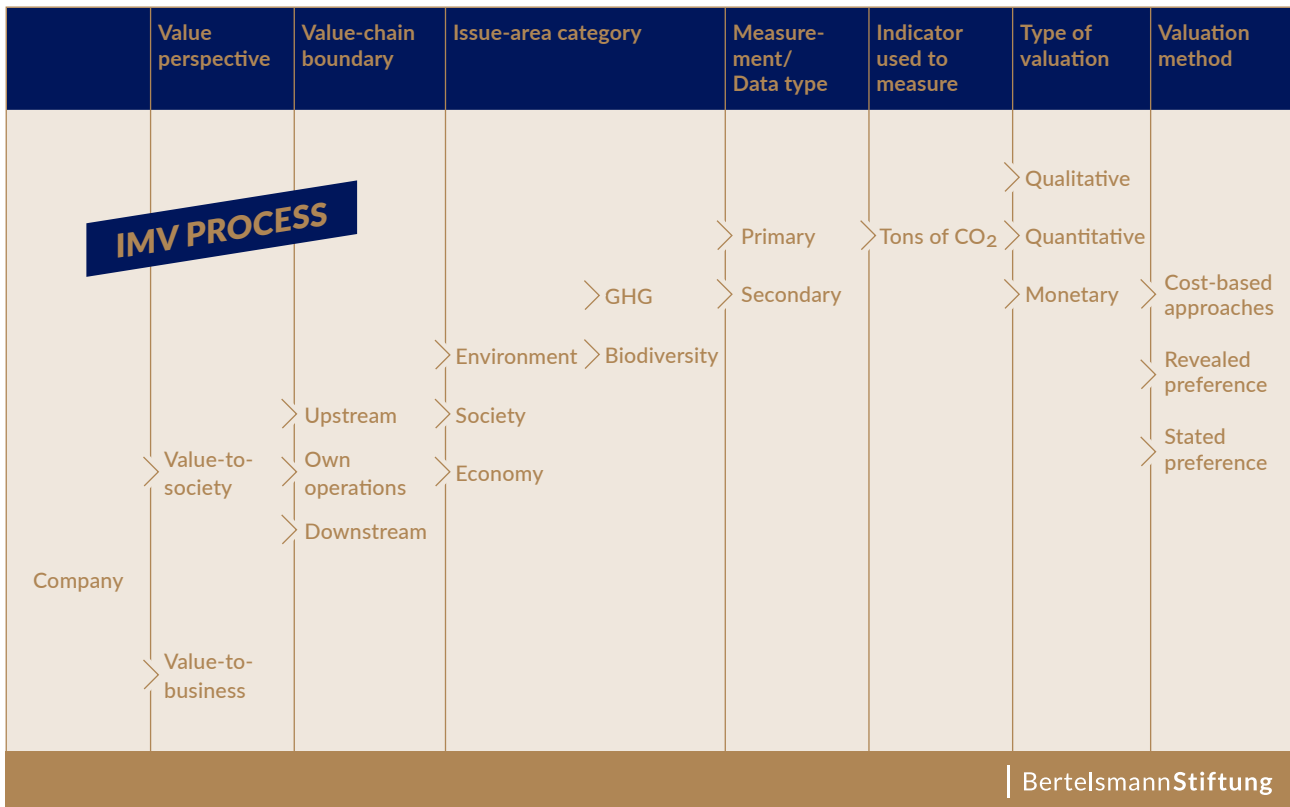
39 Value Balancing 2021 a.

### 3.3 Example procedure for an IMV analysis

IMV analysis can be applied in a number of different ways. **Chapter 4** presents the specific processes in greater detail. In the following, we walk through an example in order to provide a basic understanding of the IMV process. **Figure 2** illustrates the process of measuring and assigning monetary value to a company's impact.

**A value perspective** refers to **double materiality** – that is, the impact on the company (value-to-business) on the one hand, and the impact on the environment and society (value-to-society) on the other. This also encompasses interactions with and dependencies within the company's business model.

**The value-chain boundary** refers to the different parts of the value chain, along with their delineation by area of activity. The three areas are:



**Figure 2** IMV process – Items in the first four columns from left to right inform decisions regarding what should be measured and assigned value. (Source: Authors)

- **Upstream:** Activities in the supply or delivery chain (from extraction of raw materials to the factory gate, or cradle to gate);
- **Own:** Activities over which the company has direct operational control (from factory gate to factory gate, or gate to gate); and
- **Downstream:** Activities related to the sale, use, recovery, recycling and disposal of the product or service (from factory gate to point of disposal, or gate to grave).<sup>40</sup>

**Issue-area categories** assign the values to be measured to specific topical areas, such as the environment. These can in some cases be further broken down into sub-categories, such as greenhouse gas emissions (GHG) and biodiversity.

<sup>40</sup> Natural Capital Coalition 2016.

**Measurement type/data type** includes options for collecting primary data (such as energy data from the solar panels on the roof of a company site) or secondary data (such as average values for pollutant emissions in the German electricity mix, as stored in environmental-information databases).

**Measurement indicators** are variables, in most cases quantifiable; for instance, CO<sub>2</sub> equivalents in tons can be used to measure the climate impact of business activities. For subject areas such as biodiversity, such indicators are more difficult to standardize and consolidate.

The various steps on the way to valuation are central to IMV.

**Valuation types** differ based on how the valuation is being performed: The assignment of value to impact can take a qualitative (e. g., in the form of a

description of a value), quantitative (e.g., through use of a number system), or monetary form. On a qualitative level, the analysis may use a verbal description. For example, the impact of the company's activities might be said to lead to a deterioration in air quality, which in turn reduces residents' quality of life. On a quantitative level, a measurement might show that there has been a 30% degradation of air quality, or a 20% enrichment of the air with NOx. Assigning monetary value would involve calculating the societal cost of air degradation – that is, the value of the associated costs borne by society. For example, in Europe alone, more than 300,000 premature deaths occur annually due to particulate matter pollution.<sup>41</sup> The cost to healthcare systems averages €1,276 per EU resident.<sup>42</sup>

“ It is about getting value into decision-making, not monetizing everything.”

Natalie Nicholles, Capitals Coalition<sup>43</sup>

The **valuation methods** column in [figure 2](#) contains possibilities for contextualizing and valuing the measured impact. Monetary valuation procedures are based either on costs, revealed preferences or stated preferences, among other factors.<sup>44</sup>

- Cost-based approaches refer to the costs that would be incurred if the capital under consideration (e.g., natural capital) had to be replaced (replacement costs).
- Revealed-preference-based valuation methods refer to monetary sums that illustrate financial value, such as the cost of travel and entrance to a nature park.

- Valuation procedures based on stated preferences address the question of willingness to pay.<sup>45</sup> For example, how much are people willing to pay to avoid harm<sup>46</sup> or to preserve natural or social capital?

The process of assigning monetary value is discussed in greater detail in [section 5.2](#).

41 European Environment Agency 2021.

42 European Public Health Alliance 2020.

43 Nicholles 2021 (Interview)

44 When discussing IMV, this study largely refers to companies. However, the analysis and conclusions also refer to other organizations and institutions that may also use IMV approaches.

45 Freiberg et al. 2020.

46 Döring 2020.

## 4.1 Relevant actors

For the purposes of this study, we selected four key approaches that explicitly address impact measurement and valuation: the Natural and Social Capital Protocols of the Capitals Coalition,<sup>47</sup> the Impact Statements of the Value Balancing Alliance,<sup>48</sup> the Impact Weighted Accounts Initiative of the Harvard Business School, and the methodology applied by the QuartaVista project. These approaches were chosen in part because they are widely referred to in the literature. In addition, consideration was given to whether the interplay of the selected actors would produce the most meaningful representation of the field possible – that is, whether a wide range of methods and objectives would be presented. All of the selected approaches consider valuation to be essential to their framework and monetization as a relevant aspect thereof. Each approach was examined and compared on the basis of their respective frameworks and position papers, as well as a series of interviews.

There are also several other relevant actors that are directly or indirectly engaged in reassessing corporate performance by means of impact measurement and valuation. These include academic institutions such as the Oxford Saïd Business School,<sup>49</sup> the University of Mannheim<sup>50</sup> and Harvard University.<sup>51</sup> In addition, many other organizations

such as Social Value International, Rethinking Capital, The Economics of Mutuality, Accounting for Sustainability (A4S), Valuing Nature, World Business Council for Sustainable Development (wbcSD) are working with IMV. In addition to management consultancies, which have played a major role in creating the practice, many companies themselves have also been engaged in IMV. Some of these companies have begun developing their own proprietary methods or are piloting existing ones.<sup>52</sup>

## 4.2 Categories used in comparing approaches

The objective of comparing different frameworks is to facilitate a consolidation and standardization of approaches, which would also allow companies to make better-informed decisions. The analysis thus aims to subject each approach to a critical assessment and thereby create the basis for a discussion on further development and consolidation. The selected frameworks are therefore compared in terms of the following categories: Organizational form, product, specifications, topics, level of analysis, indicator consistency and valuation. **Table 1** depicts the selected categories and their distinguishing features.

47 Nicholles 2021 (Interview)

48 Value Balancing Alliance 2021b.

49 Stroehle 2021 (Interview)

50 Edinger-Schons 2021 (Interview)

51 Serafeim et al. Freiberg et al. 2022b

52 True Price 2015.

	Organizational form	Product	Specifications	Topics	Level of analysis	Indicator consistency	Valuation
Value Balancing Alliance	What kind of organization is it?	Which product or output is used?	What is specified in the respective products?	What topics are covered?	How deeply integrated into the analysis is the value chain?	How are indicators handled? Are there standardized indicators?	What type of valuation is suggested?
	What is being compared?						Are there monetization efforts?
							BertelsmannStiftung

**Table 1** Categories for comparing IMV approaches (Source: Authors)

### Organizational form

The *organizational form* describes which group developed the respective IMV approach. Their composition influences the underlying objectives and methodological approaches.

### Product

The *product* category is about delineating the output generated by the four IMV approaches: While some of the organizations have launched projects, others have developed descriptions of processes, frameworks or methodologies for measuring and assessing a business’s environmental and social impacts. For the purposes of consistency, the following analysis uses the term “frameworks” throughout to refer to all product forms.

### Specifications

The specifications category is devoted to the question of the extent to which the respective IMV approach specifies a standardized process that companies wishing to use the approach must undergo. It also compares how much decision-making leeway the approach gives a company in adapting the process to its own considerations. The fewer specifications there are, the better a company’s individual challenges can be addressed. However, this makes comparability more difficult and creates more opportunities for greenwashing (see also “Risk of greenwashing” section). The analysis here addresses the areas in which standardization efforts (e.g., of calculation methods) are already underway.

### Topics

Underlying the *topics* category is the question of which issues are addressed by the respective IMV approach, that is, whether environmental and/or social topics are addressed. To date, the area of social topics in particular does not appear to have been fully developed in detail. While some approaches focus on fewer topics that should therefore be subject to greater standardization, others try to cover the widest possible range of topics that may be relevant for companies.

### Level of analysis

The *level of analysis* defines the *value-chain boundary*, that is, the question as to which system boundaries the respective IMV approach sets within the value-chain. It is important to provide a precise description of this area in order to prevent confusion or deliberate deception (“greenwashing”). For example, if a company sets “zero emissions” as a goal, this must be clearly defined. Does this apply only to in-house company activities that take place within its factory gates (“own”)? Or does it apply as well to parts of the supply chain (“upstream”)? Or does it also apply to the phase involving a product’s use or consumption by customers, perhaps even for its disposal or recycling (“downstream”)? The broader this level of analysis, the more impact a measurement and evaluation can reflect.

### Indicator consistency

The *consistency of the indicators* indicates the potential for standardization. Indicator consistency is required to allow for a comparison of companies' impacts. The relevant indicators chosen by a respective IMV approach ultimately determine the relevance of the measurement which, in turn, shapes the discourse on IMV. While some IMV approaches propose using a uniform set of indicators that companies can apply step by step in practice, other approaches rely more on examples and refer to different sources.

### Valuation

The last category compares the *valuation* processes indicated by different IMV approaches. The key question here is how to go about *placing a monetary value on certain impacts*. What types of valuation does the IMV approach address? Which perspective on impact is applied? The company's impact on society (*value-to-society*)? The environment's impact on the company (*value-to-business*)? Or both (*double materiality*)?<sup>53</sup> On what basis is the evaluation of these impacts carried out? Qualitative (descriptive)? Quantitative (based on numbering systems)? Or monetary (with the allocation of monetary units)?<sup>54</sup> Monetization is one way to make impacts more readily understandable and help facilitate decisions, but an impact analysis can be conducted without this step.<sup>55</sup> The "Assign monetary valuations" section discusses the advantages and disadvantages of this basis for valuation.

53 Natural Capital Coalition 2016.

54 Döring 2020.

55 The International Financial Reporting Standards Foundation 2022.

## 4.3 Description of the approaches

### The Capitals Coalition's Natural, Social and Human Capital Protocols

“ Our current economic system is failing to mitigate climate change, reduce inequality and protect the natural world because organizations are unequipped to make sense of their complex relationships with these capitals, and to recognize the ways in which their activities impact on them and depend on them for success.”

Capitals Coalition<sup>56</sup>

The Capitals Coalition was formed to establish and mainstream a consistent way for organizations to understand how their success is directly or indirectly underpinned by the value that flows from all capitals (natural, social, human and produced). When organizations are provided with the tools they need to identify and measure the value they receive from all capitals (often referred to as impact measurement), they are able to better understand their impacts and dependencies across the global economic system.

Working with more than 400 organizations worldwide, the Capitals Coalition involves more than 24,000 people from the business, finance, policy-making, research and civil society sectors who are engaged with the concept of value in impact measurement. The Coalition forms the heart of an extensive network that is trusted by the impact measurement community to bring people together and lead the capitals movement.

The Coalition offers two internationally recognized frameworks, *the Natural Capital Protocol and the Social and Human Capital Protocol*, which address the need for a holistic understanding of capital

56 Capitals Coalition 2022: 6.



	Organizational form	Product	Specifications	Topics	Level of analysis	Indicator consistency	Valuation
Capitals Coalition	Global consortium of nearly 400 organizations that includes the Value Balancing Alliance, Impact Weighted Accounts Initiative and Social Value International.  Companies themselves, business consultancies and academics.	The Social & Human Capital Protocol and Natural Capital Protocol are two frameworks to help improve decision-making.  Under development: The Integrated Capitals Protocol.	The protocols are not mandatory.  The relevance of specific aspects of each protocol varies depending on the issue being addressed.	Both protocols are concerned with social factors and the environment.  More specific topics are provided as examples.	Three levels of analysis are addressed explicitly: upstream, direct operations and downstream.	The protocols provide examples of various possible indicators.  However, they do not provide their own set of indicators.  Work on a set of indicators for six topics is currently underway.	Value-to-business and value-to-society perspectives are addressed.  Valuation can be qualitative, quantitative or monetary.

**Table 2** Brief description of the Capitals Coalition's IMV approach (Source: Authors)

in contemporary organizational decision-making.<sup>57</sup> These protocols also recommend that companies take environmental and social factors into consideration when making decisions.

The authors describe in both frameworks the conditions for identifying, measuring and assigning a value to direct and indirect as well as positive and negative impacts. They also highlight the interdependencies that exist between individual types of capital. In 2023 an integrated *Capitals Protocol* will be published to address the ways in which environmental and social issues affect each other.<sup>58</sup>

**“What we’re all aiming toward is (...) mandatory inclusion of the value of nature and people in decisions.”<sup>59</sup>**

Natalie Nicholles, Capitals Coalition

Each framework consists of nine steps designed to walk companies through the process, beginning with how to frame the issue (i.e., answer the question of “Why conduct an analysis of natural or social capital?”), then exploring the scope of what is to be analyzed (i.e., answer the “What?” question), how to measure and value costs and benefits and, finally, how to apply the results.

In the beginning, companies address basic questions relevant to the issue, such as:

- What can we do with our results?
- Who can help develop the business case for a natural, social or human capital assessment?
- Who needs to be informed of our capital assessment process?
- What additional training or capacities are needed for the analysis?

Potential applications, such as methods used to estimate data or modeling techniques, are addressed and discussed as part of the nine steps. The Capitals Coalition also refers to additional sources such as databases or standards, and works with

<sup>57</sup> Natural Capital Coalition 2016.

<sup>58</sup> Nicholles 2021 (Interview); Capitals Coalition 2020.

<sup>59</sup> Nicholles 2021 (Interview)

others to develop standardized approaches.<sup>60</sup> Companies can also pick and choose individual aspects presented in each framework that are suited to their specific issue area. However, in order for a company to conduct an analysis of its impacts, dependencies and values in their totality, it must undergo the process from beginning to end.

Each framework covers environmental, social and economic *impacts and dependencies*. The ways in which a company interacts with the environment and society depends on the sector in which it is active and the focus of its offerings. Whereas a fish vendor will be particularly hard hit by the impact of environmental issues such as overfishing, a company in the fashion business faces higher risks with regard to social issues such as human rights compliance in the supply chain of materials. A fashion retailer's impact in this regard is also greater when it comes to the ways in which it sources its materials. Different aspects of each framework are thus particularly relevant for some companies and irrelevant for others. It is therefore recommended that companies, when selecting the appropriate level of analysis, examine in addition to their own activities, supply chain (upstream) as well as customer and disposal activities (downstream), and that these be weighted in terms of the issues being addressed and their relevance.

The Capitals Coalition does not provide a standardized or closed set of indicators to use when measuring or valuing costs and benefits of impacts. Instead, it refers to different sets of indicators and recommends that a company select the indicators most appropriate to its own needs and the latest developments.

For example, a coffee producer needs bees to pollinate his or her crops. Indicators that measure and assign a value to the impact of a declining bee population in the area around a coffee plantation

are thus also relevant for the company. The decline in the coffee plantation's bee population is due in part to activities carried out by the company itself, such as the use of pesticides, changing how land is used, and generating greenhouse gas emissions, each of which exacerbates climate change. These activities also have negative impacts on society as a whole, which can include, for example, biodiversity loss and the threat of ecosystem collapse. The company can then draw upon indicators expressed in financial terms, such as the cost of reduced yields or the cost of setting up mobile pollination services that become necessary as a result of compromised natural capital.<sup>61</sup> Capitals Coalition asserts that understanding the value to society provided by the bee population (in this case, in monetary terms) enables informed decision making about how companies should act. For example, a company could launch collaborative projects with other companies battling to sustain bee populations.


Initial efforts are underway to develop a standardized set of indicators for selected topics. For example, the Capitals Coalition, together with the Value Balancing Alliance and other organizations, is developing a standardized set of indicators that address six different environmental topics in the context of their *Transparent* project.<sup>62</sup>

The frameworks also provide an explanation of each analytic perspective. Depending on the targeted objective targeted, either the *value-to-business* or *value-to-society* perspective can be adopted. Alternatively, both perspectives can be considered together, which is increasingly the case as the significance of systemic risk (climate change, biodiversity loss, inequality) grows. In the latter case, the Capitals Coalition speaks of impacts on society and the environment as well as the company's dependencies on environmental and social capital.

60 Natural Capital Coalition 2016.

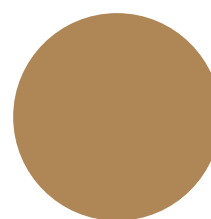
61 Natural Capital Coalition 2016.

62 Nicholles 2021 (Interview)



The Capitals Coalition understands valuation to be the process by which the relative value or importance of impacts are determined. In the example of plans to log a forest, this would involve posing the question: How do residents feel about these plans? Are they negatively predisposed to them? From the perspective of the residents, what is the forest worth? Evaluating such things can take qualitative, quantitative or monetary forms, depending on the issue. Monetary valuation involves translating quantitative estimates of costs and/or benefits into a common currency.<sup>63</sup>

The Capitals Coalition aims to have most companies, financial institutions and governments incorporate the value of all types of capital – including natural and social capital – into their decision-making processes by 2030.



63 Natural Capital Coalition 2016.

## The Capitals Coalition's Natural, Social and Human Capital Protocol

**Company:** Natura &Co

**Sector:** Cosmetics

**Practice has been applied since:** 2020

**IMV APPROACHES  
APPLIED**

**“ We believe that the value of a company is connected to its capacity to contribute to the evolution of society. And, in order to collaborate with the broad change that the world needs, the first step is to measure our impacts.”**

(Natura Integrates Profit & Loss Accounting 2021)<sup>64</sup>

### History

Natura has been in operation since 1969 and is now the largest Brazilian multinational in the cosmetics sector. In 2015, the company began to include environmental profit and loss (EP&L) statements in their accounting for the first time. The scope of this methodology was gradually expanded until the company released its first fully integrated profit and loss statement (IP&L) in 2020. Natura's IP&L methodology draws primarily on the Natural Capital Protocol and the Human and Social Capital Protocol of the Capitals Coalition.

### What is being measured

The applied impact measurement system involves a four step process: “actions,” “channels of impact,” “channels of evaluation” and, finally, “impact.” At the first level, all activities along the company's entire value chain are recorded. In the second, each action is assigned to a single or multiple channels of impact, which can be roughly divided into three categories: “human capital” (e.g., impact on salaries), “social capital” (e.g., impact on tax pay-

ments), and “natural capital” (e.g., impact on water use). The third level, channels of evaluation, shows how Natura links various channels of impact with their chosen impact indicator (change in the quality of life). This can be done through one of two evaluation channels: “Direct health/wellness effects” and “economic effects.” Finally, impact is calculated in terms of an impact indicator that denotes a clear impact of each action on the quality of life. The unit of measurement for such a unique impact indicator is based on the disability-adjusted life-year (DALY) or quality-adjusted life-year (QALY) units of measure.

### Objective / results

The results of Natura's integrated profit and loss statement show the firm to have created a positive net social value of approximately BRL18 billion in 2021, driven primarily by the company's social and human capital. Natura's impact on natural capital, however, currently shows a negative balance. Compared to the revenues generated, which amount to about BRL12 billion, the company's social impact is even greater, yielding a social return of 1.5. This means that for every \$1 in Natura sales, the brand provided a net benefit of \$1.5 to the company.

64 Natura &Co 2022 (Website)

	Organizational form	Product	Specifications	Topics	Level of analysis	Indicator consistency	Valuation
Value Balancing Alliance	<p>An alliance of multinational corporations.</p> <p>Targets the creation of procedures for measuring and comparing corporate contributions of value to society, the economy and the environment.</p> <p>Supported by the big 4 auditing firms.</p>	A methodology that is manifest in impact statements regarding the broader implications of corporate activity, environmental impacts and socioeconomic indicators.	<p>Seeks to advance harmonization and standardization in areas such as: defining topics, impact pathways and data sources.</p> <p>Also aims to reveal limitations/show where standardization not yet possible.</p>	<p>Includes environmental and socioeconomic topics.</p> <p>Impact pathways available for selected topics.</p>	<p>Users are advised to include all relevant parts of the value chain in their analysis.</p> <p>This includes their own direct operations as well as upstream and downstream activities.</p>	<p>The VBA is working on standardizing indicators.</p> <p>They aim to avoid topic and indicator offsets in the calculation.</p>	<p>Focus on monetary valuation.</p> <p>Measure impact drivers → measure change → evaluate impact.</p>

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Table 3 Brief description of the Value Balancing Alliance’s (VBA) IMV approach (Source: Authors)

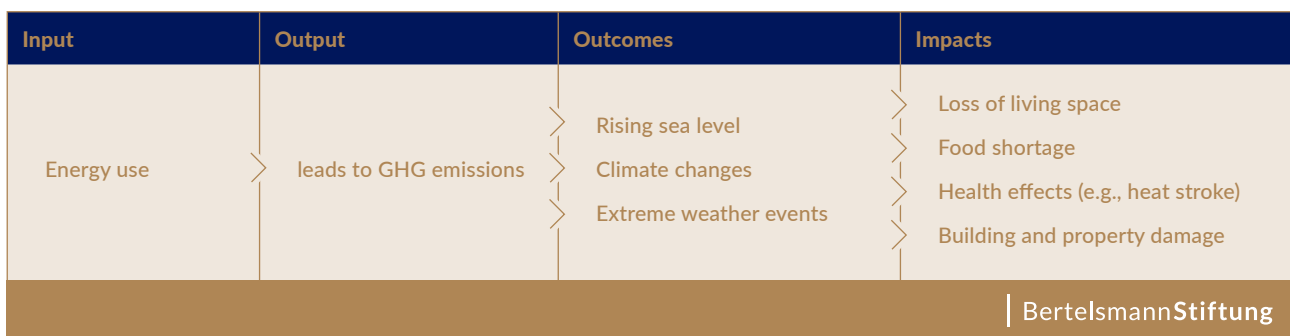
### Value Balancing Alliance (VBA)

“ Only when companies take responsibility for the impact of their actions on people and the environment can we bring about real change toward sustainability. This means comprehensively rethinking the way we achieve, measure and value business success across all sectors, the political sphere and society.”

Value Balancing Alliance<sup>65</sup>

The Value Balancing Alliance (VBA) is an alliance of large multinational companies. It is developing a methodology for measuring, comparing and communicating companies’ contributions to societal value, the economy and the environment. In doing so, the VBA is working with the concept of *impact pathways*. Using this path metaphor allows organizations to use analyses that trace the effects of specific corporate activities and reveal their broader implications for society. The pathways describe the path that leads from *input* and *output* though *outcome* to *impact*. At the end of the path is the *impact valuation*.

65 Value Balancing Alliance 2022b (Website)



BertelsmannStiftung

Figure 3 Examples of an impact chain according to VBA (Source: VBA Environmental Impact Statement)

As an example, consider a company's energy consumption. The energy used by the company is an *input*. This is associated with an output in the form of greenhouse gas emissions. These lead to a number of *outcomes* such as changes in the climate, rising sea levels and extreme weather events. These results in turn produce certain *impacts* or effects on society, such as building and property damage deriving from extreme weather events, health risks, loss of usable land area and food shortages.<sup>66</sup>

The VBA describes such impact chains for a number of specific environmental factors and selected social factors. The assessment methodologies of environmental factors such as climate impacts of GHG emissions are more mature than the impacts of business activities on biodiversity, based on current research. In addition, the methodology on environmental factors shows greater maturity than that of social factors.<sup>67</sup>

For the quantification and monetary valuation of impacts, the VBA suggests first measuring impact drivers, such as GHG emissions, then determining the changes in the state of social or environmental capital, and subsequently valuing the impact.<sup>68</sup>

66 Value Balancing Alliance 2021 a.

67 Verbücheln 2022 (Interview).

68 Value Balancing Alliance (2021 a)

In this valuation step, impacts are translated into monetary data – that is, a financial value is attributed to them. That step is expected to help company executives process the information more effectively. This in turn is intended to improve decision-making within organizations. If a company has information on its environmental and social capital, it can conduct analyses that extend beyond the issue of financial capital. This allows it to reduce risks to the environment, society and the company itself, and consequently increase its contribution of value. The VBA is developing its methodology for this purpose. It will then be piloted by its members in order to test its feasibility and relevance.<sup>69</sup>

The VBA is developing frameworks and methodologies aimed at standardizing IMV methodology and its indicators, thus promoting comparability. To this end, the organization also participates in various projects with partners such as Transparent and BIO-MOD. This effort to standardize can be seen in the group's topic definitions, *impact pathways*, assessment approaches, data sources and modeling rules. The VBA texts are organized by topic; in the environmental sector, for example, these include the categories of greenhouse gas emissions, other air emissions, water consumption, water pollution, land use and waste. The documentation on these

69 Verbücheln 2022 (Interview).

## MODELING TECHNIQUES

**Social cost of carbon (SCC) models:** SCC models seek to create estimates of the economic damage that results from each additional ton of CO<sub>2</sub> in the atmosphere. This is then expressed in monetary terms.

**Environmentally extended input-output models (EEIOs):** EEIOs combine data on the environmental effects of various economic sectors with traditional input-output tables that depict aggregate exchanges between sectors in terms of volume or value.

**Productivity models:** Impacts can be calculated based on the efficiency of production at various locations using different technologies.



topics specifies the type of data to be used and identifies all relevant parts of the supply chain (meaning upstream, own operations and downstream). In the case of activities carried out by the company itself, the documentation primarily references measurement methods, whereas elsewhere in the supply chain, it more often specifies modeling techniques.<sup>70</sup>

In addition, the VBA describes the value-to-society perspective, and is developing a *value-to-business* perspective. Calculations are currently limited to the value-to-society approach. For the quantification and monetary valuation of impacts, the VBA suggests first measuring impact drivers such as greenhouse gas emissions, then analyzing changes in the state of social or environmental capital, and then finally using this information to assign monetary value to the impact.<sup>71</sup>

<sup>70</sup> Op. cit.

<sup>71</sup> Verbücheln 2022 (Interview); Value Balancing Alliance 2021 a.

## The Value Balancing Alliance (VBA) model in practice

**Company:** BASF SE

**Sector:** Chemical company

**Practice has been applied since:** 2020

**IMV APPROACHES  
APPLIED**

“ **Piloting the VBA methodology allows us to apply it directly in practice. By sharing our feedback, we contribute to the development of an applicable global standard for holistic performance measurement and sustainability accounting.**”

(Alexander Fiedler, Sustainability Reporting Analytics & Performance Management)<sup>72</sup>

### History

BASF has been using a value-to-society approach to measure the impact of economic, social and environmental aspects of its activities since 2013. Together with 10 other companies from seven industry sectors, the company piloted in 2020 the newly developed, expanded Value Balancing Alliance approach.

### What is measured

By applying a value-to-society approach, BASF aims to map both the positive and negative impacts of the company's activities in three areas:

the economy, the environment and society.

Measurement involves using indicators to track various issues relevant to each area or impact category. These include, profit, wages, GDP contributions and taxes (economic), health, safety and training (social), and greenhouse gas emissions, water consumption, land use, air/water pollution, and production (environmental).

Determining which impact categories are to be included in BASF's value-to-society approach

is based on a combination of materiality to the chemical company's business model, the availability of reliable data and appropriate methodologies, as well as the practicality and feasibility of the calculation. The VBA's pilot approach offers BASF an opportunity to further standardize this procedure. Here, impacts in the individual impact categories are to be evaluated for each company activity along the entire supply chain, the company's own operations and the production processes in customer industries.

### Objective / Outcomes

Piloting the VBA approach has been a complete success for BASF. The VBA aims to jointly develop a standardized methodology over the next three years with additional companies that will enable them to present their economic, social and environmental value contributions in ways that allow them to be compared with the performance of other companies.

<sup>72</sup> Value Balancing Alliance 2021 c.

## Harvard Business School Impact-Weighted Accounts Initiative

“ If investors believe that larger environmental intensity might be a risk for the company, because of regulatory, customer or investor future actions, then all else equal, firms with larger negative environmental intensity would trade at lower valuation multiples.”  
(George Serafeim and Katie Trinh, Harvard Business School)<sup>73</sup>

The Impact-Weighted Accounts Initiative (IWAI), created by the Harvard Business School (HBS), expands corporate accounting to include a company’s positive and negative impacts on the environment and society.<sup>74</sup> To this end, the IWAI has developed a set of sector- and issue-specific frameworks that detail methods for measuring and assessing impact. For example, there are separate frameworks for the pharmaceutical industry and for the oil and gas industry.

73 Freiberg et al. 2020b: 23.

74 Serafeim, Zochowski and Downing 2019.

IWAI has developed frameworks on various topics related to the environment and society. The HBS places a particular focus on the product perspective because other approaches often fail to incorporate downstream activities in full.<sup>75</sup> Therefore, IWAI provides both a sector-independent overview-type framework and sector-specific frameworks, such as *Accounting for Product Impact in the Airlines Industry* and *Accounting for Product Impact in the Consumer-Packaged Foods Industry*. These provide guidance on specifically how companies can effect measurements in the downstream environment with regard to factors such as product duration, recyclability, accessibility and quality. The documents also address issues such as the costs associated with a company’s water use and the impact of employment practices.<sup>76</sup>

For each of the frameworks, users are asked to include topics in the measurement that extend beyond the topics cited in the documentation to the extent they appear relevant from the perspective of their own companies. The core of the frameworks is the

75 Freiberg et al. 2020 b.

76 Op. cit.

	Organizational form	Product	Specifications	Topics	Level of analysis	Indicator consistency	Valuation
Impact Weighted Accounts Project	The Impact Weighted Accounts Initiative is a Harvard Business School project.  Advocates for financial reporting that reflects a company’s financial, social and environmental performance.	A methodology that determines a company’s overall value to society through its impact.	Sector- and industry-specific frameworks that detail assessment pathways.  Example: calculating the impacts of pharmaceutical industry products.	Environmental and social issues.  Emphasizes product impact in terms of downstream analyses, employees and the environment.	Covers the three levels of analysis, as well as their own Product Impact Weighted Accounts.  Specific focus on downstream activities.	Procedures are standardized within each framework.  Each framework has a different theme and is structured differently.	Societal and environmental impacts are calculated in monetary terms within each framework and pilot project.

Table 4 Brief description of the IMV approach used by the Impact-Weighted Accounts Initiative (Source: Authors)

monetary valuation process. The monetary impact is determined for each specific sector and selected topic.<sup>77</sup>

One example is product impact within the pharmaceutical industry.<sup>78</sup> Here, relevant factors such as accessibility (affordability) for the product's users, quality, and recyclability are first determined, and then their impact is calculated. All these factors influence the real societal impact of the product. Affordability in particular influences potential impact. For example, a U.S. study published in 2020<sup>79</sup> found that increases in the price of insulin led to reductions in dosing, and ultimately to poorer health outcomes among diabetic patients.<sup>80</sup>

To assess the affordability of a diabetic drug in monetary terms, the IWAI first compares two prices: The price set by a company for the drug, as well as the average price of alternative treatments or comparable drugs from other providers. The difference between the two prices is then multiplied by the number of people reached. The result expresses in monetary terms the value of the product's impact with regard to its affordability. Thus, the particular product may contribute positively or negatively to the affordability of insulin, for example. The result derived from the IMV analysis can then be used for internal decisions and company comparisons, as well as for standards-setting and legislative procedures.

The IWAI methodology has already been piloted within selected companies such as Blackrock, for example. In doing so, these firms make use of various techniques and procedures to perform the monetary valuation, such as *cost-based*, *revealed preference* or *stated preference techniques* (see [section 3.2](#)). The IWAI is currently working closely

with the Value Balancing Alliance to consolidate methodologies where possible.<sup>81</sup>

77 Serafeim et al. 2020.

78 Tseng et al. 2020.

79 Op. cit.

80 Op. cit.

81 Verbücheln 2022 (Interview).

## IWAI – Impact-weighted accounts in practice

**Company:** Acciona

**Sector:** Infrastructure and renewable energy

**Practice applied since:** 2020

**“ In Acciona we implement our business model based on comprehensive and transversal solutions that generate positive impacts on people and the planet.”**

(Acciona 2021 Integrated Annual Report)<sup>82</sup>

### History

Acciona decided to participate in the Harvard Business School’s Impact-Weighted Accounts Initiative in 2020, and began an initial pilot project designed to place a monetary value on the company’s externalities. In 2021, this pilot was extended to the group and country level, with the goal of calculating and assigning monetary value to the company’s social and environmental externalities.

### What is being measured

Here, the externalized social effects were calculated using the Harvard method, while the external environmental effects were calculated using various monetarization factors from the Environmental Prices Handbook (EU-28 version) and other true pricing references.

The external effects considered in calculating the value of the impacts generated include: “quality of wages and salaries,” “equality of opportunity between male and female employees,” “workforce diversity,” “local job creation,” “greenhouse gas emissions,” “water consumption and production,” “waste generation,” “impact on biohabitats,” and “fiscal impact.”

### Objective / results

Based on these calculations, Acciona assumes that the company’s activities generates direct benefits of almost €3 billion annually, when considering impacts translated into monetary values. This added value, the company says, comes primarily from the quality of wages and salaries paid, greenhouse gas emissions avoided, water management (desalination, treatment and purification), and the economic contribution to society through the payment of taxes.

Acciona executives have said the pilot exercise was so useful in illustrating both the magnitude and sources of impact that the company will in the future incorporate impact-weighted accounts into all investment decisions, both to proactively manage risk and to identify opportunities for better stakeholder alignment.

82 Acciona 2021 (Website).

## The QuartaVista methodology

“ We ask this very question: how does what a company does relate to where we want to go, that is, to this corridor of sustainable development?”

(Jenny Lay-Kumar, Regionalwert AG/QuartaVista)<sup>83</sup>

QuartaVista is a project that was carried out from 2018 through the end of 2021 by Regionalwert AG Freiburg, SAP and five additional project partners. It was funded by the German Federal Ministry for Labor and Social Affairs (BMAS) as part of the New Quality of Work Initiative (INQA), and received professional support from the German Federal Institute for Occupational Safety and Health (BAuA). The INQA provides so-called innovation spaces in which new ideas can be tested and an exchange of knowledge and experiences can take place. This program allowed new approaches and processes to be tested within the framework of the QuartaVista project, and helped participants ready these activities for practical use along with

four partners from the food industry. As a result, QuartaVista now offers a “navigation system” for value-oriented companies that is structured along four perspectives or subject areas: ecology, knowledge, society and finance.<sup>84</sup>

The approach focuses strongly on describing a company’s specific sustainability performance, and asks how this can be included in accounting processes. Sustainability performance is derived in a way analogous to the conceptual understanding of operational “performance” in the field of business administration. This makes the approach compatible with established business management methods such as income statements, balance sheets and key performance indicators, all of which can be used to depict corporate performance and successes, for example. These classic methods are supplemented by the QuartaVista approach by making blind spots such as company performance and risks visible in the environmental and social dimensions and integrating the value contributions into the company balance sheet.<sup>85</sup>

83 Freiberg et al. 2020 b.

84 Project QuartaVista 2021.

85 Walkiewicz, Lay-Kumar and Herzig 2021.

	Organizational form	Product	Specifications	Topics	Level of analysis	Indicator consistency	Valuation
QuartaVista	<p>Quarta Vista is a project involving seven project partners, including SAP and Regionalwert AG Freiburg.</p> <p>The project ran from 2018 to the end of 2021.</p>	<p>A methodology and associated dashboard prototype were developed.</p> <p>For the purposes of this publication, we address only the methodology.</p>	<p>QuartaVista's impact mechanisms rely on the voluntary involvement of companies.</p> <p>Works primarily with cutting-edge companies.</p>	<p>Draws on four perspectives: ecology, knowledge, society and finance.</p>	<p>Three levels of analysis are addressed explicitly: upstream, downstream and direct operations.</p>	<p>KPIs, which imply the fulfillment of set targets, are a key concept.</p> <p>Three types of KPIs: mandatory, optional and voluntary.</p>	<p>Monetary values are assigned to a company's KPIs.</p> <p>Balance sheets are expanded to include negative and positive externalities.</p>

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Table 5 Brief description of QuartaVista's IMV approach (Source: Authors)

**“ Our understanding is not so much to add sustainability performance, but to remove blind spots in the income statement. After all, the performance or non-performance [sic] is already happening in the companies now and can be proven.”**

(Jenny Lay-Kumar, Regionalwert AG/  
QuartaVista)<sup>86</sup>

Use of the QuartaVista method can be explained via a series of steps. The first step is to identify key performance indicators (KPIs) in the areas of society, ecology and knowledge that are relevant to achieving the company’s goals. All of QuartaVista’s partners in the project addressed the issues of quality of work, knowledge retention and organizational carbon footprint. KPIs in the area of knowledge retention include the share of apprentices in the company’s workforce (under the German vocational education work-placement system), the share of employees pursuing further education and the employee turnover rate, for example. These cover the aspects of knowledge building, knowledge stability and knowledge enhancement.

The process is described below using the “share of apprentices in the workforce” KPI as an example. This describes the proportion of apprentices in the company’s total workforce as a percentage: One trainee per 50 employees corresponds to 2%, for example. Training and hiring skilled workers creates added value for the company and counteracts the risk of knowledge loss.<sup>87</sup>

The next step is to describe the effort and expense associated with each KPI. In the case of the apprentice share, this includes the wages, the hours spent in training and the trainers’ salaries for all apprentices. These values must then be interpreted. This can be done with reference to the United

<sup>86</sup> Lay-Kumar 2021 (Interview).

<sup>87</sup> Project QuartaVista 2021.

Nations Sustainable Development Goals (SDGs), models such as the planetary boundaries, or other benchmarks or empirical comparative values. In the case of the apprentices, the nationwide industry-specific average is used as a benchmark. This process produces a kind of traffic light system that ranks companies in the green (positive), yellow (average) or red (risky, negative) range. In each case, the assigned reference values are depicted as percentages. For example, depending on the industry, a workforce apprentice share of less than 3.5% might be in the red zone, while more than 7% would be in the green zone.

The final step is to assign a monetary value to the KPIs. In our example, the expenses incurred for the apprentices – in this case, their wages – serve as the basis. If a company’s apprentice share is in the red zone, below the identified average, the value expressed in monetary terms represents the costs that the company would have to incur to reach a neutral point. The fact that the costs associated with the apprentices are offset by the work they do is also taken into account here. Positive values can rise as high as the predetermined ideal value, but do not increase any further, since at least for the company itself, there is no additional added value after that point. These values are then recorded on the balance sheet as intangible assets, and can be used in areas such as accounting, risk and performance assessment, and reporting, for example.

In general, QuartaVista’s impact mechanisms rely on the voluntary involvement of companies. The analysis levels encompass all three levels – that is, *upstream*, the company’s *own activities (direct operations)* and *downstream*. The QuartaVista project’s final report accordingly addresses the supply chain, the company’s own activities and the downstream level, referred to here as “sustainability at the end of the product lifetime.” QuartaVista works with a selection of KPIs. These always relate to a preestablished goal, and are used to measure progress toward achieving that goal. QuartaVista differentiates



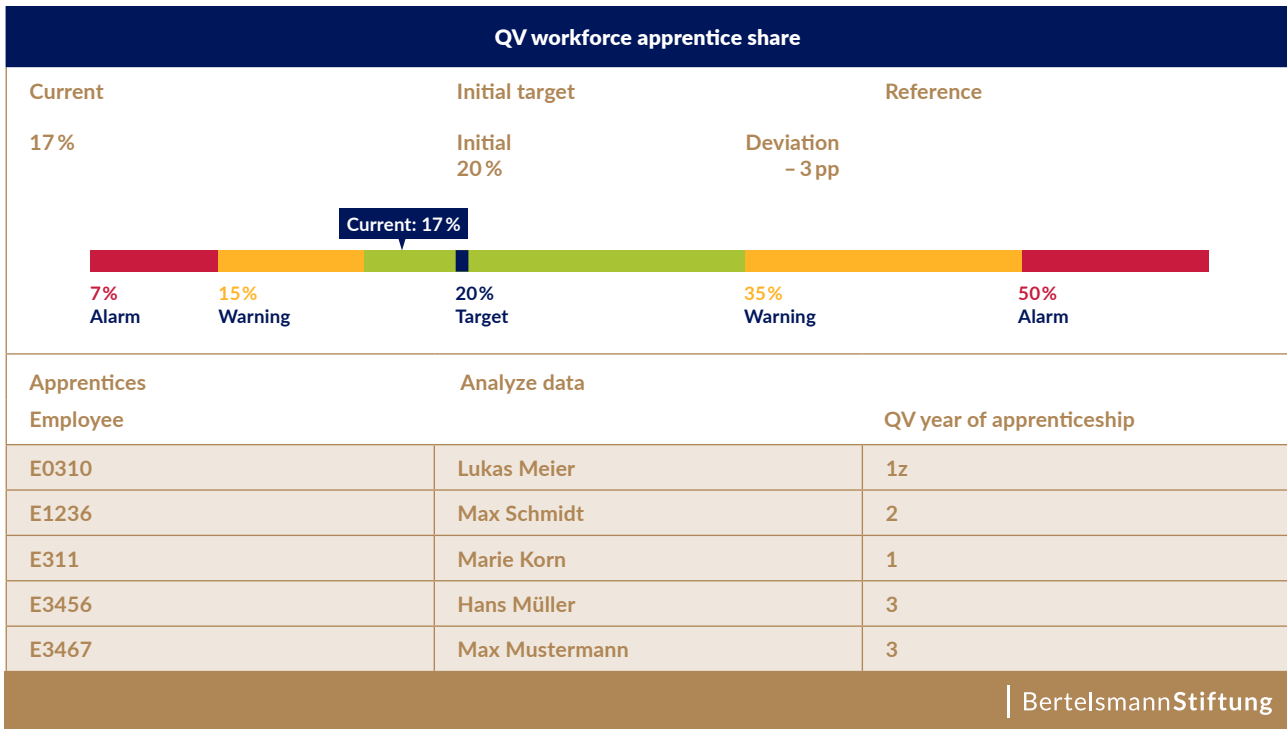


Figure 4 Overview, QuartaVista workforce apprentice share (Source: QuartaVista, n. d.)

between required KPIs, which are obligatory for all companies; elective KPIs, from among which a company must select a certain number; and voluntary KPIs, which are available in the software tool for further internal use.<sup>88</sup>

In the process step in which monetary value is assigned, QuartaVista focuses on internalizing negative externalities. Much as in the Impact-Weighted Accounts model, QuartaVista extends the accounting process to include negative and positive externalities. Companies' ecological and socioeconomic performance and risks are thus rendered visible, and can be measured using monetary values.

The issue of subjectivity plays an important role in this context. A number of questions must be answered in each case: For example, what actually constitutes good performance? How are threshold values to be set? And how should each aspect of

performance be valued? In this area, there is a lack of standards from standard-setting bodies.

The workforce apprentice share example used above illustrates this lack of standards. Well-trained employees are important for any company to thrive, yet many sectors suffer from a shortage of skilled workers.<sup>89</sup> QuartaVista raises the question of how many employees a company would need to train in a specific industry, of a specific size, or in a specific state to have a positive impact (Figure 4). However, there is no recommendation on an ideal trainee ratio with which to weigh and evaluate the results from the pilot projects. Quarta Vista only drew on the national average in the industry and rated a result above the average as good performance, and a result below as not so good performance. Furthermore, in addition to the national average, recommendations from both practitioners and academics were used and the results were discussed

88 Lay-Kumar 2021 (Interview).

89 Institut für Bildungsforschung Wirtschaft 2018.

Here QuartaVista decided to use the reference value of three years, with the argument that the knowledge in the industry used renews itself after about three years. Although the discussion was held with around 150 people, Jenny Lay-Kumar nevertheless points to the lack of existing social value formation:

**“ I think that with the vast majority of topics, that’s where we need to work together on those standards as a scientific and broader community. And that has, for the most part, just not happened yet. Again, it is also important to me that we make initial suggestions with these profiles here. They can all be much better. I’m sure they will be in 10 years. We’re just the first in this area to have thrown this particular stone in the water.”**

Jenny Lay-Kumar, 2022<sup>90</sup>

In addition to the methodology, a dashboard prototype was developed to enable the project partners’ impact to be visualized. This uses a traffic light system to determine whether the relative strength of a company’s performance falls into the red, yellow or green zone. More detailed information on these subjects is available on QuartaVista’s website.

90 Lay-Kumar 2021 (Interview).

## The QuartaVista methodology in practice

**Company:** BODAN

**Sector:** Retail sale of organic products

**Practice has been applied since:** 2018

**IMV APPROACHES  
APPLIED**

**“ If the intangible benefits of organic farming such as soil and water conservation are included in the calculation, these products are already cheaper than conventionally produced products.”**

(Sascha Damaschun, BODAN CEO)<sup>91</sup>

### History

As one of the early companies in the Economy for the Common Good Economy (GWÖ) movement, BODAN has regularly published a common good balance sheet since 2011, and also introduced a comprehensive environmental management system in 2016. From 2018 to 2021, BODAN was a partner in the QuartaVista innovation project.

### What is being measured

By using the QuartaVista methodology, BODAN adds three additional dimensions to its accounting processes in addition to the traditional financial dimension: “consequences for the environment,” “consequences for social structures” and “consequences for societal knowledge.” Gains and losses are quantified and documented in balance-sheet form in all four dimensions. This process passes through four stages of calculation: In step one, all ESG-relevant corporate activities are recorded, using accounting documents as a basis. In step two, predefined KPIs are used for the purposes of evaluation and interpretation. Step three then assigns a monetary value to the company’s performance and risks, with the extended balance sheet reflecting these gains and losses ultimately prepared

in step four. However, since QuartaVista is an innovation project and not a completed program, there is no further application at the end of this process. Rather, the result is a prototypical approach to expanding the traditional balance sheet: Examples are used to show how sustainable value creation can be integrated into the accounting process. QuartaVista deliberately avoided identifying a specific piece of software that should be used to implement the solution.

### Objective / results

The application of the QuartaVista methodology and the resulting expanded balance sheet allows BODAN to record investments in biodiversity conservation as an asset. For example, BODAN invests in organic plant breeding and sustainable seed development. In the so-called QuartaVista dashboard, BODAN can record these investments of around €70,000 in the years 2014 to 2019 not only on the debit side, but also on the credit side.

<sup>91</sup> BODAN 2021 (Website).

	Organizational form	Product	Specifications	Topics	Level of analyses	Standardized indicators	Valuation
<b>Capitals Coalition</b>	Network/ Organization	Framework	Proposals				< € <sup>**</sup> >
<b>Value Balancing Alliance</b>	Organization	Framework/ Methodology	Prescribed topic areas	*			< € >
<b>Impact-Weighted Accounts Initiative</b>	Project	Methodology	Sector-specific				< € >
<b>Quarta-Vista</b>	Project	Methodology	Firm-specific				< € >
<p>The chart compares the listed categories on the basis of each organization's or project's product.</p> <p>* Transparency: This symbol refers to the fact that the respective approach only partially addresses the noted aspect.</p> <p>** Although the Capitals Coalition has incorporated monetization as a form of valuation into their protocols, the organization does not specifically advocate this.</p>				<p> Social and ecological factors are taken into account.</p> <p> Upstream, downstream and direct operations are considered.</p> <p> Indicators are either conditionally specified or standardized.</p> <p> Monetization is proposed as a valuation tool. Left-pointing arrow: value-to-business perspective, right-pointing arrow: value-to-society perspective is considered.</p> <p></p>			

**Table 6** Overview of the compared IMV approaches (Source: Authors)

#### 4.4 Comparison of approaches

Although there are important distinctions between the terms, points of application and perspectives held by the organizations and projects considered here, they all share the common goal of making social and environmental factors a relevant part of decision-making in management. **Table 6** provides a comparative overview of each approach featured here on the basis of six categories. The interviews conducted with experts as well as publications describing the procedures used to measure and evaluate individual issues underlie the information summarized in the table.

The first key category is the *organizational form*. The Capitals Coalition and the Value Balancing Alliance are stand-alone organizations, whereas QuartaVista is a project-driven coalition of seven stakeholders. The Impact-Weighted Accounts Initiative is a Harvard Business School project.

Overall, a range of products are put forward by the various approaches. In addition to providing guidance on the issue and information regarding other initiatives, the Capitals Coalition offers its two key protocols.<sup>92</sup> The *Social and Human Protocol* and the *Natural Protocol* serve primarily as aids to mainstreaming the consideration of social and

92 Nicholles 2021 (Interview).

environmental factors in decision-making.<sup>93</sup> The Value Balancing Alliance also offers a set of methods to use in placing a monetary value on business impacts.<sup>94</sup> The Impact-Weighted Accounts Initiative, for its part, provides a set of sector- and industry-specific frameworks, each with a consistent methodology.<sup>95</sup> QuartaVista is presenting its proprietary methodology in a final report and has also developed a dashboard prototype.<sup>96</sup>

Each approach features a different set of *specifications*. Their frameworks can therefore be used both in analyzing a firm's overall corporate impact but also, for example, when deciding between two different locations for use in a specific activity. In order to fully assess both positive and negative impacts, companies need to follow the nine steps described in the approach. However, there is some flexibility at each step in terms of the individual issues, indicators and types of calculation to select from. The VBA approach includes environmental, social and economic indicators that should be applied to all companies, regardless of industry. Environmental indicators include emissions, water consumption, and land use.<sup>97</sup> These include greenhouse gas emissions, water consumption and land use. Aside from this, the approach, like the Capitals Coalition, works with examples of specific topics and cites potentially relevant opportunities. Both organizations are working together on the *Transparent* project, which aims to standardize approaches to selected environmental issues.<sup>98</sup> Impact-Weighted Accounts are a set of sector-, industry- and issue-specific frameworks.<sup>99</sup> Each framework refers to a uniform set of themes

and indicators.<sup>100</sup> We see a similar situation at QuartaVista: Within each range of topics addressed, QuartaVista remains consistent and, in the absence of binding legislative specifications and regulations, acts as an independent "standard-setting" body.<sup>101</sup> The apprentice share example discussed above illustrates this nicely: There is no basis for determining how many trainees would yield a positive or negative impact in an organization. While there are regional, statewide or industry-wide averages that could be used as a benchmark, there are no standards or specifications that can be used to determine what percentage of apprentices would have either a positive or negative impact. In the absence of such standards, both QuartaVista and IWAI draw on their own assessments.

**“ As long as we continue to face so many ‘gaps,’ (...) we offer an approach that is at least consistent.”**

(Jenny Lay-Kumar, Regionalwert AG/QuartaVista)<sup>102</sup>

In each approach, the *topic areas* addressed can all be classified as either environmental or social issues. There are differences in terms of their individual focus as well as the level of detail into which they go. For example, the Value Balancing Alliance addresses more environmental than social issues in its approach,<sup>103</sup> whereas the Impact-Weighted Accounts model covers things like employees and product impact more thoroughly.<sup>104</sup> The Capitals Coalition clearly divides its protocols into *Natural Capital* and *Human Capital*, while QuartaVista covers the four dimensions of social structures, societal knowledge, environment and finance.

93 Natural Capital Coalition 2016.

94 Value Balancing Alliance 2021 a.

95 Freiberg et al. 2020.

96 Natural Capitals Coalition 2016, Project QuartaVista 2021; Freiberg et al. 2020 b; Value Balancing Alliance 2021 a.

97 Value Balancing Alliance 2021 a.

98 Nicholles 2021 (Interview).

99 Freiberg et al. 2020.

100 Op. cit.

101 Natural Capital Coalition 2016; Value Balancing Alliance 2021 a.

102 Lay-Kumar 2021 (Interview).

103 Verbücheln 2022 (Interview).

104 Freiberg et al. 2020 b.

The level of analysis (value-chain boundary) in each approach incorporates all three levels (upstream, own activities/direct operations and downstream) but to varying degrees. The Capitals Coalition and the Value Balancing Alliance identify the impacts of specific activities in certain stages within the value chain, depending on the topic or issue to be addressed.<sup>105</sup> For example, the topic of recycling becomes particularly relevant as a downstream instrument. The product accounts applied through the Impact-Weighted Accounts model focus heavily on downstream activities. Both QuartaVista and the Impact-Weighted Accounts Initiative provide standardized indicators or KPIs, each related to a specific goal. A distinction is made between mandatory, optional and voluntary KPIs.<sup>106</sup> The Impact-Weighted Accounts Initiative also draws on specific cases in order to explain why a particular indicator was applied.<sup>107</sup>

When it comes to valuation, it matters whether impacts are evaluated in qualitative or quantitative terms, or whether a monetary value is assigned to them. Each of the approaches featured here assign monetary value to impacts in terms of monetary units. This can involve, for example, asking what are the costs to society of “sealing” one square kilometer of soil. Similarly, it matters whether the approach follows the value-to-business or the

value-to-society perspective. The Capitals Coalition is vigorous in addressing both perspectives. The VBA approach has a stronger focus on the value-to-society perspective. The value-to-business perspective is currently being developed.<sup>108</sup> QuartaVista and the Impact-Weighted Accounts Initiative internalize negative externalities and add social and environmental factors to assessments of corporate performance. While IWAI takes on more sectors (e.g., pharmaceuticals and oil), QuartaVista focuses on social and environmental impacts, which it has already begun to integrate into its balance sheets through its work with selected partners (e.g., small organic farms).

## 4.5 Related approaches

In [section 4.1](#), we outlined the IMV landscape and introduced its relevant actors. In the following, we briefly discuss additional, related frameworks, each of which has the potential to deepen the approaches presented here in greater detail.

### Life cycle analysis (LCA)

Life cycle analysis (LCA) is a management tool for use in quantifying the environmental impact of a product over its entire life cycle.<sup>109</sup> It is used to analyze the environmental impact of products

105 Capitals Coalition 2019; Value Balancing Alliance 2021 a.

106 Project QuartaVista 2021.

107 Freiberg et al. 2020 b.

108 Verbücheln 2022 (Interview).

109 Natural Capital Coalition 2016.

## INNOVATORS

**Fairphone** draws on sustainable sources for its materials, exercises transparency in revealing its supply chain, and designs products so that they have a longer lifespan by making it easier to replace individual parts.

**Planet A** promotes collaboration between scientists and companies. Knowing more should enable companies to make better decisions.

and services from their creation to their disposal (end-of-life).<sup>110</sup> ISO 14040 provides a standard for LCA. Life Cycle Impact Assessments (LCIA) provide databases that help with the impact estimates of products, their individual components and processes. For example, the Capitals Coalition draws on these databases to acquire secondary data in measuring impact drivers and dependencies for organizations.<sup>111</sup>

### **Doughnut economics**

Among experts, corporate management or corporate governance and organizational structures are increasingly identified as key factors in global inequalities.<sup>112</sup> The Doughnut Economics Action Lab (DEAL) therefore identifies *governance* as one of the five key issue areas involved with transforming companies from an *Extractive Enterprise* to a *Generative Enterprise*. For DEAL, this includes policies and practices as well as corporate culture and standards.<sup>113</sup> Looking ahead, it seems plausible that these issues could be incorporated into the further development of IMV approaches as relevant parameters.

### **True Cost Initiative**

The true cost approach develops models that allow for the “true cost” of products to be reflected in their prices. The true cost approach demonstrates how changing the price structure of a product can facilitate change processes within a company. The approach focuses on the “value-to-business” perspective by attaching a cost to externalities. Particularly in agriculture, there are already studies underway that aim to determine, communicate and manage these “true costs.” Several larger companies are piloting and testing the approach.<sup>114</sup>

110 Bentrup et al. 2004.

111 Natural Capital Coalition 2016.

112 Oxfam 2017; Oxfam and DCED 2016.

113 Doughnut Economics Action Lab 2020.

114 True Cost Initiative 2022; Pieper, Michalke and Gaugler 2020.



Various factors make it difficult for companies to apply IMV, and to integrate environmental and social considerations as key elements in their decision-making. In addition, existing IMV approaches contain conceptual weaknesses that should be reviewed as the frameworks are developed further.

## 5.1 Next steps and further practical development

### Academic involvement and ethics

The topic of impact measurement and valuation has not yet entered the broader academic discourse. Only a few academic institutions address the issue today. This in turn means that the various methodologies, which in many cases were developed by consulting firms, may not as yet have undergone a process of peer review. According to Laura Edinger-Schons,<sup>115</sup> this circumstance has at least one advantage, in that the field's comparative isolation has allowed it to develop very quickly, with some organizations having already conducted pilot projects. Nevertheless, as an urgent next step, the various methodologies must be legitimized – a task for which the involvement of the academic community is indispensable.<sup>116</sup>

The same applies with regard to ethical issues, which to date have received too little attention. There is a lack of critical discourse especially with

regard to the assignment of monetary value to social costs. The debate over the pros and cons of putting a price on human life offers a particularly vivid example: In the future, should human lives be routinely included in measurements of the value created and harm inflicted by companies? On the one hand, this creates a parameter for the company that can be assigned a value. On the other, human lives thus become the object of strategic anticipation. In the insurance industry and other sectors, such valuations are already flowing into calculations today. For example, such trade-offs lead to the absence of airbags in the back seats of cars. As calculated by insurance companies, the cost of including these items as a standard feature is higher than the value of the lives lost in the likely number of accidents.<sup>117</sup> Similar (ethically difficult) debates are already taking place in the environmental context, for example regarding the assignment of a price to nature. There is also discussion about whether and to what extent market norms should be incorporated into other areas of life.<sup>118</sup> An additional relevant area of research poses the question of what unintended consequences (positive or negative) a system change may bring. To date, little research has been performed in this area.<sup>119</sup>

115 Edinger-Schons 2021 (Interview).

116 Op. cit.

117 Insurance Institute for Highway Safety 2014.

118 Edinger-Schons 2021 (Interview).

119 Stroehle 2021 (Interview).

## Consolidation of approaches

“ If we continue to be divided, it will just be a constant battle of egos over who has the best approach and what companies should use. Then policymakers will not be able to develop regulations.”

Natalie Nicholles<sup>120</sup>

The desire for consolidation was one of the most frequently voiced themes in the interviews conducted for this analysis.<sup>121</sup> According to Judith Stroehle, the IMV field is overcrowded (by actors from the business sector), and is sometimes confusing even for experts.<sup>122</sup> It thus comes as little surprise that the current trend is toward greater consolidation. Simplifying the landscape of offerings and technical procedures would lay the foundation for future standardization and regulation. The announcement made by the International Financial Reporting Standards Foundation (IFRS) in 2021, establishing the International Sustainability Standards Board (ISSB), appears to offer a ray of hope in this regard. Experts hope that initiatives such as the ISSB will accelerate the convergence of knowledge and create a central repository for information on the topic. As Laura Edinger-Schons notes, this would allow IMV users to benefit from synergies and accumulated know-how in the future, as experiences would be shared and the same work would not have to be repeated 50 times. To make this transfer of knowledge possible, a platform will be needed where information can be gathered, collected and standardized. Those in the academic community could use this information for research purposes, and their findings could in turn support policymakers in the development of legislation and regulation.<sup>123</sup>

120 Nicholles 2021 (Interview).

121 Edinger-Schons 2022 a.

122 Ströhle 2021 (Interview).

123 Ströhle 2021 (Interview).

## Standardization and comparability

“ Standards need to be developed for use in bookkeeping and accounting processes. These will allow for comparability, both internally across fiscal years and externally with other companies in the industry.”

QuartaVista Final Report<sup>124</sup>

Standardization is crucial both for the internal management of impacts and for reporting – after all, if every company were to measure different things, the *impacts* would not be comparable.<sup>125</sup> This was demonstrated in part by QuartaVista’s ultimate decision to develop its own framework following an unsuccessful search for a suitable standard.<sup>126</sup> The European Commission is currently funding two major projects in an effort to drive standardization forward. The first, called Transparent, aims to identify six standardized key areas for the valuation of *natural capital*. The second, called ALIGN, seeks to align measures used to assign valuations to *natural capital* with the demands of biodiversity.<sup>127</sup>

On an international level, the work of the ISSB is also fundamental,<sup>128</sup> as this body will work to define global standards to be established in parallel with its accounting standards.<sup>129</sup> This will help companies that use IMV or are thinking about performing such an assessment; as they explore the issue of comparability, this work will assist them in choosing the right valuations and indicators.<sup>130</sup> Developing an open catalogue for this purpose<sup>131</sup> would mark an important step toward creating a system in which IMV is obligatory for all companies.

124 Project QuartaVista 2021: 146

125 Verbücheln 2022 (Interview).

126 Lay-Kumar 2021 (Interview).

127 Nicholles 2021 (Interview).

128 Wilson 2022 (Interview).

129 International Financial Reporting Standards Foundation 2022.

130 Nicholles 2021 (Interview).

131 Op. cit.

## Increasing IMV's impact via regulation

### “ The social market economy must be refounded as a socio-ecological market economy.”

German Federal Ministry for Economic Affairs and Climate Action<sup>132</sup>

In each of the four initiatives examined in detail in this study, the goal is to make social and environmental impacts relevant to companies' business decisions. For this to succeed on a broad scale, the regulatory environment defined at the political level must be updated. Currently, many companies find it difficult to prioritize social and environmental goals, as the legal frameworks governing the markets in which they operate severely limit the opportunities to do so. Even today, companies on the cutting edge of sustainability suffer from competitive disadvantages compared with those that do not act in an environmentally sustainable or socially just way. This is because most social and ecological costs have no impact on product prices. These costs are externalized, meaning they are (involuntarily) borne by society. For this reason, a different legal framework is needed that makes prioritizing social and environmental goals a standard activity for companies. In order to develop regulations that meet the future's needs, dialogue between IMV initiatives, leading companies and policymakers should be significantly intensified. This would allow existing knowledge and the lessons learned through practical experience to be incorporated into future regulations.<sup>133</sup>

### Risk of greenwashing

There is often a gap between what companies describe as “net-zero strategies” and what would actually need to be done in order to achieve the net-zero goal. It can be tempting for organizations to communicate their actions and resulting impact

to the outside world in the most positive light possible – particularly given that green products and green brands are currently experiencing an increase in demand.<sup>134</sup> Since there is not yet a standardized methodology for IMV, problems can arise in the course of external communication. There is a risk of *greenwashing* – that is, of glossing over the company's actual effects on the environment and society when making presentations of this kind. IMV methods, by contrast, make it possible to compare and contrast valuations associated with different areas of activity. Thus, harmful environmental impacts might be counterbalanced with a good record on social issues, or vice versa, in order to allow a company to position itself as an entity with a *net positive impact*. For example, a company that pays employees in countries where its products are produced a sum that is below the living wage, but has low greenhouse gas emissions, could potentially present itself as having a positive net balance. According to Judith Stroehle and Natalie Nicholles, this is misleading and nonsensical.<sup>135</sup>

### Application for small and medium-sized enterprises

The development of European regulation will make it increasingly necessary for small and medium-sized enterprises (SMEs) to measure – and as necessary assign monetary value to – the impact of their business activities. The currently valid directive on reporting non-financial indicators (NFRD) applies only to capital-market-oriented companies with more than 500 employees. However, the planned CSRD will apply to around 50,000 companies across Europe. This means that medium-sized companies with more than 250 employees will also have to report on their sustainability, thus taking a first step toward IMV.

132 Bundesministerium für Wirtschaft und Klimaschutz 2022: 10.

133 Nicholles 2021 (Interview).

134 Umweltbundesamt 2021.

135 Stroehle 2021 (Interview).

For SMEs, measuring and evaluating their own impact can be a particular challenge.<sup>136</sup> Ultimately, implementing and monitoring an IMV approach requires resources that are more easily found in larger organizations. However, the field is gradually expanding to include SMEs, some of which are beginning to implement processes of this kind. For such entities, it is critical that IMV be simplified to be efficient and flexible enough for their needs.

## 5.2 Challenges within the methodology

In addition to the challenges associated with the further development of IMV approaches, there are a number of weaknesses and unresolved issues within the methodology itself.

### Limits to impact measurement based on the state of the science

To make accurate measurements and correctly value the impact of corporate activities on the environment and society, analysts must have knowledge regarding certain fundamental natural phenomena. However, this knowledge is constantly evolving. For example, recent findings have expanded our understanding of so-called tipping points, which are reached by further CO<sub>2</sub> emissions, and which can trigger cascade effects drastically amplifying climate change impacts. This knowledge is of critical importance to the assessment of impact.<sup>137</sup> With the scientific knowledge and data available today, it is not possible to fully map the *impact pathways* described by the VBA, for example. For social interactions too, it is enormously difficult to describe such paths in a clear and traceable way. Accordingly, it becomes challenging to assign a monetary valuation. The various approaches will thus have to adapt dynamically to the expansion of scientific capabilities and research findings.

136 Edinger-Schons 2021 (Interview).

137 Kotz, Levermann and Wenz 2022.

### Data

Reliable data is of the utmost importance, whether in order to have confidence in calculations, to conduct the most accurate IMV analyses possible, or to advance the state of current research. Today, significant quantities of important data are not publicly available. Instead, this data is held by companies themselves or by management consultancies, for example.<sup>138</sup> As a result, analysts must often use estimates and modeling techniques as a substitute. This generates lower-quality information, consequently leading to worse decisions for companies, society and the environment. Experts therefore call for policies of greater accessibility, and for the establishment of a central repository for data and research. Future IMV pilot projects could contribute to these goals while additionally enhancing data security. Companies that lack the data to assess their own impact could then draw on this store of data. For example, a company that lacks data on the actual impact of a producer within its supply chain could use the data repository to obtain adequate data on the sector or region involved, and thus develop a better assessment of its own impact within the supply chain.<sup>139</sup> An accessible archive of research results would also help in identifying gaps in the existing research.<sup>140</sup>

### Gaps in analyzing qualitative impact

Previous IMV approaches have focused on quantifiable impact. However, especially in the social arena, there are important impacts that are difficult to quantify. These include effects such as a company's impact on the quality of life of employees, families or people in general; or the impacts produced by violence against, abuses of or inequitable treatment of marginalized groups.<sup>141</sup> However, these aspects should also be considered, as they are just as relevant to a company's societal impact as more easily quantifiable dimensions such as CO<sub>2</sub> emissions.

138 Edinger-Schons 2021 (Interview).

139 Op. cit.

140 Op. cit.

141 Edinger-Schons 2022 a.

Doing so will require the development of new concepts and cross-sectoral expertise; otherwise, there is a risk of distorting the assessment of the impact.

### **Assigning monetary valuations**

Dealing with the monetarization of impacts – that is, the process of assigning monetary valuations to them – continues to raise a number of questions. On the one hand, this step increases the likelihood that IMV will become a relevant factor guiding corporate decisions.<sup>142</sup> Today, sustainability reports are often ignored when it comes to actual decision-making processes, which instead incorporate data only from the finance department.<sup>143</sup> Once translated into monetary units, impact can be included in financial statements, taking a form that is easier for decision-makers accustomed to financial management to understand.<sup>144</sup> At the macroeconomic level, too, there is a growing search for alternatives to gross domestic product (GDP) as a measure of economic performance and as a guidepost for economic policy.<sup>145</sup> Assigning monetary valuation helps to relate traditional economic performance as measured by GDP to the environmental costs generated by economic activity. Applying this consistently at the corporate level would facilitate the emergence of an impact measurement system that was consistent across the micro and macro levels.

On the other hand, assigning monetary valuations to aspects of the environment is controversial within the scientific community.<sup>146</sup> One basic assumption underlying the valuation of nature in this way is that natural capital is fungible.<sup>147</sup> For example, under this assumption, trees could

be replaced by other capital such as oxygen machines. However, since this is not in reality possible, and since it is moreover very important to stop further biodiversity loss in order to prevent a

second major environmental crisis in addition to the climate crisis, this approach quickly reaches its limits here. Similarly, ethical concerns about the monetary valuation of social factors must be considered here, for instance with regard to the pricing of human life.<sup>148</sup> Assigning monetary valuations also makes it easier to offset social factors against environmental factors, thus arriving at a positive overall balance (as described in the “Risk of greenwashing” section).<sup>149</sup>

### **Changes necessary within companies to achieve social and ecological goals**

IMV approaches generally aim at measuring and evaluating impacts in order to make them relevant within corporate decision-making processes. However, comparatively little consideration has been given to the fact that the desired positive impact can be achieved only if the foundations for doing so are created within the company. For example, if shareholders are focused on maximizing profit, they can make it impossible to achieve social and environmental goals. Likewise, there is a need for appropriate corporate governance, a clear corporate purpose and corporate networks that are adapted to social and ecological goals.<sup>150</sup> Achieving the desired goals will be possible only if sufficient attention is paid to these dimensions as well. Thus, simply measuring and assigning value to impact is not enough by itself to provide companies with the information needed to do business in a socially and ecologically sustainable way. Companies additionally need information on how to adapt their corporate governance, financing options and networks.

142 When discussing IMV, this study largely refers to companies. However, the analysis and conclusions also refer to any other organizations and institutions that may also use IMV approaches.

143 Edinger-Schons 2022 a; Ströhle 2021 (Interview).

144 Edinger-Schons 2021 (Interview).

145 Bundesministerium für Wirtschaft und Klimaschutz 2022.

146 Hinterberger, Luks und Schmidt-Bleek 1997.

147 Read and Cato 2014.

148 Edinger-Schons 2021 (Interview).

149 Op. cit.

150 Raworth 2018.

As the threats associated with climate change, the biodiversity crisis and increasing societal polarization grow, organizations everywhere are facing mounting pressures to adapt. The latest report issued by the Intergovernmental Panel on Climate Change (IPCC) underscores the urgent need to take action in order to prevent severe environmental impacts.<sup>151</sup> Companies looking to engage in this kind of transformative change will need a new type of compass that helps them determine whether they are moving in the right direction. This is where IMV approaches can play a key role. However, it is important that professionals in the field work to address existing weaknesses and gaps while cultivating closer dialogue with policymakers to help ensure that regulations are adapted in ways that compel the entire economy – and not just select innovators – to act in ways that align with social and environmental goals.

Together with its partners, the Bertelsmann Stiftung will continue to support and promote the topic of impact measurement and valuation.

151 IPCC 2022.

# Glossary

The following glossary provides an overview of key terms used in this publication.

## **Double materiality**

The concept of double materiality refers to the fact that business activity can have impacts on the environment and thus society (*value-to-society* perspective), and that these impacts bear financial consequences for a company (*value-to-business* perspective). Whereas the former aspect focuses on measuring impacts, the latter focuses on the interactions and interdependencies found between a business model, the environment and society.

## **Framework/Protocol**

A framework is a basic structure around which something can be built. In this text, the term framework usually refers to publications by relevant stakeholders that set out the basic structures of an IMV approach. These frameworks can therefore describe processes, provide guidance and orientation, and they can include tools.

## **Impact**

Impacts are changes that result from a business activity and their outcomes on the environment and society (e.g., human health, ecosystems, flora and fauna).

## **Input**

Input refers to resources such as raw materials or energy that are used to carry out a business activity. Non-financial reporting traditionally involves measuring these variables.

## **Capital – natural capital, social capital, etc.**

Capital refers to those resources and relationships that a business uses in its activities and which are affected by those activities. Previous definitions of capital have not taken into account essential aspects of such resources and relationships that appear to be available for free because they are difficult to monetize. Businesses lack the tools needed to make sense of their complex relationships with nature and society. Dependencies in these relationships may seem logical, but they are also difficult to grasp. Concepts such as natural capital, social capital, human capital or relationship capital help facilitate a clear understanding of such dependencies. Natural capital, for example, refers to the stock of renewable and non-renewable resources (e.g., plants, animals, water, air, soils, minerals, as well as gene pools and ecosystems) that provide various “services” to society and the economy through the ways in which they interact with each other. A natural capital assessment includes a qualitative, quantitative and monetary stock-taking of the interactions, dependencies and impacts that exist between businesses and the environment.

## **Key performance indicators (KPIs)**

KPIs are measures of performance that indicate progress toward a defined outcome. They provide an analytical basis for decision-making as well as a focus for strategic and operational improvement.



## **Methodology**

A methodology is a collection of principles, tools and practices that are used systematically to solve problems or achieve goals.

## **Monetization**

Monetization involves estimating the relative value, importance or usefulness of business impacts on people, which is then expressed in monetary terms. People may experience these impacts directly or indirectly through environmental, social and/or economic change.

## **Outcome**

Outcome refers to changes that occur as a result of business activities, such as meeting customer needs, securing the livelihood of employees, the warming of water around a factory, melting polar ice caps or rising sea levels.

## **Output**

An output is a direct consequence of a business activity. Greenhouse gas emissions that are generated through manufacturing of a product are one example. Measuring such variables is part of traditional non-financial reporting activity.

## **Pathways / Impact pathways**

Pathways or impact pathways provide a framework for tracking correlation chains or logical impact pathways.<sup>152</sup> Because impact pathways can represent different material flows, including those for products and services, the totality of these flows must be considered in order to understand the full impact of a company's activity on the environment.

## **Protocol**

A protocol reports on the progress of an operation. In this publication, this applies to all frameworks and is therefore used synonymously with the term framework.

<sup>152</sup> Value balancing alliance 2021 a.

## **Valuation**

Valuation is an analytical process used to determine the current or projected worth of business impacts. This assessment is not about recreating value, it's about determining what value society ascribes to a specific → impact or effect. There are different methods to go about this that are described in [section 3.4](#).

## **Value-to-business**

This perspective describes the interactions and dependencies of a business model with the external environment. It considers the full impact of changes in the environment and society on a business model, which includes their direct impact on cash flows.<sup>153</sup>

## **Value-to-society**

This perspective looks at how business activities impact human well-being. The value or benefit of these impacts on people is expressed in terms of a common unit of value.<sup>154</sup> This perspective is used in tracking correlation chains or logical impact pathways.<sup>155</sup> Because impact pathways can represent different material flows, including those for products and services, the totality of these flows must be considered in order to understand the full impact of a company's activity on the environment.

## **Well-being**

Well-being refers to a person's mental and physical wellness, a state of feeling happy, healthy and prosperous.<sup>156</sup>

Other concepts are explained in the document where relevant.

<sup>153</sup> Natural Capital Coalition 2016.

<sup>154</sup> Value balancing alliance 2021 a; European Financial Reporting Advisory Group 2021.

<sup>155</sup> Value balancing alliance 2021 a.

<sup>156</sup> Value balancing alliance 2021 b.

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