

THE CURRENT FIELD OF TRUE COST ACCOUNTING

An analysis of the similarities and differences of True Cost Accounting initiatives

February 2023

A report by:



Commissioned by:

TCA
Accelerator

Advancing
True Cost Accounting
in Food Systems



The Current Field of True Cost Accounting

The Current Field of True Cost Accounting was prepared by Impact Institute, whose mission is to empower organizations and individuals to realize the impact economy by creating a common language for impact and providing the tools to use it. The Impact Institute research team for this project included Reinier de Adelhart Toorop, Jude Bernard, Zoë Boven and Claire van den Broek.

info@impactinstitute.com

www.impactinstitute.com

The Current Field of True Cost Accounting was commissioned by the TCA Accelerator, a global network advocating for the transition to just, sustainable, and healthy food systems through widespread adoption of True Cost Accounting (TCA). The TCA Accelerator is an Allied Initiative of the Global Alliance for the Future of Food.

info@tcaaccelerator.org

www.tcaaccelerator.org

Acknowledgements

The authors are grateful to David Gould, Carl Obst, and Gyde Wolleson for their invaluable contributions as reviewers of this report. We are also indebted to the developers of the impact assessment initiatives reviewed in this report for their time and feedback at various stages of our analysis. We also wish to acknowledge the critical contributions from members of the TCA Accelerator Community of Practice and Harmonization Working Group, whose dedication to the advancement of true cost accounting as a critical driver of food systems transformation inspired and informed this work. Finally, we are thankful for the financial support for this project from the Global Alliance for the Future of Food, a strategic alliance of philanthropic foundations working together and with others to transform global food systems now and for future generations.

Suggested citation: Impact Institute, *The Current Field of True Cost Accounting: An analysis of the similarities and differences of True Cost Accounting frameworks*. TCA Accelerator, 2023.

<http://www.tcaaccelerator.org>.

Cover photo by Chantal Garnier

Table of Contents

1	Introduction.....	1
1.1	Potential to transform of the current economic system	1
1.2	A barrier for TCA: divergence In approach and content	1
1.3	About this report	2
2	How harmonization of TCA can help its effectiveness	2
3	The current state of TCA.....	3
4	Areas of similarity headed towards harmonization	6
4.1	Multi-capital scope.....	6
4.2	Multi-stakeholder scope	7
4.3	Materiality assessments	7
4.4	Valuation.....	8
5	Differences compatible with harmonization	8
5.1	Data collection processes	9
5.2	Measurement at input, output, outcome or impact level	9
5.3	Reference scenarios	10
6	Differences that do not require substantial methodological review.....	11
6.1	Representation of results	12
6.2	Indicators.....	12
6.3	Monetization factors.....	13
6.4	Completeness.....	14
6.5	Level of detail.....	15
7	Differences that may require substantial methodological review	15
7.1	Welfare dimensions.....	16
7.2	Scope	16
7.3	Aggregation of results	17
8	Efforts towards harmonization	18
8.1	Harmonization by integrating methodologies.....	19
8.2	Harmonization by providing principles, ideas and/or requirements	21
8.3	The current field of harmonization	21
9	Conclusions	22
	Bibliography.....	24
	Appendix A: Glossary.....	29
	Appendix B: Development of Harmonization Initiatives	31
	Appendix C: summary of TCA initiatives analyzed	33

1 Introduction

Understanding and addressing the externalized costs and unaccounted-for benefits of food systems is critical to effectively address the world's biggest challenges. Utilizing around 40% of available arable land, accounting for around 70% of freshwater use and responsible for between 33% of global greenhouse gas emissions (Global Alliance for the Future of Food 2022) (Tubiello 2021), the food system is dependent on various social, environmental and economic resources and produces a variety of social, environmental and economic impacts. Measuring, understanding and adjusting current practices according to these dependencies and impacts is thus integral to sustainability.

1.1 Potential to transform of the current economic system

One of the best methods available to measure and understand impacts and dependencies is True Cost Accounting (TCA). While there are various definitions of TCA in use, we have adopted the following as a reference for purposes of this publication: **True Cost Accounting (TCA) is an evolving holistic and systemic approach to measure and value the positive and negative environmental, social, health and economic costs and benefits to facilitate business, consumer, investor and/or policy decisions** (UN Food Systems Summit 2021).

TCA works to ensure successful outcomes for food system-related interventions by clarifying the specific dependencies of/impacts created by economic activities and specifying which stakeholders are affected by which impacts or rely on which dependencies. Further analysis of these impacts and dependencies can more accurately reveal what causes them and hence allows the design of a path towards reduced externalized costs and greater societal benefits. Going one step further, certain TCA initiatives can even make the different impacts/dependencies (or in some cases the same impact/dependency) comparable to one another. This allows decision-makers to set priorities and allocate resources when deciding on which impacts/dependencies to reduce/maximize, increasing the efficiency and effectiveness of the aligned initiatives.

1.2 A barrier for TCA: divergence in approach and content

TCA systematically measures and values impacts and dependencies using a multi-stakeholder, multi-capital approach. The field of TCA is currently being independently developed by numerous organizations, causing a divergence in the approach and content of TCA assessments. The sheer number and difference in initiatives create a strong barrier to entry for potential TCA practitioners, who are unable to determine either the robustness of different approaches or the approach(es) most suitable for their specific needs.

One strategy to possibly overcome this barrier is to promote greater harmony between TCA initiatives¹. Greater similarity in approaches and comprehensive overviews of the field will help to introduce users to

¹ In the context of TCA, harmonization refers to the process of reducing variation among TCA initiatives. In practice, this means increasing the compatibility of TCA practices by setting bounds of the degree of variation. The goal of harmonization is to find commonalities, identify critical requirements that need to be retained, and provide a common standard.

the field and make the resulting assessments comparable. The direct comparison of assessments between initiatives will stimulate greater innovation and foster trust in the accuracy and effectiveness of TCA.

1.3 About this report

In order to promote harmonization, the TCA Accelerator commissioned the Impact Institute to analyze the current field of TCA, as it relates to the food sector. This report presents the results of this analysis, including a summary of existing initiatives, the areas in which they are similar and the areas in which they diverge. This work aims to stimulate TCA assessments of the food sector by creating a clear starting point for harmonization and outlining the next steps towards this goal.

The report will begin with an explanation of how TCA can help actors who can influence economic decisions (e.g. policy makers, investors and corporations) to adjust current practices based on revealed impacts and dependencies and then explain how harmonization can aid in making TCA more effective in determining efficient adjustments. The next section will explain the current state of TCA, detailing the existent initiatives included in the analysis. The following four sections will explore the similarities that exist among these initiatives and the different types of differences that exist (in set-up, principles and application). This will be followed by a brief overview of how harmonization is currently happening in the field. Finally, the document will end with our suggested next steps on the path towards harmonization. There are three appendices: a glossary, an overview of harmonization efforts, and a summary of the TCA initiatives analyzed in the research phase.

2 How harmonization of TCA can help its effectiveness

TCA is a dynamic field with a diversity of approaches being employed. This has created difficulty comparing between analyses conducted using different approaches, a situation that has driven calls for more harmonization. While the overall ambition is clear, the way to get there, and even the nature of the envisioned final state, are not. Harmonization can occur in many different forms, from the adoption of a generally accepted TCA framework (with defined parameters and principles, but without firmly dictated methodologies and tools for implementation to allow for adaption to different contexts), to the establishment of standardized and prescriptive methodologies and tools within a unified framework. This work makes no claim to which endpoint is the most feasible or desirable, leaving this open for further consideration. The topics defined for harmonization below, and the comments concerning their subsequent harmonization, are thus applicable to a wide variety of harmonization endpoints.

The motivation for seeking greater harmonization between TCA assessments can vary by type of stakeholder or sector. Stakeholders such as investors or businesses may be internally motivated to conduct assessments of their investments, products, or organizations for a variety of reasons. One such reason could be the avoidance of future fines or negative consequences of new regulations; another could be the increasing social reaction to products and organizations with negative externalized costs for people and nature. In both cases, but especially in the latter, the harmonization of TCA initiatives will help to demonstrate in specific terms the benefits of products, organizations and investments. With many current initiatives being incomparable, the products, organizations and investments that have undergone a TCA assessment cannot be contextualized among their competitors and sector. A harmonized TCA sector will

thus allow stakeholders to communicate how they are positioned among their competitors. This, in turn, will pressure others to follow suit and either substantiate their costs and benefits or commit to the effort of reporting on their impacts and dependencies and steering on them.²

On the other hand, policymakers and advocates may have an interest in promoting greater harmony across TCA assessments, especially at the geographic or sectoral level, to ascertain and monitor the effectiveness of current and new policies and regulation. A harmonized sector will increase trust in TCA as a whole and will help decision-makers with broad spheres of influence identify and understand the magnitude of the issues surrounding food systems. This can then be used as a baseline to compare future assessments and gauge the actual effect of instituted policy.

Importantly, greater harmonization of TCA initiatives serving the needs of one set of stakeholders can proportionally affect the other group. For example, the harmonization of an impact/dependency topic or indicator in both definition and method among initiatives aiming to evaluate the true costs of a given product, organization, or investment will greatly aid stakeholders conducting assessments on the broader scope of these impacts/dependencies. Conversely, if topics or indicators are harmonized among TCA initiatives designed to evaluate impacts of policy on the geographic or sectoral levels, other initiatives outside these realms would be able to adopt the definition and method of the harmonized impact/indicator.

Some harmonization of approaches is already underway, including a variety of initiatives that will be explored further in chapter 8.

3 The current state of TCA

To understand the current field of TCA, our research team analyzed 35 frameworks, methodologies and tools³ (listed below and summarized in Appendix C) that could be said to meet the TCA definition stated in the introduction. These 35 initiatives were selected for inclusion in this analysis through a three-step process.

- 1) First, we reviewed initiatives included in the Global Alliance for the Future of Food's 2020 TCA Inventory (TCA Accelerator 2020). The TCA Inventory listed resources on a publication basis rather than an initiative basis. As such, multiple publications from the same initiative were listed as separate entries. Our research team preferred to group and analyze entries on an initiative basis where necessary (for example, ISO 14040 and ISO 14008).
- 2) Second, we added initiatives known through the research team's previous analyses and internal expertise.
- 3) Finally, we reviewed initiatives suggested for inclusion in our analysis by members of the TCA Accelerator's Harmonization Working Group. The suggested initiatives were then checked to see if they measured outputs, impacts or dependencies that affect multiple stakeholder groups and if

² Some work towards harmonization of these types of initiatives is already underway. One such example is the [Capital Coalition's Value Accounting Network](#).

they had enough information published to perform this comparative analysis. If this was the case, the initiative was included.

An overview of initiatives assessed is presented in Table 1, with more detail in Appendix C. While the research team aimed to include as many initiatives as possible given the available time and resources, it is recognized that the analysis does not include every initiative that could arguably be included under the TCA banner.

Once we finalized the selection of initiatives for inclusion in our analysis, the research team identified how these initiatives handled elements of the standard TCA assessment process: scoping, measuring, valuing and aggregating impacts and/or dependencies (see Figure 1). Additionally, we considered contextual information, like what capitals framing was used (explored in Section 4.1) and whether the initiative was defined to specifically assess food systems. This information was collected and recorded using publicly available documents and case studies. If certain information was not (publicly) available, this was noted.⁴



Figure 1: Figure : Standard processes involved in a TCA assessment

Next, we identified points where initiatives converged or diverged. Through this comparison, four general categories were defined, see also Figure 2:

- areas of **similarity** heading towards harmonization
- **differences** compatible with harmonization (type 1 differences)
- **differences** that do not require substantial methodological review to achieve harmonization (type 2 differences)
- **differences** that may require substantial methodological review (type 3 differences)

Type 1 differences tend to be slight, but still exist between initiatives. These differences are already headed towards harmonization but are not as harmonized as the identified similarities. Type 2 differences generally should not require significant review or adaptation to alter and can thus reach harmonization on a faster timeline than other differences. Type 3 differences arise due to differences in underlying philosophy or principles. These differences are generally integral to TCA frameworks in particular, and thus may not be easily overcome without significant review or adaptation.

⁴ It is recognized that the intended purpose of these initiatives differ. For example, some initiatives are intended to support others through creating impact/dependency-related databases or providing comprehensive analyses of production methods (e.g., the SEEA and the ISO standards respectively), while others actively compete with another (as similar services offered within a competitive market). In this sense, identifying topics to harmonize within TCA initiatives will hopefully cut through these differing relationships, despite the fact that the overall progress towards harmonization may be affected by them.

Table 1: Overview of initiatives assessed

#	Initiative	Parent organization
1.	A4S Essential Guide Series	A4S
2.	Beyond GDP	OECD
3.	B Impact Assessment	B Analytics
4.	E.Valu.A.Te	Cambridge Institute for Sustainability Leadership
5.	Food System Impact Valuation Initiative	FoodSIVI
6.	The Framework for Inclusive Capitalism	The Coalition for Inclusive Capitalism
7.	GIIN Methodology	Global Impact Investing Network
8.	GIST Impact Assessment	GIST
9.	Global Farm Metric	Sustainable Food Trust (SFT)
10.	The Guide to Social Return on Investment	Social Value UK
11.	Impact Management Project	Bridges Insights
12.	Impact Weighted Accounts	Harvard Business School
13.	Inclusive Wealth Report	UN Environment Programme
14.	(Impact Institute) Integrated Profit & Loss Statement	Impact Institute
15.	International <IR> Framework	International Integrated Reporting Council (IIRC)

#	Initiative	Parent organization
16.	ISO 14008	International Organization for Standardization (ISO)
17.	ISO 14040 and 14044	International Organization for Standardization (ISO)
18.	Natural Capital Protocol	Capitals Coalition
19.	Net Positive Project	Net Positive Project
20.	New Philanthropy Capital	New Philanthropy Capital
21.	Product Impact-Weighted Accounts	Harvard Business School
22.	Social & Human Capital Protocol	Capitals Coalition
23.	Social Impact Measurement Model	Deloitte
24.	System of Environmental Economic Accounting	UN, European Commission, FAO, OECD, World Bank Group
25.	TCA AgriFood Handbook	TMG Thinktank and Soil & More Impacts
26.	TEEBAgriFood Evaluation Framework	UN Environment Programme, The Economics of Ecosystems and Biodiversity for Agriculture and Food (TEEBAgriFood)

#	Initiative	Parent organization
27.	TEEB for Agriculture & Food: Operational Guidelines for Business	Capitals Coalition and TEEBAgriFood
28.	Total Impact Measurement and Management	PwC
29.	Total Value	EY
30.	Transparent	Capitals Coalition, VBA, WBCSD, EU LIFE program
31.	TruCost	TruCost
32.	True Pricing	True Price
33.	(KPMG) True Value	KPMG
34.	Value Balancing Alliance (VBA)	VBA
35.	WICI Intangibles Reporting Framework	World Intellectual Capital Initiative (WICI)

Areas of similarity heading towards harmonization	Differences compatible with harmonization	Differences that do not require significant methodological review	Differences that may require significant methodological review
<ul style="list-style-type: none"> • Multi-capital scope • Multi-stakeholder scope • Materiality assessments • Valuation 	<ul style="list-style-type: none"> • Data collection process • Measurement at input, output, outcome or impact level • Reference scenarios 	<ul style="list-style-type: none"> • Representation or results • Indicators • Monetization factors • Completeness • Level of detail 	<ul style="list-style-type: none"> • Welfare dimensions • Scope • Aggregation of results

Figure 2: Similarities and differences between TCA initiatives

The elements of TCA processes reviewed below are those identified as most relevant to potential harmonization of the field; their categorization indicates the amount of effort that will be required to reach a harmonized point for each. This overview can thus serve as the basis for TCA leaders working toward greater harmonization.

4 Areas of similarity headed towards harmonization

The comparative analysis of existent TCA initiatives revealed existing areas of significant overlap. These areas are broadly covered by most to all of the assessed initiatives and are similar in terms of content. They can be seen as quite developed in terms of reaching harmonization. These recognized areas of similarity include multi-capital scope, multi-stakeholder scope, materiality assessments and valuation.

4.1 Multi-capital scope

A capital is the economic framing of the various stocks that embody current and future streams of benefits that contribute to human welfare.⁵ Actions, where an action is understood as an economic activity taken, typically are both dependent on and impact various capitals, both positively and negatively. TCA assessments must consider multiple capitals to fully understand the inputs necessary for an action and the impact it creates.

It is not surprising, therefore, that almost all of the initiatives included in our analysis that can be deemed a “framework” utilize a developed or recognized multi-capital framing. While it is recognized that these frameworks are distinct and may use varying definitions of the different capitals they identify, they are not necessarily conflicting with one another. The impacts and dependencies classified under one multi-capital framework can generally be translated into the others. Existing multi-capital frameworks include the Economic, Social and Environmental (ESE), the Capitals Approach promoted by the Capitals Coalition and TEEBAgriFood and the IIRC’s six capital framework. The relationship between these three frameworks is shown in Figure 2.⁶

⁵ Based on the definition in the [TCA Inventory](#)

⁶ The breakdown shown in Figure 3 is a very simplified relationship between these three frameworks. It is intended to indicate the comparability between them and the similarity in their overall scopes. In reality, these frameworks do not map one-to-one exactly, and would require a more detailed study to truly represent their relationship.

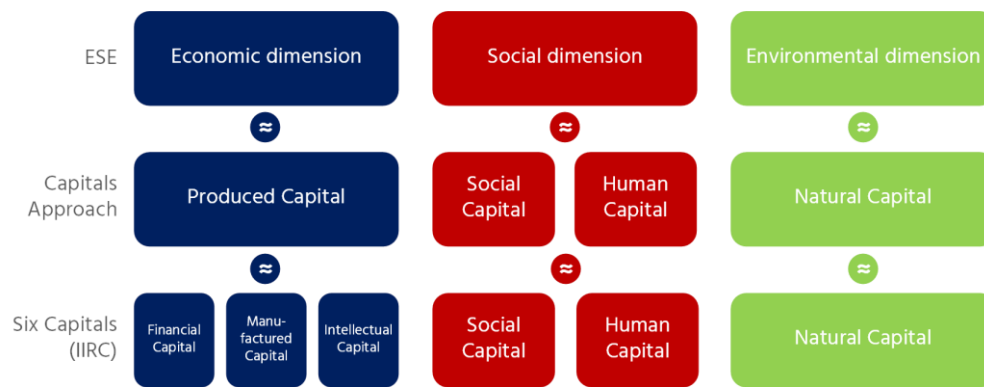


Figure 3: The relationship between prominent capitals frameworks (schematic)⁷

The multi-capital scope of TCA assessments can be fully harmonized through one of two ways: (i) one multi-capital framework is promoted as the overarching, harmonized multi-capital framework or (ii) a detailed mapping of all available multi-capital frameworks will need to be developed (provided that this promotes comparability between these frameworks⁸). These frameworks, especially the three named above, are primarily used to aggregate TCA results and thus should not require extensive review to adjust a framework from one capital schema to another (see section 6.1 for more on this).

4.2 Multi-stakeholder scope

As with capitals, impacts and dependencies are typically classified according to the stakeholder(s) they affect, often affecting more than one stakeholder group. A holistic breakdown of the different groups that are affected by impacts and dependencies will help to avoid omitting significant impacts/dependencies or presenting a misleading reality. For example, reporting positive and negative impacts on organizational employees but omitting or not calculating impacts on society may give the impression that the object being assessed creates less and/or a different overall balance of positive and negative impacts.

All of the assessed initiatives make use of a multi-stakeholder approach in some capacity. Unlike the multi-capital element discussed above, there are no commonly defined stakeholder lists or criteria. Thus, the scope of stakeholder groups covered, and the defined bounds of those groups, may differ between TCA initiatives. However, **the underlying conviction that a multi-stakeholder view is necessary for TCA sees near universal agreement among the assessed initiatives and is the first step towards harmonizing this element of TCA assessments** (see 6.1 for a more detailed exploration of multi-stakeholder scoping in TCA assessments).

4.3 Materiality assessments

Due to limitations in time, resources or data availability, it is not always possible to assess every impact and/or dependency in a TCA assessment. For this reason, all of the assessed initiatives include some form of materiality assessment in their scoping phase. The exact definition of materiality may differ, but a broad definition can be formulated as: if consideration of the impact or dependency's value, as part of the set of

⁷ This image originally appears in the Nature Food article '[Methodologies for true cost accounting in the food sector](#)' p.656 (de Adelhart Toorop, Yates, et al. 2021). It is reproduced here.

⁸ The feasibility and effectiveness of this approach will need to be assessed in a future analysis.

information used for decision-making, has the potential to alter the decisions made by the assessment user.⁹ The impacts and dependencies of an organization are material either if 1) they significantly affect the financial results of the organization itself or if they 2) significantly affect the welfare of an external stakeholder.

It is thus important to have a clear and systematic way to assess the materiality of impacts and dependencies. Doing so will ensure that the assessment is helpful to users, while presenting a realistic representation of the impacts created/dependencies. **In order to promote further harmonization, a set definition for materiality should be established and a set list of indicators to assess for materiality should be made available** (see section 6.2). A harmonized list of indicators will set the stage to establish one process for determining materiality and promote the comparability of results.

4.4 Valuation

Valuation is a process of estimating the relative importance, worth or usefulness of impacts and/or dependencies to people or society, or to a business in a particular context.¹⁰ The process of valuation helps to make the measured impacts understandable to various stakeholders. A TCA assessment can be presented in various ways, including using qualitative, quantitative or monetized values. Currently, the method of valuation is not harmonized. Even when using the same method of valuation, initiatives value differently (e.g. both FoodSIVI and True Price use monetization, but FoodSIVI monetizes through shadow prices and True Price utilizes remediation). For further discussion on specific choices in valuation, such as monetary valuation, see section 6.3 on monetization factors below. Despite this, all of the analyzed initiatives include the process of valuation in their assessments, suggesting that there is already widespread agreement on the usefulness of valuation.

To further improve the harmonization of valuation, the boundaries of each form of valuation will need to be clearly defined.¹¹ This can also include a description of the applications/uses of each form, such that users might be able to select the one that is most suited for their needs. Clearly defined boundaries will improve the comparability of assessments within the same form of valuation.

5 Differences compatible with harmonization

Differences compatible with harmonization describe elements in current TCA initiatives that are divergent enough to be labelled as differences but not significant enough to pose a serious obstacle to harmonization. We determined that three elements fell into this category: data collection; measurement at input, output, outcome or impact level; and reference scenarios.

⁹ Taken from the [TCA Inventory](#)

¹⁰ Based on the definition in the Social & Human Capital Protocol (Social & Human Capital Protocol 2019)

¹¹ Some work on this is already being undertaken for certain topics, such as [The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services \(IPBES\)](#) work on biodiversity and climate change.

5.1 Data collection processes

The accuracy and reliability of TCA assessments depends heavily on the quality of data being used. Utilized data can be one of two types: primary (data that directly results from the subject of the assessment) and secondary (data from other sources that is considered representative of the subject being described). Some assessments rely solely on either primary or secondary data, but a large portion combine the two.

Both primary and secondary data will need to be collected over the course of a TCA assessment. This can be done through a variety of means but can result in unreliable or inaccurate data if not done systematically. For this reason, multiple TCA initiatives have developed data collection protocols for both primary and secondary data that ensure the collected data is as accurate as possible. In particular, New Philanthropy Capital (Noble, O'Flynn and Kazimirski 2020) has developed an extensive collection protocol for primary data and the Global Impact Investing Network (GIIN) has released a comprehensive secondary data collection protocol (Global Impact Investing Network 2018). Other data collection protocols do exist, such as the guidance of Capitals Coalition (Natural Capital Coalition 2016) (Social & Human Capital Coalition 2019), but all serve the same purpose.

The existence of one standard for primary and secondary data collection would support further harmonization. While TCA initiatives can define more rigorous collection methods, the harmonized standard should serve as the baseline for collecting reliable and representative data. A large body of work exists for the data collection processes involved in creating official statistics, and the TCA sector can greatly benefit from this work in its path towards harmonization.¹² Shifting to a new set of conditions for collection should not require any major changes, as the method of data collection is typically not built into the infrastructure of TCA frameworks.

5.2 Measurement at input, output, outcome or impact level

Impact pathways explain how impact is created from activities. The pathways follow four steps: input, output, outcome and impact (Figure 4). Aside from impact, all of these levels are defined for both the actual activity and a chosen reference scenario (a realistic counterfactual situation that would have occurred if the activity being assessed had not, which will be further discussed in section 5.3), to complete the pathway. **Impact is then defined as the difference between the actual outcome of the activity and the outcome of the reference scenario** (IEF Impact-Weighted Accounts Framework).

¹² For an example of this work, see the EU commission's [recommended guidance piece](#) from Collaboration in Research and Methodology for Official Statistics (CROS).

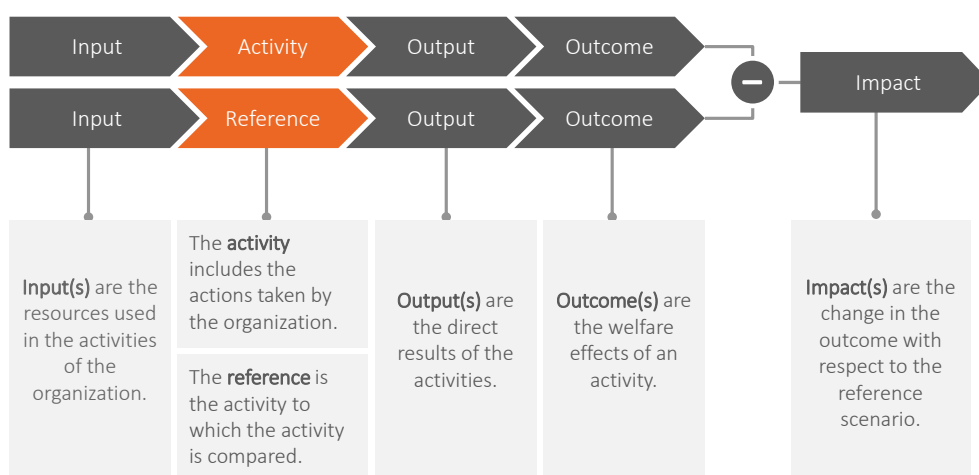


Figure 4: An impact pathway

TCA assessments can be done at each of these levels along the impact pathway: input (e.g. training budget), activity (e.g. number of training hours), output (e.g. number of people trained), outcome (e.g. benefits of training followed) and impact (e.g. those benefits compared to a reference scenario). Additionally, TCA assessments can further distinguish between stocks and flows of capital and/or include dependencies (reliance on the different forms of capital as defined by the TCA initiative being used).

To move towards harmonization, criteria for which impact pathways level is most appropriate to assess will need to be developed (these criteria could include things like data availability or use cases). These criteria would aid users to best define the scope of their TCA assessment to suit their needs and define study boundaries and data needs. Transparency regarding the level used will also improve the comparability of results between different assessments. As a possibility for further harmonization, the development of a central or harmonized process for using impact pathways to calculate impacts could ensure their robustness, even ‘grading’ how effectively the pathway is used in TCA initiatives.

5.3 Reference scenarios

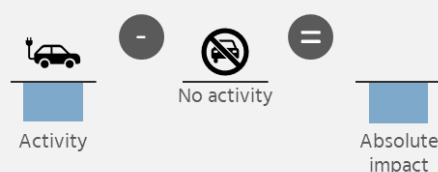
TCA assessments that are performed at impact level can measure impact as either absolute or marginal. Absolute impact is impact which assumes no alternative activity takes place in the reference scenario. In other words, absolute impact assesses the totality of impact caused by an activity. Marginal impact, on the other hand, assumes the most realistic alternative activities as reference scenarios. This method assesses the difference between two absolute impact scenarios, resulting in the amount of relative impact the activity creates.¹³

¹³ Analysis in this section is on impact level, which is the difference between outcomes in two scenarios. Similar analysis can in principle apply between differences of the inputs or outputs in two scenarios.

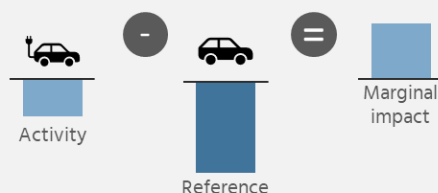
Absolute versus marginal impact

The difference between absolute and marginal will be exemplified through the emission of CO₂ from driving an electric vehicle.

Absolute: The absolute reference scenario in this case would be that no car is driven otherwise. Thus, all of the emissions of the electric vehicle are considered when measuring the impact of releasing CO₂.



Marginal: One of the marginal references that can be used in this case is the amount of CO₂ emitted through a gasoline car. In this case, the difference between the amount emitted by the electric vehicle and the gasoline car will be considered when measuring the impact. As shown in the example, a negative absolute impact can result in a positive marginal impact, depending on the chosen reference scenario. Note also that when the reference and the activity are similar, marginal impact is near-zero.



Current impact-level initiatives typically make use of one or both of these types of impact, with some even providing guidance on them; notably, Impact Institute (de Adelhart Toorop, Kuiper, et al. 2019) and the Capitals Coalition (Natural Capital Coalition 2016). Despite this, none of the reviewed initiatives explicitly state when one type of impact is being measured versus the other, and some additionally aggregate or otherwise report the results of both together.

As TCA initiatives move towards harmonization, they should continue to make use of both marginal and absolute impact, **while being transparent about the reference scenario being used. Avoiding the aggregation of the different types of reference scenarios will also help results to become more understandable and comparable.**

6 Differences that do not require substantial methodological review

The differences that do not require substantial methodological review describe differences in TCA initiatives that would not require substantial adjustment to the methodology when moving towards harmonization. Five differences make up this category: representation of results, indicators, monetization factors, completeness and level of detail.

6.1 Representation of results

TCA initiatives we analyzed typically display the results of assessments according to the capitals and/or stakeholders approach used. Both of these categorizations were mentioned previously in the similarities section (sections 4.1 and 4.2), but also merit mention as a difference. Almost all of the analyzed initiatives take both a multi-capital and multi-stakeholder approach to impact and/or dependency assessment. However, the approaches for both of these, while translatable (as displayed in Figure 3), are still distinct.

The choice to use a certain capital or stakeholder approach will thus affect the comparability and interpretation of results, but does not substantially affect the process and results of a TCA assessment.

Moving towards one harmonized capitals approach (such as those mentioned in section 4.1) and one harmonized stakeholder approach (as discussed in section 4.2) will not require substantial process or calculation reviews and will greatly improve both harmonization and comparability.

6.2 Indicators

Impacts and/or dependencies are assessed using indicators. Indicators describe what is being measured and, typically, the units that it will be measured in and the data points that will be required to measure it. Indicators are the most granular level of impact and/or dependency assessment and will usually be aggregated into larger categories once assessed, such as by capital or stakeholder.

While the names of indicators may differ, the topic of their assessment is typically quite similar in scope. Of the 35 initiatives analyzed in this project, 21 have published standard impact/dependency indicator lists at the time of analysis. These 21 initiatives have developed 366 distinct indicators (indicators that differ in naming). This list was distilled by this research team into 32 impact/dependency indicators (these indicators do not define unit and/or data needs and instead simply indicate the scope and content to be assessed) by combining indicators that were sufficiently similar in scope and content assessed. 7 indicators were directly covered by over half of the 21 initiatives, representing the topics closest to harmonization in the current field of TCA. Figure 5. These 7 include:

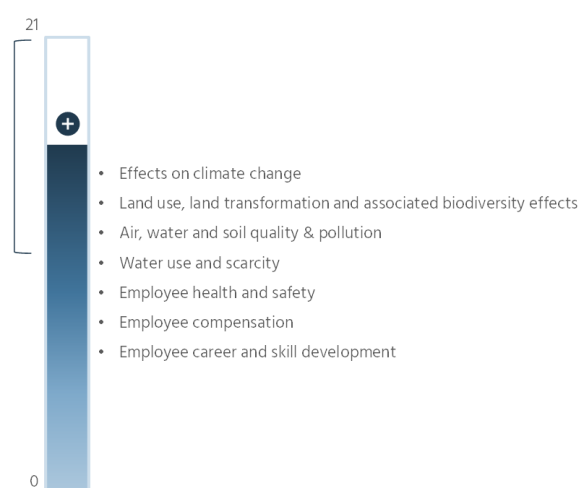


Figure 5: Impact topics in over 11 frameworks

Of the remaining indicators, 16 were represented in 5-10 initiatives (Figure 6) and 9 were represented in only 1-4 initiatives (Figure 7).¹⁴ Many of the analyzed initiatives were not food specific, and, as such, some of the lesser represented indicators may be seen as, in fact, more material for food system assessments (such as food security).



Figure 6: Impact topics in 5-10 frameworks

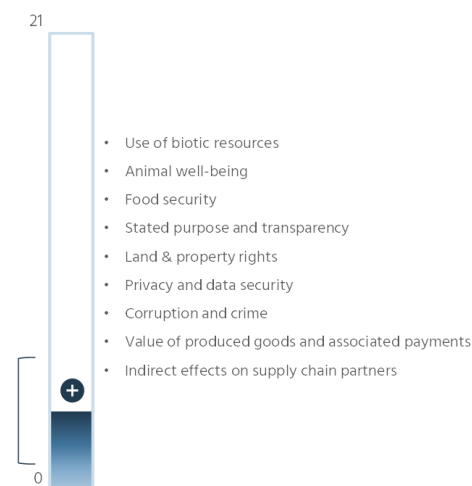


Figure 7: Impact topics in 1-4 framework

An agreed standard list of indicators and impact categories would help to move towards harmonization. While the list does not have to be an exhaustive one, it should serve as a basis for which users of TCA initiatives can perform a materiality assessment. The list would then have to be expanded on, in time, to clearly define each indicator and include a method for its measurement. This will ensure a (potentially) similar scope for TCA assessments as well as greatly improve the comparability of the results.

6.3 Monetization factors

TCA assessments can be valued in various ways, including through monetization (see section 4.4). One of the largest benefits of monetization as a valuation method is the translation of impacts and/or dependencies assessed in various units into one, comparable unit. For example, the impact of greenhouse gas emissions, typically measured in kg CO₂-equivalents is inherently incomparable to employee health and safety, often measured in Disability Adjusted Life Years (DALYs).

Valuation through monetization has the added benefit of allowing the comparison of impacts to items material to stakeholders, like investments, profit-and-loss line items and product prices. However, the creation of the factors used to translate these units into monetary ones often require normative assumptions which may not be universally agreed upon or even have support throughout the field of TCA. This has led to the rejection of monetization by some and the heterogenous creation of monetization factors by those who support them.

¹⁴ The full analysis that this indicator overview was created from is available on request.

Monetization is gaining support in the field of TCA, with 21 of the 35 analyzed initiatives including it into their methodology or offering guidance on how to include it. However, the various methods that exist¹⁵ are not necessarily readily comparable to another, and, at times, initiatives do not even publish the method of monetization that is used. This leads to a lower level of comparability between initiatives than would otherwise be possible, though this is still more comparable than before monetization.

Monetization is a method that is integrated into the process of many TCA assessments. It is typically implemented through a multiplication between measured indicators and monetization factors (Figure 8). For this reason, adjusting to a different method of monetization should not require substantial review of other parts of the methodology (unless factors cannot be found for certain indicators). Once this is established, a standard method for monetizing these indicators can be defined. This is not, however, to diminish the normative ties to this practice, which can hamper the adoption of new methods.

Harmonization can be further accelerating by defining a list of standard indicators to assess.

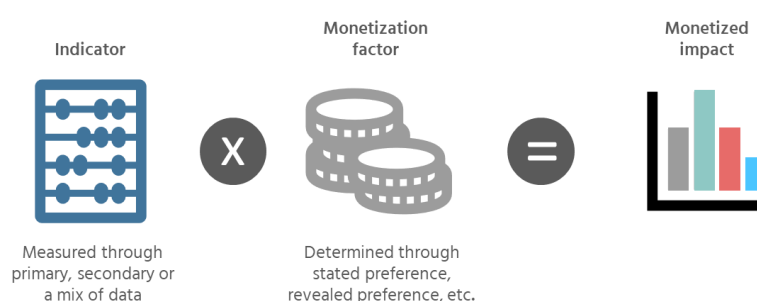


Figure 8: Example of a monetized impact

6.4 Completeness

One of the most urgent issues with both the current and harmonized field of TCA is the risk of becoming a tool for greenwashing. If not done carefully, TCA can be used to justify or otherwise hide externalized costs.

As previously noted, all analyzed initiatives include materiality as a condition for impact and/or dependency measurement. However, it is not always the case that all material impacts and/dependencies are measured, depending on the scope of the study. Some initiatives even focus specifically on positive impacts, which run the risk of hiding the negative impacts created.

In moving towards harmonization, applications will need to be careful to include all possible material impacts/dependencies in an assessment, specifically not leaving out material negative impacts/dependencies. In practice, this translates to users practicing completeness through materiality assessments and developers of TCA frameworks, methodologies, and tools offering guidance on how to create a complete assessment. This may require some research and development, but will build on currently developed initiatives instead of requiring adjustments or changes.

¹⁵ Comprehensive overviews of the currently used methods for monetization can be found in (TEEB 2018) (Natural Capital Coalition 2016) (Social & Human Capital Coalition 2019).

6.5 Level of detail

The analyzed initiatives vary significantly on the level of methodological detail published in their public works. The majority of these initiatives do not publish enough information for a user to be able to conduct a full TCA assessment using the public works alone. Only 7 of the 35¹⁶ offer enough methodological detail for a user to easily and comprehensively create a full assessment from only their works, with an additional 11¹⁷ offering enough methodological detail to perform a large portion of an assessment, but may require additional guidance or expertise to be able to complete it.

A slight divide is observed in the organizations that publish the most detail and those that publish the least detail. Those in the former category are mainly non-profit organizations and coalitions of private organizations, and those of the latter type tend to be consultancies offering TCA assessments and guidance as a service.

The level of methodological detail published does not affect the overall process of a TCA assessment and therefore does not require methodological review to adjust. It is recognized that publishing large methodological pieces can require extensive time and resources and that full transparency can eliminate market advantages, in terms of those organizations who offer assessments and guidance as a service. However, a lack of published methodological detail can hamper the adoption of TCA by presenting it as a mysterious practice.

TCA initiatives do not necessarily need to take steps regarding their level of methodological detail as they develop towards harmonization. However, **increases in transparency will allow for more in-depth analyses of the similarities and differences that exist among initiatives, and illuminate how differences that create heterogenous development of the sector can be harmonized.** This, in turn, will likely accelerate the process of harmonization and develop trust in established initiatives.

7 Differences that may require substantial methodological review

The differences that may require substantial methodological review explore those differences between TCA initiatives that are integrated throughout the method. These differences would require significant

¹⁶ The Framework for Inclusive Capitalism (Coalition for Inclusive Capitalism 2018), Impact Management Project (Impact Management Project 2021), Inclusive Wealth Report (Barbier, et al. 2018), Product Impact Weighted Accounts (Serafeim and Trinh, A Framework for Product Impact-Weighted Accounts 2020), Guide to SROI (Nicholls, et al. 2012), TCA AgriFood Handbook (True Cost Initiative 2022) and the Value Balancing Alliance (Value Balancing Alliance 2021).

¹⁷ E.Valu.A.Te (Schaafsma and Cranston 2013), FoodSIVI (Lord 2020), International <IR> Framework (International Integrated Reporting Council 2021), ISO standards (ISO 2006), Natural Capital Protocol (Natural Capital Coalition 2016), Social and Human Capital Protocol (Social & Human Capital Coalition 2019), SEEA (System of Environmental Economic Accounting 2021), TEEB for Agriculture and Food (TEEB 2018), Transparent (Capitals Coalition n.d.), Global Farm Metric (Sustainable Food Trust 2021), and True Price (Galgani, et al. 2020).

changes to the method when moving towards harmonization. This category includes three elements: welfare dimensions, scope and aggregation of results.

7.1 Welfare dimensions

A welfare dimension is one way to conceptualize and demonstrate the things that are valued in society. Many initiatives select a welfare dimension, either explicitly or implicitly, to underpin the measurement of impacts. An initiative that selects human well-being as its welfare dimension, for example, will measure and value its impacts in relation to how the activities being assessed affect human well-being. For this reason, the welfare dimension will also affect the impacts and/or dependencies that will be considered material.

Most frameworks focus on a single welfare dimension, typically human well-being. Other approaches use multiple welfare dimensions, typically human well-being in addition to another, e.g., respect of rights (where rights are seen as equally important as well-being). In these approaches, a violation of rights will always be assessed, even if it is associated with limited well-being loss.¹⁸ Additionally, other TCA approaches treat different elements of natural capital as separate welfare dimensions. They are seen as possessing intrinsic value, where even changes that do not affect people's well-being are assessed.

It is the position of the research team that welfare dimensions are intrinsically tied to the foundation of a TCA assessment. Shifting an impact/dependency method to a different welfare dimension would require a full review of the methodology, from scoping to valuation (e.g. shifting from measuring the inherent value of nature to measuring the effect on people's well-being). The addition of other dimensions would require less review, but nonetheless would require large additions to the currently existing method. **One method to improve harmonization while limiting the review required is by defining which applications and use cases a particular welfare dimension is best suited for.**

7.2 Scope

Differences in the scope element refer specifically to initiatives that perform organizational assessments, but can secondarily pertain to assessments of investments.

Organizations create impact through both their own operations (direct impact) and in their value chain (indirect impact), for example by facilitating the actions of other organizations. Only assessing the direct impact of an organization, therefore, may not offer a comprehensive view of the organization's total impact on society. Additionally, if an assessment is not clear on whether the measured impact is direct or indirect, it will be difficult to compare it to other organizational assessments.

All assessments we reviewed occurring at the organizational level utilize direct impact, with select others additionally including indirect impact. In the language of the Greenhouse Gas Protocol (WRI and WBCSD

¹⁸ An example of a violation of rights that might result in limited well-being loss is requiring work to be performed without providing proper safety equipment. If not, accidents occur. This may not affect the well-being of workers at all, however, it is in violation of their labor rights and thus would be considered under a TCA approach that uses a rights-based welfare dimension.

2004), direct impact is reflected in Scope 1, while indirect impact is reflected in Scope 2 (impacts from suppliers of electricity, steam, heating and cooling) and Scope 3 (impacts from all other suppliers and other organizations contributing indirectly).

Direct and indirect impact can be presented separately or together – either as a simple sum or weighted with an attribution factor that shows the degree to which the organization being assessed is seen as responsible for the impact (see also section 7.3).

More widespread inclusion of indirect impact in assessments performed at the organizational (or, to some extent, investment) level could be through the adoption of (or alignment with) the Greenhouse Gas Protocol's scopes in assessment of other impacts. In any case, wider inclusion would require the modelling of expanded impact and/or dependency calculations as well as agreement on a method to combine direct and indirect impact. For some frameworks, this could require a large amount of development and research.

These efforts could be improved by establishing a list of standard indicators to be included in an assessment. Standard indicators will improve comparability and harmonization and further provide a direction for those initiatives who would need to develop these indicators for their own methods.

7.3 Aggregation of results

After measurement, impact and/or dependency values can be aggregated for reporting. Many of the initiatives we analyzed aggregated results on various levels, such as by stakeholders or capital, or aggregated results into one summary number, such as “net value creation” (found in methods like KPMG’s True Value (van Bergen, Mackintosh and McKenzie 2014)). Depending on the method of aggregation, this can result in a lower level of comparability between initiatives. For example, if two assessments measure the same indicators but aggregate it with other, different indicators, it becomes impossible to compare the values of the initial indicator – its value is hidden through the aggregation. Figure 9. In addition, aggregation risks obscuring problematic impacts on one or more capitals that may be of interest to specific stakeholders and may give rise to accusations of greenwashing.

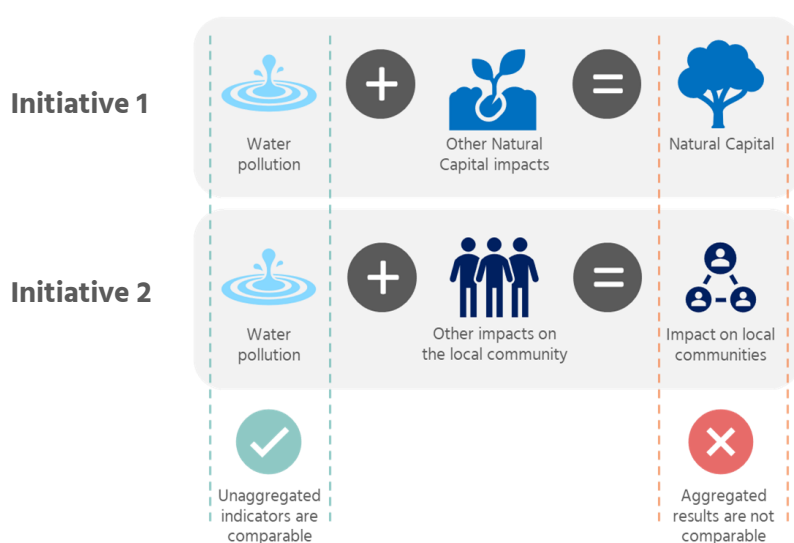


Figure 9: The aggregation of results can reduce comparability

Typically, the type of aggregation performed is built into methods, tools and software developed for an initiative. Certain types of aggregation, such as through net value creation, are even integral to the positioning of certain initiatives. Because of this, altering the type of aggregation used may require significant review, especially of developed tools and software. **Aggregation incomparability can be improved through reporting on the results of each measured indicator separately and avoiding the practice of netting.** This will also have the effect of increasing transparency and confidence of external stakeholders in the results.

8 Efforts towards harmonization

The call for harmonization is indeed heard in the field. A number of efforts working towards harmonization are already active, both those specific to TCA for food systems and in the larger non-sector-specific field of impact assessment. The number of these efforts is growing at an increasingly fast rate, with increasingly different approaches. The desired outcome of these efforts, however, can be largely broken down into two types:

1. Those who aim to combine or integrate multiple initiatives into one overarching framework, possibly replacing the previous initiatives.
2. Those who band together to create underlying sets of principles, ideas or requirements that capture the essence and values of the members involved, defining their shared core. Individual initiatives are encouraged to embrace these principles, ideas and requirements, but continue to exist independently with their own unique selling points.



Figure 10: Visualisation of harmonization techniques

To help understand existing harmonization efforts, we have mapped them to the aforementioned types (with the first type being mapped as black and the second type being mapped as dark grey below). They have then further been categorized according to the scope and guidance level they offer and compared to both individually developed initiatives (light grey) and supporting initiatives (white).

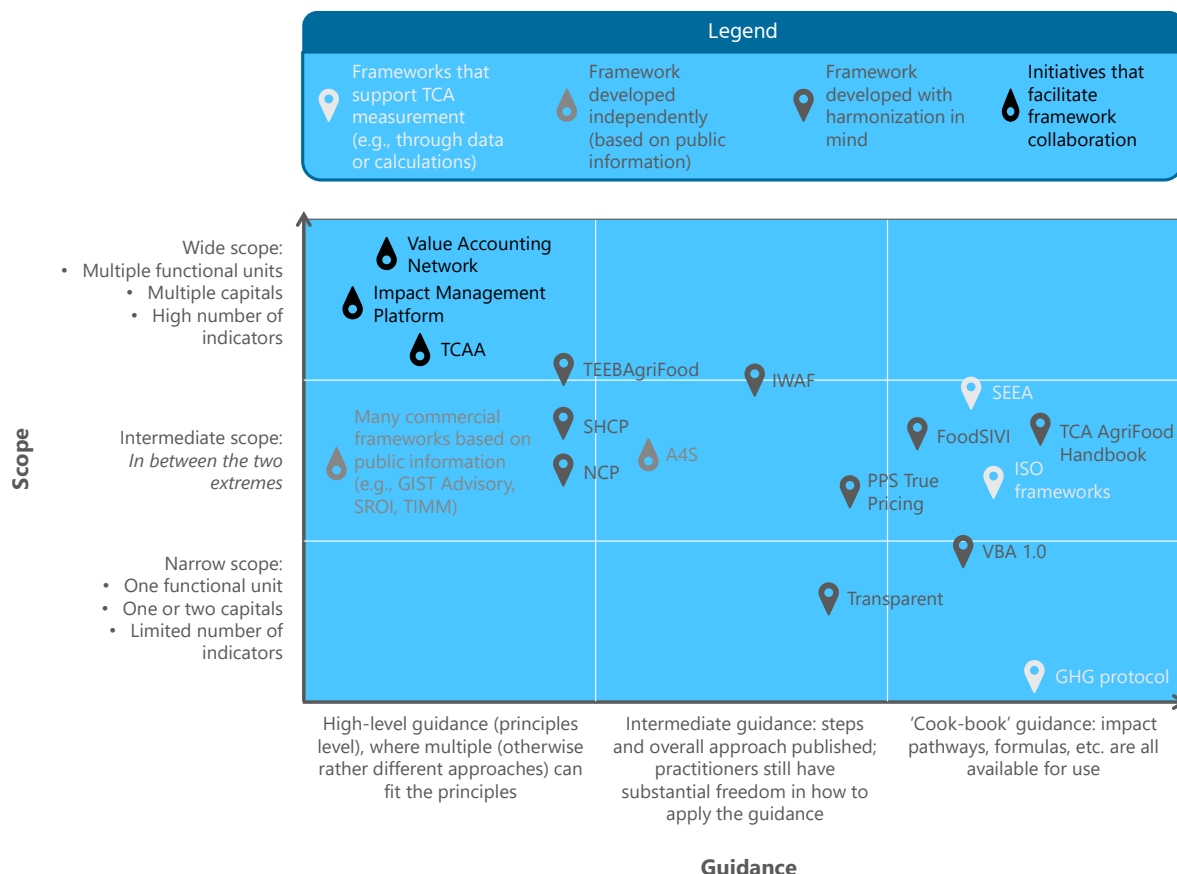


Figure 11: A mapping of the current scope and guidance of existing harmonization efforts

8.1 Harmonization by integrating methodologies

Efforts to create one single overarching approach for impact assessment are currently dominant, and are appearing in faster succession in recent years. The research team has identified nine such initiatives, including FoodSIVI, the Impact Weighted Accounts Framework, The Natural Capital Protocol, the Publiek-Privaat Samenwerking for True Pricing, the Social and Human Capital Protocol, TEEB AgriFood Evaluation Framework, The TCA AgriFood Handbook (TMG Thinktank and Soil & More Impacts 2022), the Transparent method and the Value Balancing Alliance method.

The result of all of these efforts has been a combined initiative which represents the shared ideals of the included members. In all cases, the combined result published more detailed guidance than the individual members' frameworks, methodologies, or tools had previously published, enabling users to apply the new initiative directly with only limited need for guidance (as opposed to when applying one of the 'original' initiatives).¹⁹

¹⁹ This statement is true with the possible exception of Harvard Business School. This previous Impact Weighted Accounts Framework had a smaller scope than the later developed one, but always published a very high amount of detail on the method used for impact calculation.

Three of these projects explicitly merged existing methods from multiple organizations: The Impact-Weighted Accounts Framework (IWAF) merges the Harvard Business School and Impact Institute measurement method, the PPS (*publiek-private samenwerking*, Dutch for public-private partnership) merges the True Price and Wageningen University measurement methods and the Value Balancing Alliance methodology integrates elements from the impact frameworks of Deloitte, EY, PwC and KPMG and measurement tools from GIST Impact. Soon after its first major publications, the VBA additionally began working with the authors of the various Capital Protocols, in a project called Transparent, that aims to harmonize the measurement and valuation of natural capital impacts even further. The World Business Council for Sustainable Development (WBCSD) has indicated that they will work on specific guidance pieces that adapt the Transparent method to the food and agriculture context (in 2022).

The remaining six harmonization efforts were instead created through extensive stakeholder consultation, typically incorporating elements from existing measurement methods when they were conceived (the FoodSIVI, NCP, SHCP and TEEBAgriFood Evaluation Framework are all explicit examples of this).

The TCA AgriFood Handbook describes itself as a methodology derived from the TEEBAgriFood Evaluation Framework. This and two other Initiatives, FoodSIV and the PPS, were created specifically for food systems. All of these methods publish a high amount of detail in their methodological documents. A user could perform an assessment directly from FoodSIVI, the TCA AgriFood Handbook and PPS methods, with the TEEBAgriFood method requiring a bit more user choice and expert input than the others.

The remaining initiatives are more general, having not been built for a specific sector or system. They cover the needs of various stakeholders with most (excluding the NCP and SHCP) explicitly valuating through monetization. However, the work of the NCP and SHCP have been translated into the food sector context through the TEEBAgriFood Operational Guidelines for Business currently in consultation draft (Capitals Coalition 2020).

Harmonization by integrating methodologies may face difficulty when attempting to create consensus on the intricacies of scope, calculation, valuation, aggregation or other factors. If full agreement cannot be reached, these efforts may create a new framework, methodology, or tool, while the member organizations continue to maintain their own initiatives. An outcome of this type would work against harmonization by introducing a new method and adding to the heterogeneity and confusion that already exists. This risk is captured in a well-known xkcd comic (Figure 12).



Figure 12: A view on creating new standards (Source: xkcd.com/927)

8.2 Harmonization by providing principles, ideas and/or requirements

Initiatives aiming to define a shared core among initiatives are less prevalent than their alternative but no less influential. Based on outreach to actors in the field, the research team has identified three initiatives that actively work to facilitate collaboration among existing frameworks. These include the True Cost Accounting Accelerator (TCA Accelerator); the Valuing Accounting Network (VAN), curated by Capitals Coalition (and in partnership with Impact Management Project) (The Valuing Accounting Network 2022); and the Impact Management Platform (IMP) hosted by the Impact Management Project.

Of the three, only the TCA Accelerator is specific to food systems and focuses on the broad scope of initiatives that could be considered TCA. The VAN and the IMP instead focus primarily on impact assessment methods (which have a wider scope than TCA for food systems) and are not specific to any sector or system. Importantly, none of these initiatives are attempting to create one overarching initiative, but are instead focused on adjusting existing methods towards a more harmonized ground.

The IMP hosts a closed platform for impact assessment initiatives, practitioners and policymakers to share ideals and discuss critical topics surrounding impact measurement (Impact Management Project 2022). Members can join on request. The VAN similarly facilitates the discussion between impact measurement initiatives, asking them to self-identify their similarities and work towards joint statements on their belief in these similarities.²⁰ The VAN is specifically focused on the implementation of impact measurement in organizations. The TCA Accelerator also facilitates a shared space for discussions by developers of impact assessment initiatives, but additionally includes representatives from corporations, academia, government, philanthropy, and civil society.²¹

Initiatives of this type may face difficulty in establishing the legitimacy of the principles or directives they create. To establish this legitimacy, they typically need larger networks of impact assessment developers to adopt recommended principles/directives. These difficulties may account for the relatively fewer initiatives of this type.

8.3 The current field of harmonization

To help create some understanding of the interconnection between the different actors in the field, we created a visualization of the current harmonization efforts and their member organizations. This visual is based on the research done on the public information of these efforts and their members, as well as discussions with key actors in the field. It is thus based on the ongoing understanding of our research team and may not fully represent all existing harmonization efforts to date.

²⁰ This focus can be seen in the joint statement and [explanation of the VAN](#).

²¹ The TCA Accelerator also facilitates input from its community on barriers and actions needed to strengthen and mainstream True Cost Accounting as a critical tool to food systems transformation; the lack of harmonization in the field was identified as a barrier to these goals by the TCA Accelerator community and thus became a focal point and inspiration for this study.

The results of this analysis can serve as the basis to create a plan for future harmonization of the field. Based on the identification and categorization of these elements, we have offered recommendations towards greater harmonization. These can be further built on to clearly define the path forward for the field of True Cost Accounting.

The research team also performed stakeholder outreach and desk research to accurately understand and identify how current initiatives are promoting harmonization. A number of initiatives were identified, and could be broadly categorized into two groups: those who promote harmonization through facilitating discussion and development among existing initiatives and those who promote harmonization through the creation of a synthesized or overarching initiative. While the method chosen is different, both groups are making great strides towards promoting harmony in the field of TCA and setting a solid basis to continue this work in the future.

Table 2: Summary of the pathways to harmonization

Category	Specification	Pathways to harmonization
Areas of similarity	Multi-Capital scope	Establish one of the existing multi-capital frameworks as the harmonized standard or a develop a comprehensive mapping between frameworks
	Multi-stakeholder scope	Create a logical multi-stakeholder scope for specific use cases
	Materiality assessments	Establish a harmonized set of food-system indicators to regularly assess for materiality
	Valuation	Define applications and uses of existing valuation methods and when to best use each
Differences compatible with harmonization	Data collection processes	Establish an existing data collection process as the harmonized standard and integrated this standard across initiatives
	Measurement at input, output, outcome or impact level	Promote transparency around which impact pathway level is being assessed and establish a central process of defining impact through a pathway
	Reference scenarios	Require transparency around selected references for each impact assessed and avoid aggregation when using different scenarios
Differences that do not require substantial methodological review	Representation of results	Adopt a harmonized multi-capital and multi-stakeholder scope to promote comparability
	Indicators	Establish a harmonized list of indicators and the content for the most frequently assessed indicators to be included in a food-system analysis
	Monetization factors	Establish harmonized monetization factors per indicator once indicators have realized greater harmonization
	Completeness	Promote the use of harmonized materiality assessments (to include all relevant indicators)

Differences that may require substantial methodological review	Level of detail	Publishing high levels of guidance on existing methods to increase transparency and help comparability
	Welfare dimensions	Define when a particular welfare dimension is best used in terms of application
	Scope	Establish a harmonized list of indicators that offer a suggested scope for frameworks as a standard
	Aggregation of results	Transparently report on the results of each indicator separately and avoid netting of results

Bibliography

B Analytics. 2021. *The B Impact Assessment*. <https://bimpactassessment.net/>.

Barbier, E.B., D.N. Barton, A.K. Duraipapp, B.M. Fraumani, H. Gundimeda, K. Grimsrud, P. Kumar, et al. 2018. "Inclusive Wealth Report 2018." *UN environment programme*. November 21. <https://www.unep.org/resources/report/inclusive-wealth-report-2018>.

Bass, R., D. Hand, S. Sunderij, and N. Nova. 2020. "Methodology for Standardizing and Comparing Impact Performance." *Global Impact Investing Network*. November. https://thegiin.org/assets/Methodology%20for%20Standardizing%20and%20Comparing%20Impact%20Performance_webfile.pdf.

Capitals Coalition. 2020. "Draft TEEB for Agriculture and Food: Operational Guidelines for Business." August. <https://capitalscoalition.org/wp-content/uploads/2020/08/DRAFT-TEEBAgriFood-Operational-Guidelines.pdf>.

Coalition for Inclusive Capitalism. 2018. "Embankment Project for Inclusive Capitalism." *Coalition for Inclusive Capitalism*. <https://www.coalitionforinclusivecapitalism.com/wp-content/uploads/2021/01/coalition-epic-report.pdf>.

—. 2021. "Framework for Inclusive Capitalism." *Coalition for Inclusive Capitalism*. February. <https://www.coalitionforinclusivecapitalism.com/wp-content/uploads/2021/02/The-Framework-for-Inclusive-Capitalism-1.pdf>.

de Adelhart Toorop, Reinier, Jenn Yates, Matthew Watkins, Jude Bernard, and Adrian de Groot Ruiz. 2021. "Methodologies for true cost accounting in the food sector." *Nature Food* 655-663. Available through <https://rdcu.be/cx6pl>.

de Adelhart Toorop, Reinier, Jennifer Kuiper, Valerius Vandru Hartanto, and Adrian de Groot Ruiz. 2019. "Framework for Impact Statements: Beta Version." *Impact Institute*. March. Accessed July 09, 2021. <https://www.impactinstitute.com/framework-for-impact-statements/>.

- Deloitte. 2021. *Measuring the Social Impact of Corporate Investments: Social Impact Measurement Model*. <https://www2.deloitte.com/us/en/pages/consulting/solutions/corporate-social-impact-measurement-metrics.html>.
- EY. 2016. "Total Value: Impact valuation to support decision-making." *True Cost - From Costs to Benefits in Food and Farming*. <https://tca2f.org/wp-content/uploads/2019/09/ey-total-value-impact-valuation-to-support-decision-making.pdf>.
- Fanzo, Jessica, Alexandra L Bellows, L Marie Spiker, L Andrew Thorne-Lyman, and W Martin Bloem. 2021. "The importance of food systems and the environment for nutrition." *The American Journal of Clinical Nutrition* 113 (1): 7-16. <https://academic.oup.com/ajcn/article/113/1/7/6000654>.
- FAO. 2015. "Natural Capital Impacts in Agriculture." *Food and Agriculture Organization of the United Nations*. June. http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Natural_Capital_Impacts_in_Agriculture_final.pdf.
- Galgani, P., R. de Adelhart Toorop, A. de Groot Ruiz, E. Varoucha, and M. Hoppenbrouwers. 2020. "Monetization Factors for True Pricing." *True Price*. March. <https://trueprice.org/monetisation-factors-for-true-pricing/>.
- GIST. 2019. *Impact Measurement*. http://www.pixobazaar.com/backend/home/impact_meurment.
- Global Alliance for the Future of Food. 2020. *TCA Inventory*. September. Accessed March 25, 2021. <https://airtable.com/shr3eH7gXan4SqHxB/tblZcPfh1SxT2ab3E/viwhvoFXImP9gHg58>.
- Global Alliande for the Future of Food. 2022. "Untapped Opportunities: Climate Financing for Food Systems Transformation."
- Global Impact Investing Network. 2018. *MN: GIIN Initiative for Institutional Impact Investment*. <https://thegiin.org/mn>.
- Gundimeda, H. 2019. "Application of the TEEBAgriFood Evaluation Framework to the wheat value chain in Northern India." *TEEB*. Accessed March 31, 2021. <http://teebweb.org/wp-content/uploads/2020/12/Application-of-the-TEEB-Agrifood-framework-to-the-wheat-value-chain-in-Northern-India-LC-FINAL.pdf>.
- Hoekstra, R. 2019. *Replacing GDP by 2030: Towards a Common Language for the Well-being and Sustainability Community*. Cambridge University Press.
- IEF. Impact-Weighted Accounts Framework. "2022." <https://impacteconomyfoundation.org/download/1282/>.
- Impact Institute. 2020. "Integrated Profit & Loss Assessment Methodology (IAM)." <https://www.impactinstitute.com/ipl-assessment-methodology/>.

- Impact Management Project. 2021. *How investors manage impact.* <https://impactmanagementproject.com/impact-management/how-investors-manage-impact/>.
- . 2022. "Impact Management Platform." *Impact Management Project*. March. Accessed May 12, 2022. <https://impactmanagementplatform.org/wp-content/uploads/2022/04/Impact-Management-Platform-flyer-Mar-2022.pdf>.
- International Integrated Reporting Council. 2021. "International <IR> Framework." *Integrated Reporting*. January. <https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf>.
- ISO. 2019. "ISO 14008:2019: Monetary valuation of environmental impacts and related environmental aspects." *International Organization for Standardization*. <https://www.iso.org/standard/43243.html>.
- . 2006. "ISO 14040:2006: Environmental management — Life cycle assessment — Principles and framework." *International Organization for Standardization*. <https://www.iso.org/standard/37456.html>.
- . 2006. "ISO 14044:2006: Environmental management — Life cycle assessment — Requirements and guidelines." *International Organization for Standardization*. <https://www.iso.org/standard/38498.html>.
- Natural Capital Coalition. 2016. "Natural Capital Protocol." <http://www.naturalcapitalcoalition.org/protocol>.
- Net Positive Project. 2019. "Net Positive Methodology." *Net Positive Project*. January. https://static1.squarespace.com/static/5af56b9436099b397b0c0ec7/t/5c5d626d652deab29331e6c8/1549623920191/Net+Positive+Project_User+Guide_Jan+2019_Slides+for+Web.pdf.
- Nicholls, J., E. Lawlor, E. Nietzert, and T. Goodspeed. 2012. *A guide to Social Return on Investment*. January. <https://www.socialvalueuk.org/app/uploads/2016/03/The%20Guide%20to%20Social%20Return%20on%20Investment%202015.pdf>.
- Noble, J., P. O'Flynn, and A. Kazimirski. 2020. "Understanding Impact: How to use your theory of change to develop a measurement and evaluation framework." *New Philanthropy Capital*. February 20. <https://www.thinknpc.org/resource-hub/understanding-impact/>.
- PwC. 2013. "Measuring and managing total impact: A new language for business decisions." *PwC*. <https://www.pwc.com/gx/en/sustainability/publications/total-impact-measurement-management/assets/pwc-timm-report.pdf>.
- Schaafsma, M., and G. Cranston. 2013. "E.Valu.A.Te Practical Guide." *Cambridge Institute for Sustainability Leadership*. November. <https://www.cisl.cam.ac.uk/resources/publication-pdfs/evaluate-practical-guide-nov-2013-new.pdf>.

- Serafeim, G., and K. Trinh. 2020. *A Framework for Product Impact-Weighted Accounts*. January. <https://www.hbs.edu/faculty/Pages/item.aspx?num=57580>.
- Serafeim, G., T.R. Zochowski, and J. Downing. 2019. "Impact-Weighted Financial Accounts: The Missing Piece for an Impact Economy." *Harvard Business School*. https://www.hbs.edu/impact-weighted-accounts/Documents/Impact-Weighted-Accounts-Report-2019_preview.pdf.
- Social & Human Capital Coalition. 2019. "Social & Human Capital Protocol." *Capitals Coalition*. February. <https://capitalscoalition.org/capitals-approach/social-human-capital-protocol/>.
- System of Environmental Economic Accounting. 2021. "System of Environmental-Economic Accounting—Ecosystem Accounting." *UN stats*. March 5. https://unstats.un.org/unsd/statcom/52nd-session/documents/BG-3f-SEEA-EA_Final_draft-E.pdf.
- TCA Accelerator. 2020. *TCA Inventory*. <https://airtable.com/shr3eH7gXan4SqHxB/tbli2eRVrJvUOdd6h/viwCaH69bt2MFVLoS>.
- TEEB. 2018. "TEEB for Agriculture & Food: Scientific and Economic Foundations Report." *The Economics of Ecosystems and Biodiversity*. http://teebweb.org/wp-content/uploads/2018/11/Foundations_Report_Final_October.pdf.
- The Valuing Accounting Network. 2022. "The Valuing Accounting Network." *The Value Balancing Alliance*. Accessed May 13, 2022. https://www.value-balancing.com/_Resources/Persistent/b/8/3/7/b837b80cab8505cecf3340434a7e38fd99eaeada/Value%20Accounting%20Network.pdf.
- TMG Thinktank and Soil & More Impacts. 2022. "True Cost Accounting AgriFood Handbook." *TCA2F*. May. Accessed May 12, 2022. <https://tmg-thinktank.com/events/making-true-costs-visible-launch-of-true-cost-accounting-agrifood-handbook>.
- TruCost. 2015. "TruCost's Valuation Methodology." *TruCost*. May. https://www.gabi-software.com/fileadmin/GaBi_Databases/Thinkstep_Trucost_NCA_factors_methodology_report.pdf.
- True Price Foundation and Impact Economy Foundation. 2020. "Principles for True Pricing." *True Price*. February. <https://trueprice.org/principles-for-true-pricing/>.
- Tubiello, Francesco N, et al. 2021. *Environ. Res. Lett.* 16 0650.
- UN Food Systems Summit. 2021. "True Cost Accounting for Food Systems: Redefining Value to Transform Decision-making." *TEEBweb*. Accessed May 13, 2022. <http://teebweb.org/wp-content/uploads/2021/09/TechnicalBriefingNote.pdf>.
- Value Balancing Alliance. 2021. "Impact Statement Focus: Environment." *Value-Balancing*. March. <https://www.value->

balancing.com/_Resources/Persistent/8/a/f/f/8aff8d622d5a09f9af18a062a71b9a3201f2ea3e/20210302_VBA%20Method_paper_Environmentals.pdf.

van Bergen, Barend, James Mackintosh, and Mark McKenzie. 2014. "A New Vision of Value: Connecting corporate and societal value creation." Accessed March 29, 2022. <https://assets.kpmg/content/dam/kpmg/pdf/2014/10/a-new-vision-of-value-v1.pdf>.

World Intellectual Capital/Assets Initiative. 2016. "WICI Intangibles Reporting Framework." *WICI Global*. May 16. https://www.wici-global.com/wirf/WICI_Intangibles_Reporting_Framework_v1.0.pdf.

WRI and WBCSD. 2004. "Greenhouse Gas Protocol." Revised Edition.

Appendix A: Glossary

The following definitions provide context for the above work. The definitions are taken directly from the initiatives we analyzed, preferring those available in the Global Alliance for the Future of Food's TCA Inventory. Where key terms were absent from the TCA Inventory, suitable definitions from available initiatives were used. The chosen definitions thus hold for the terms used in this document and are not intended to represent all uses of these terms in the TCA or broader impact-assessment sector.

- **Capital:** The economic framing of the various stocks that embodies current and future streams of benefits that contribute to welfare dimensions²³
- **Dependency:** Reliance on or use of a capital required to produce goods and services²⁴
- **Impact:** The difference between the outcome of a realized activity and the counterfactual outcome in the reference activity²⁵
 - **Absolute impact:** The impact of the organization's activities when compared to a no-alternative reference scenario in which no activities occur
 - Example: The carbon emissions as reported under scope 1, 2 and 3 of the GHG protocol are absolute (they simply report what is emitted)
 - **Marginal impact:** The impact in which the organization's activities are compared to an alternative reference scenario in which alternative activities would be expected to occur where the organization is absent
 - Example: An assessment that shows that use of green energy helps to reduce climate change, is marginal (green energy has lower emissions than a reference of grey energy).
 - **Direct impact:** An impact that is caused by an organization's own operations
 - **Indirect impact:** The impact that arises outside of the organization itself, and where the activities of the organization have a direct or indirect influence on the occurrence and/or size of that impact
- **Impact pathway:** a quantifiable chain of effects and counterfactual effects linking a specific activity of an organization to its (non-valued and valued) impact, including after attribution.²⁶
 - **Input:** Resources used by a company to conduct its business activities (e.g., investment in safety training)²⁷
 - **Output:** The direct immediate result of business activities, products and services (e.g., number of employees trained)²⁸

²³ Based on the definition in the TCA Inventory (TCA Accelerator 2020)

²⁴ From the TCA Inventory (TCA Accelerator 2020)

²⁵ From Integrated Profit & Loss Assessment Methodology (IAM) (Impact Institute 2020), also for definitions of absolute, marginal, direct and indirect impact

²⁶ From Framework for Impact Statements (de Adelhart Toorop, Kuiper, et al. 2019)

²⁷ From Embankment Project for Inclusive Capitalism (Coalition for Inclusive Capitalism 2021)

²⁸ Ibid.

- **Outcome:** A change in the extent or condition of the stocks of capital (natural, produced, social and human) due to value-chain activities²⁹
 - Example: training employees in health & safety will result in less fatal or non-fatal occupational accidents
- **Impact:** The difference between the outcome of a realized activity and the counterfactual outcome in the reference activity³⁰
- **Materiality:** An impact or dependency is material if consideration of its value, as part of the set of information used for decision making, has the potential to alter that decision³¹
 - Impacts and/or dependencies are material if they have either a substantial effect on the (future) earnings of the organization, or if they substantially affect the welfare of a stakeholder group.
- **True Cost Accounting (TCA):** an evolving holistic and systemic methodology to measure and value the positive and negative environmental, social, health and economic costs and benefits to facilitate business, consumer, investor and/or policy decisions³²
- **Valuation:** The process of estimating the relative importance, worth or usefulness of impacts and/or dependencies to people or society, or to a business in a particular context; valuation may involve qualitative, quantitative or monetary approaches, or a combination of these³³
- **Welfare:** Welfare is the collection of the current and future value enjoyed by stakeholders. It is intended to reflect the inclusive wealth concept of enjoyed welfare³⁴
- **Welfare dimension:** A welfare dimension is a value that reflects the overall welfare of society or a particular stakeholder group³⁵

²⁹ From the TCA Inventory (TCA Accelerator 2020)

³⁰ From Integrated Profit & Loss Assessment Methodology (IAM) (Impact Institute 2020)

³¹ From the TCA Inventory (TCA Accelerator 2020)

³² From True Cost Accounting for food systems: redefining value to transform decision-making (UN Food Systems Summit 2021)

³³ Based on the definition in the Social & Human Capital Protocol (Social & Human Capital Protocol 2019, 11))

³⁴ From Integrated Profit & Loss Assessment Methodology (IAM) (Impact Institute 2020)

³⁵ Ibid.

Appendix B: Development of Harmonization Initiatives

This annex builds on the matrix presented in chapter 8. It theorizes how these initiatives will develop in the future and provides a brief justification for their inclusion in the matrix. These directions are also based on the opinions of the Impact Institute research team, based on the public information available. The direction of development was determined through information such as statements of future work or identifying trends in their historical work until the present.

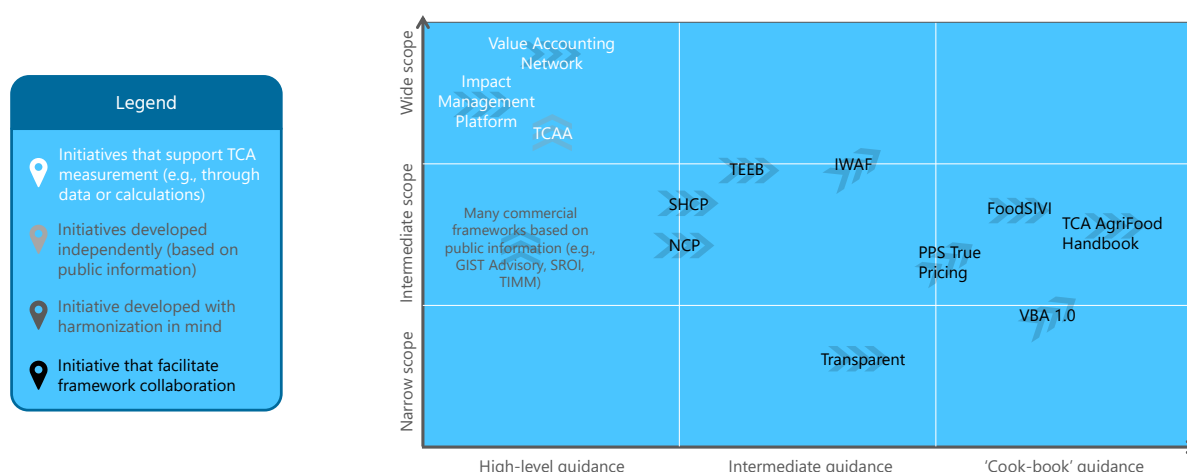


Figure 14: Projection of the development of harmonization initiatives

Justification for the inclusion of these initiatives

- **FoodSIVI**: The FoodSIVI project involved a collection of organizations, academics and food system experts striving to create a wholistic TCA methodology for assessing the true costs of the food system. The organization developed and published a report on their [TCA method](#), defining their suggested framework for TCA of food systems.
- **Impact Weighted Accounts Framework (IWAF)**: The [IWAF](#) is a collaboration between the Impact Economy Foundation, Harvard Business School and others. Together they develop [a set of employment related impacts](#) (across multiple capitals) that can be assessed at an organizational level.
- **Natural Capital Protocol (NCP)**: The [NCP](#) resulted through various organizations collaborating to define a standard approach for assessing natural capital. The protocol only details natural capital related topics, with a focus on scoping, and encompasses a wide variety of measurement options, leaving many choices up to the user.
- **Publiek-Privaat Samenwerking (PPS) True Pricing**: The [PPS](#) is a collaboration between True Price and Wageningen University to develop comprehensive methodology documents to assess a limited number of food-related social and environmental impacts, detailing how to measure from data collection to monetisation.

- Social & Human Capital Protocol (SHCP): The [SHCP](#), similar to the NCP, details social and human capital measurement, with a focus on scoping. The protocol incorporated extensive stakeholder consultation and resulted in a broad guidance document covering many measurement options and leaving ample room for user choice.
- TCA AgriFood Handbook: [The TCA AgriFood Handbook](#) is a comprehensive TCA methodology created by TMG Thinktank and Soil & More Impacts to provide the agri-food sector with concrete instructions on how to measure and value the hidden costs of food production. The TCA AgriFood Handbook is built on the concept of four capitals advance by the TEEB AgriFood Evaluation Framework and leverages the strengths of existing methods.
- Transparent: [Transparent](#) is an initiative of the Capitals Coalition, WBCSD and the VBA, amongst others to develop a limited list of natural capital impacts/dependencies to measure at an organizational level, including [stakeholder research](#) from users.
- Value Balancing Alliance 1.0 (VBA): The [VBA](#) is a coalition of private companies, together with pro-bono consultants and other organizations, working to create a framework for measuring [natural and social impacts](#). The resulting framework provides a detailed and prescriptive method for measuring a limited number of impacts.

Appendix C: summary of TCA initiatives analyzed

This appendix lists and summarizes the 35 initiatives analyzed by the research team, in the words of the research teamTable 3. This summary is a shortened version of a larger analysis, used to reach the conclusions detailed in this report. The full analysis is available upon request.

Table 3: Summary of TCA initiatives analyzed³⁶

#	Initiative	Parent organization	Description
1.	A4S Essential Guide Series	A4S	A4S measures and valuates the social and environmental impact of an organization or product. It is intended as a guidance piece for organizations to perform the assessment themselves. The end result is intended for investors and shareholders, to demonstrate the long-term value creation of the organization through its activities and/or production processes.
2.	Beyond GDP	OECD	Beyond GDP focuses on identifying methods to gauge the situation of people outside of the GDP measure of their country. Various methods are identified, but ultimately none are suggested as a solution. This is an ongoing project, and one method may be selected to supplement or replace GDP in the future.
3.	B Impact Assessment	B Analytics	B Impact Assessment offers a free assessment that allows organizations and investors to qualitatively gauge their impact based entirely on self-reported information. The resulting impact scores can be compared to sector averages (based on anonymized input of others) and used to steer on impact. It can be performed on an organizational or investment level.

³⁶ This table is based on supplementary material for the *Nature Food* article '[Methodologies for true cost accounting in the food sector](#)' (de Adelhart Toorop, Yates, et al. 2021). The original table included 32 initiatives. The table in this version of the report additionally contains the Global Farm Metric, TCA AgriFood Handbook and Transparent (entries 9, 25 and 30).

4. E.Valu.A.Te	Cambridge Institute for Sustainability Leadership	E.Valu.A.Te measures the effect that biophysical changes in the ecosystem caused by food production have on human well-being. It offers a large level of freedom to the user in how to measure and value environmental impacts. Notably, this framework explicitly does not measure biodiversity impact.
5. Food System Impact Valuation Initiative	FoodSIVI	The Food System Impact Valuation Initiative builds on the work of the Capitals Coalition and life-cycle assessment measurements to offer strict guidance on measuring food systems' impact on the six capitals described by IIRC. A single method for measurement is suggested. Additionally, the documentation includes an in-depth discussion of other measurement and valuation possibilities.
6. The Framework for Inclusive Capitalism	The Coalition for Inclusive Capitalism	The Framework for Inclusive Capitalism is designed to quantitatively measure the outcome of organizational activities on stakeholders, based on extensive stakeholder input. The guidance includes advice on how to develop strategies to steer based on the results of the quantitative measurement.
7. GIIN Methodology	Global Impact Investing Network	The GIIN Methodology helps investors systematically measure social and environmental impact according to their specific goals, building on the (publicly available) IRIS+ database. It offers significant guidance but leaves freedom to the investor on the final assessment methods.
8. GIST Impact Assessment	GIST	GIST is a private sustainability consultancy that has experience in impact measurement and valuation, including the creation of the first integrated profit and loss statement in the water sector. The GIST Impact Assessment measures changes in human well-being caused by flows of financial, human, social and environmental capital.
9. Global Farm Metric	Sustainable Food Trust (SFT)	The Global Farm Metric is the only TCA methodology designed specifically for a farm-level assessment. The methodology was additionally built with extensive stakeholder input from the farms, a process that is not often seen, even for food-specific TCA methods. The resulting methodology is not specific to a given product or activity and thus can be used to assess any farm.

10. The Guide to Social Return on Investment	Social Value UK	The Guide to Social Return on Investment offers a complete guidance for the calculation of the so-called Social Return on Investment. This is a single value, representing the monetized economic, social and environmental impact created per monetary unit invested. The analysis can be performed on an organizational or investment level can be done by a user through this guidance alone.
11. Impact Management Project	Bridges Insights	The Impact Management Project offers a free and easy-to-use methodology for qualitatively assessing the impact of an organization on its stakeholders. The impact assessed reflects the changes in stakeholder's lives caused by organizational activities.
12. Impact Weighted Accounts	Harvard Business School	Harvard Business School's Impact Weighted Accounts is an impact assessment and valuation framework. The methodology has a generic part, and a more detailed part for a subset of indicators. These can be (mostly) calculated based on publicly available data.
13. Inclusive Wealth Report	UN Environment Programme	UN Environment Programme's biennial "Inclusive Wealth Report" provides an alternative to GDP for the measurement of social well-being. It takes into account the flows of three capitals (natural, human and produced) over one year, monetized using shadow prices. The results can be used by policy makers to introduce and track innovations based on social well-being metrics.
14. (Impact Institute) Integrated Profit & Loss Statement	Impact Institute	The Integrated Profit & Loss methodology developed by Impact Institute measures the impact of an organization and its value chain on all six of the IIRC Capitals. This method combines impacts measured through a well-being dimension and impacts measured through a rights-based dimension.
15. International <IR> Framework	International Integrated Reporting Council (IIRC)	The IIRC is a standard-setter for corporate reporting. They have developed a structure for impact analysis using six capitals (financial, intellectual, manufactured, human, social and environmental), representing all stocks and flows of value an organization can affect. The capitals are used in multiple other TCA frameworks.
16. ISO 14008	International Organization for	ISO 14008 offers guidance in addition to other ISO standards. Specifically, it details how to monetize the results of life-cycle assessment (LCA) measurements. Notably, it outlines a specific set of preferred monetization methods.

Standardization (ISO)	All initiatives that use LCA for impact measurement (based on the other ISO standards) can use these standards in the valuation step.
-----------------------	---

17. ISO 14040 and 14044	International Organization for Standardization (ISO)	ISO standards 14040 and 14044 significantly detail the guidelines for undergoing a Life-Cycle Assessment (LCA). They highlight which method choices are left up to the user and which are strict boundaries for measurement. LCA is utilized by multiple other impact assessment frameworks in the measurement and quantification steps for natural capital elements.
18. Natural Capital Protocol	Capitals Coalition	The Natural Capital Protocol is a standard-setter for measuring and valuating natural capital, developing one of the most comprehensive guidance pieces on impact scoping and materiality assessment. In a number of instances, several options are provided for the user to choose from, and, as such, additional guidance or expertise might be necessary to measure and value impact.
19. Net Positive Project	Net Positive Project	The Net Positive Project is an initiative headed by corporations to measure and reduce their social and environmental impact. Impacts are measured as the outcomes of production processes, such as emissions or changes in societal well-being. The full methodology is currently not available publicly.
20. New Philanthropy Capital	New Philanthropy Capital	The New Philanthropy Capital developed a framework for quantitative impact measurement aimed at charities. It includes an in-depth discussion of how to identify and collect data as well as simple guidance on defining impact from a theory of change.
21. Product Impact-Weighted Accounts	Harvard Business School	Harvard Business School's Product Impact-Weighted Accounts Framework is a further development of the Impact Weighted Accounts initiative. It applies a unique scope, measuring seven impacts resulting from the entire production of a product over the course of a year. It is possible for a user to measure the impact of their products using only the published guidance and (mostly) publicly available data.

22. Social Impact Measurement Model	Deloitte	The Social Impact Measurement Model (SIMM) is an AI-based impact assessment program. It quantitatively measures the social and economic impact of investments in a given county (it is currently only available in the US) using only publicly available data. It offers a published standard list of impacts to be assessed.
23. Social & Human Capital Protocol	Capitals Coalition	The Social & Human Capital Protocol is a widely accepted and well-developed guidance piece for measuring social and human impacts; one of the first of its kind. Like the Natural Capital Protocol, in some cases, method decisions are not prescribed, but options are presented to the user. Additional guidance or expertise will be necessary to measure and value impacts using this approach.
24. System of Environmental Economic Accounting	UN, European Commission, FAO, OECD, World Bank Group	The System of Environmental Economic Accounting (SEEA) framework offers a comprehensive way for larger systems (nations and sectors) to account for natural capital. It explicitly keeps track of the economic value of resources, and sums these per resource and per sector, providing a holistic overview of natural resource flows. into, within and out of the national economy.
25. TCA AgriFood Handbook	TMG Thinktank and Soil & More Impacts	The TCA AgriFood Handbook is a food-specific TCA guide geared towards helping agri-food businesses assess the true costs of food production. It offers a comprehensive and user-friendly method, with accompanying tools for measurement. Notably, the method does not include the consumption stage and cannot be used to assess animal products.
26. TEEBAgriFood Evaluation Framework	UN Environment Programme, The Economics of Ecosystems and Biodiversity for Agriculture and Food (TEEBAgriFood)	The TEEBAgriFood Evaluation Framework offers the most comprehensive rationale of both the need to assess externalized costs from food system activities and articulates the principles, definitions, and required elements to successfully conduct a TCA analysis. Developed through collaboration with 150 scholars from 33 countries, it serves as a knowledge basis for those trying to understand the need for TCA and its relation to, and use in, agriculture. It does not include strict guidance on selecting which methods to use from those presented.

27. TEEB for Agriculture & Food: Operational Guidelines for Business	Capitals Coalition and TEEBAgriFood	In partnership with the TEEBAgriFood Programme, Capitals Coalition adapted the TEEBAgriFood Evaluation Framework to create TEEB for Agriculture and Food: Operational Guidelines for Business. This publication offers a comprehensive impact framework specific to measuring food systems. Similar to the TEEBAgriFood Evaluation and Capitals Coalition Natural and Social and Human Capital Protocols, methods – specifically about measurement and monetization – are not prescribed, but options are provided.
28. Total Impact Measurement and Management	PwC	PwC's Total Impact Measurement and Management (TIMM) framework can be used in two forms, as a full impact assessment (measuring a published list of 20 impacts using organization data) or as an impact explorer (measuring a subset of six impacts using public data). The framework is developed by a private organization and offered as a paid service. Details of the methodology are not published in great detail.
29. Total Value	EY	EY's Total Value is a developed impact assessment tool resulting in one final value for impact. The published methodology makes use of common impact assessment elements, like impact pathways and measurement and valuation methods.
30. Transparent	Capitals Coalition, VBA, WBCSD, EU LIFE program	The Transparent method is a multi-actor effort to harmonize the measurement of natural capital impacts. It is most applicable at organizational and product levels and builds on the VBA's assessment method. It aims to offer in-depth guidance on how to assess included impacts, including calculation frameworks and monetization factors.
31. TruCost	TruCost	The TruCost methodology assesses the negative environmental impacts/dependencies resulting from the biophysical changes an organization creates. As such, the assessed impacts are always negative. TruCost developed one of the earliest extended profit and loss accounts with Puma in 2012 and has collaborated with various leaders in the impact measurement and valuation field. TruCost was acquired by S&P Global in 2016.
32. True Pricing	True Price	The True Price methodology focuses on measuring and valuing the social and environmental impacts/dependencies of products and services. The starting point is rights-based (focus on international human rights, labor rights and environmental rights). Monetization factors are based on the cost of remediating the rights violations.

33. (KPMG) True Value	KPMG	KPMG True Value measures and monetizes the economic, social and environmental impact of organizations or investments. In the end a single value is reported (meaning that positive and negative impacts/dependencies are netted).
34. Value Balancing Alliance (VBA)	VBA	The Value Balancing alliance is a coalition of private companies funded by the EU to create an impact measurement and valuation framework. The developed framework builds strongly on the work of the Capitals Coalition. However, unlike the Protocols, this framework offers very specific guidance on the measurement and valuation of environmental impacts. In the future, a similar in-depth guidance will be published for social impacts.
35. WICI Intangibles Reporting Framework	World Intellectual Capital Initiative (WICI)	The WICI Intangibles Reporting Framework defines and measure intangibles at an organizational level by defining KPIs for each dimension of intellectual capital owned by the organization for the present and future. Intellectual capital as used by the WICI framework maps to multiple capitals according to the IIRC (also human and social).

Address: Haarlemmerplein 2, 1013 HS, Amsterdam
Site: **www.impactinstitute.com**
Facebook: [/impactinstitute.com](https://www.facebook.com/impactinstitute.com)
Twitter: [impact_inst](https://twitter.com/impact_inst)
Tel.: +31 202 403 440
Mail: info@impactinstitute.com

