

HOW TO FIND THE VALUE OF CIRCULAR IMPACT IN BUSINESS

Circular Impact Measurement
and Financial Reporting



A white paper of

COALITION CIRCULAR ACCOUNTING



CONTENTS

1. INTRODUCTION	6
2. MEASURING CIRCULAR IMPACT	8
3. CIRCULAR IMPACT AND FINANCIAL REPORTING	16
4. CHALLENGES AND OPPORTUNITIES	20
5. A CALL FOR ACTION: STEERING ON IMPACT	22
6. CONCLUSIONS	24
APPENDIX	26
REFERENCES	26
COLOPHON	29

KEY TAKEAWAYS

This white paper elaborates on the need and potential of integrating information on circular impact into the financial reporting of a company. Key takeaways include:

- 1 STANDARDISATION:** There needs to be comparability between different circular impact measurements to create a level playing field.
- 2 IMPORTANCE OF CIRCULAR IMPACT DATA:** Steering based on numbers means only what is measured can be managed. Circular impact should explicitly inform management and financial decision making.
- 3 GETTING STARTED:** Start measuring and monitoring in order to practise generating and using data. Generating circular impact data benefits outweigh the costs. If done well, it generates additional insight for improving processes and conditions for overall increased value and can be considered an investment that yields sufficient return.
- 4 CIRCULAR IMPACT AS A COMMUNICATION TOOL:** Circular impact should be evident and visible to convince clients, investors, financiers and other stakeholders of the added value of measuring and reporting on circular impact.
- 5 INTEGRATION OF NON-FINANCIAL INFORMATION IS KEY:** Financial reporting should integrate social and environmental aspects into decision making, thereby assessing the value of a company's overall performance across different indicators. Importantly, although environmental social and governance information has financial consequences, this often remains a blind spot, which poses a risk to companies and investors.

NEXT STEPS

The integration of circular impact measurement into financial reporting is developing quickly. In order to accelerate the process of standardisation and integration, companies, investors, accountants, standard setting institutions and governments all have a role to play.

- 1 COMPANIES:** We recommend companies take a bottom up approach in 'learning by doing' for how to report on impact, recognising that the beginning stages will not be perfect. They can approach organisations such as Impact Institute for methodological support or consult initiatives providing best practices for inspiration. They must also strive to implement good governance processes through impact measurement and the public sharing of this data.
- 2 INVESTORS:** Ask for circular impact data both from companies and auditors. Link financial products to sustainability, team up with others to create methods for impact identification, measurement, reporting and accounting.
- 3 ACCOUNTANTS:** Raise awareness for the importance of integrating non-financial information into financial reporting. Accountants in business should experiment with integrating non-financial information in their reporting. External auditors should support field experiments and provide assurances for impact data upon request. They can increase assurance on the reliability of the impact data and prevent greenwashing in integrated corporate reporting. This way, accountants can ensure that not only the positive but also the negative impacts are reported in a properly integrated and balanced way. Last but not least, accountants also play an advisory role in the establishment of the reporting guidelines.
- 4 FINANCIERS:** Ask companies to provide impact information and ask auditors for reliable integrated information. By doing so, financial institutions will increase awareness, gain insight on where the risk lies, and link this data to the firm's risk assessment. Additionally, the financial sector should cooperate more; banks and equity investors can learn from each other and cooperate in practicing with- and adopting frameworks such as the ISO standards¹ or the Circular Transition Indicators.²
- 5 POLICYMAKERS:** Track and support impact reporting; incentivise and demand submission of circular impact data in financial reporting.

1 INTRODUCTION

Financial reports are essential for assessing the economic health, profitability and future potential of a company. Company boards, financiers and investors largely rely on global standards for accounting and reporting (such as the International Financial Reporting Standards (IFRS)) to present key financial figures for future goal setting. In recent years, climate change mitigation and adaptation efforts and treaties such as the Paris Agreement have led to financiers and investors including the environmental and social impact of companies in decision making processes. At the same time, businesses across sectors are searching for ways to stay competitive while improving their environmental and social impact.

The circular economy is an economic system that combines economic, environmental and social prosperity. Circular businesses typically employ strategies that aim to extend the lifespan of products and materials for as long as possible, at their highest value. Waste is designed out of the system by using resources in cyclical ways. Moreover, the circular economy* assumes the use of renewable energy for production processes and aims to foster social inclusivity.³

Implementing circularity in business activities essentially entails incorporating externalities (i.e. impact) in the business and revenue model. Compared to their linear counterparts, circular companies may have a lower financial performance, due to the costs incurred for activities that have a positive economic, environmental or social impact. Therefore, in striving for a fair assessment of a company's performance, it is key to create a level playing field and rate all companies the same way. This requires different information and different assessment frameworks. Here, circular impact measurement can offer a solution.

In addition to the financial management information provided in financial statements, companies and financiers are looking for additional information with which they can optimise business operations and better estimate risks. Relating circular impact to financial impact can enable more substantiated decision-making and unveils a company's *licence to operate*.

We currently see many initiatives that aim to develop methods for measuring circular impact and different organisations that have developed methods for broadening the scope of business reporting to include sustainability disclosure. The leading organisations and their frameworks are described in more detail in this paper. A so-called Comprehensive Reporting group, consisting of the Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), International Integrated Reporting Council (IIRC) and Sustainability Accounting Standards Board (SASB),⁴ has announced to work closely together on creating standardisation for impact measurement and reporting. Moreover, the IFRS Foundation and the European Financial Reporting Advisory Group (EFRAG) are working on this topic.

The Coalition Circular Accounting (CCA) has worked with knowledge partner **Impact Institute** on an actual impact case involving **Meerlanden**, a material and energy recovery company. We describe the application of Impact Institute's methodology to avoid a scoping exercise of a scattered field of different impact assessment frameworks. The goal of this impact assessment is to understand the actual positive and negative impacts, enable clear reporting and communication about these impacts and to take these impacts into consideration for strategic and financial decision making. We present the findings in this white paper.

*For a broad definition of Circular Economy please see Circle Economy. (2021). *The circularity gap report*. Circle Economy. Retrieved from: [Circle Economy website](https://www.circleeconomy.com/en/circularity-gap-report)

WHAT WE PRESENT IN THIS WHITE PAPER

This white paper is the result of a project by the CCA, a multidisciplinary coalition with the goal of identifying and overcoming accounting-related challenges that hinder the transition to the circular economy (see colophon for additional information on the CCA). This white paper elaborates on the need and potential of integrating information on circularity and impact into the financial reporting of a company, based on the findings from the Meerlanden impact case. The white paper is structured as follows:

- Chapter Two introduces the Dutch recycling company Meerlanden, which functions as the impact case, and the Impact Institute, the knowledge partner of this project.
- Chapter Three discusses why measuring circular impact is necessary, and suggests approaches on how to integrate it into financial reporting.
- Chapter Four focuses on the challenges of integrating circular impact measurement into financial reporting.
- Chapter Five outlines the calls to action for different stakeholder groups.
- Conclusions are provided in Chapter Six.

2 MEASURING CIRCULAR IMPACT

THE IMPACT CASE: MEERLANDEN

The case study for this white paper is Dutch governmental organisation Meerlanden. It is an innovative material and energy recovery company which focuses on creating green energy. With approximately 500 employees, it performs this service for nine different municipalities and about 4,000 companies. Meerlanden has a clear vision and directly contributes to the Dutch government's goal to become entirely circular by 2050.⁵ Their motto 'together faster circular' reflects their contribution to creating a circular society by stimulating and educating on reuse and recycling.⁶ In the role of the 'sustainable resources director' (*duurzame grondstoffenregisseur*)⁷ they actively engage in retaining as many materials in the global resource streams as possible and uncover unseen value of different waste streams. At the same time, they also take responsibility and action for a fair and inclusive society. For example, 100 of the 500 employees were considered distant from the labour market before Meerlanden actively reached out to them with the chance for reintegration. In 2019, Meerlanden had a revenue of approximately €75 million. Besides their waste collection and processing, they have a large variety of other business activities such as public space maintenance and street cleaning.

Meerlanden began investigating ways to gain insight into the positive and negative impacts of their products and services, to include these factors in their governance and decision making processes. Using the Impact Institute's impact

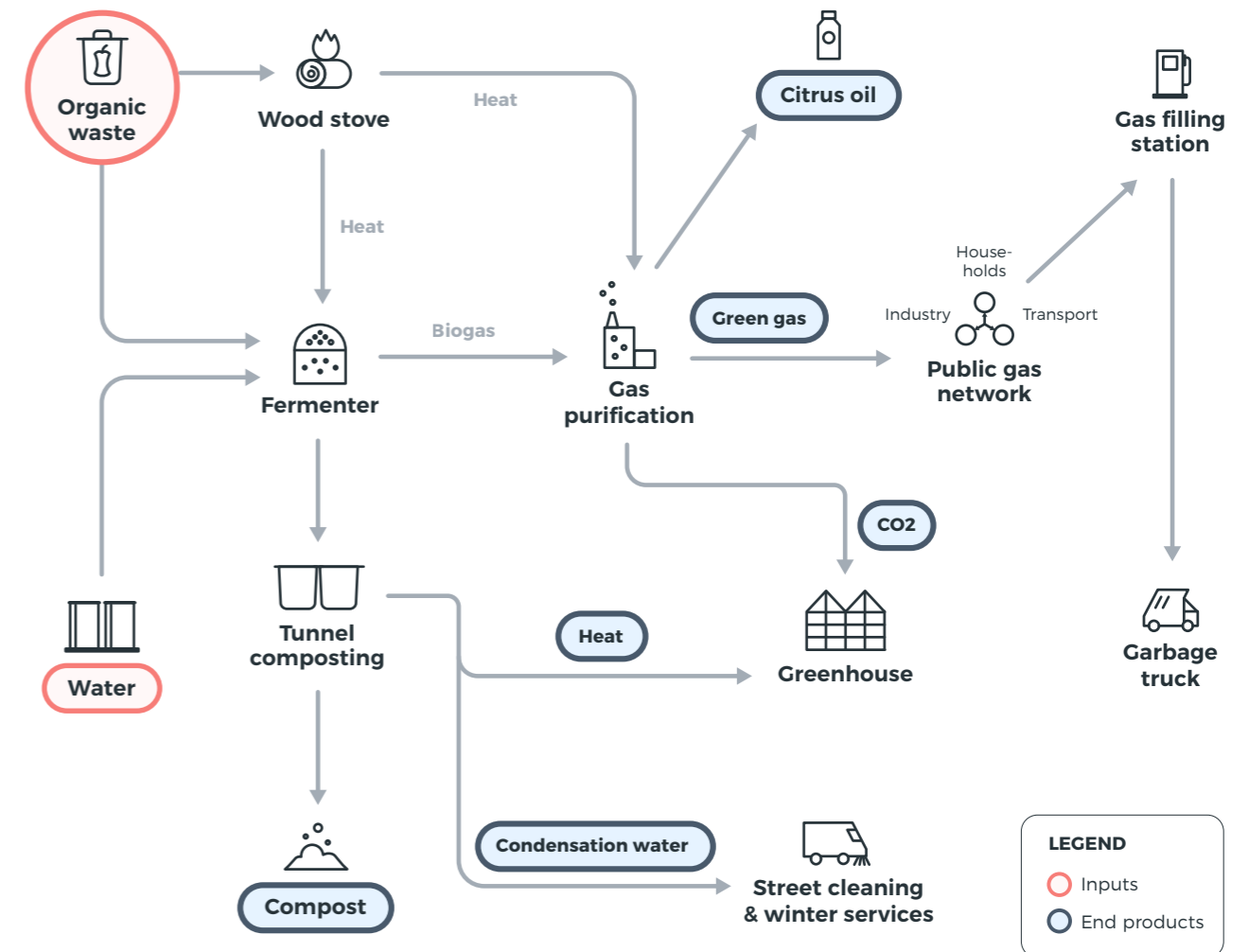
measurement method, a 'resource compass' (*grondstofkompas*) was created. This 'compass' displays impacts ranging from CO2 emissions to employee wellbeing and the preservation of scarce materials.

In order to narrow the focus of this paper, we limited the scope to the organic waste stream (*Groente-Fruit-Tuinafval/GFT*),* specifically focusing on how waste is collected and processed into new resources. We believe if we can successfully measure and quantify the impact of the organic waste stream, the method can then be scaled and applied to other waste streams as well.

ORGANIC WASTE STREAMS: THE GREEN ENERGY FACTORY

Meerlanden uses an innovative process to ferment and compost organic waste (shown in figure one). It collects organic waste from companies and households. It is then processed in their 'green energy factory' to create biogas—which is further separated into green gas, citrus oil and CO2. The green gas is further enriched with fragrance, pigment and nitrogen before it is distributed to the public gas network; the citrus oil is used for non-toxic weed control. In the near future, CO2 will be delivered to neighboring greenhouses. The byproduct is the digestate (the remains of anaerobic digestion) which is turned into high-quality compost. The heat created during the composting process is captured and transferred to greenhouses in the neighbourhood. Moreover, the heating results in water condensation that is captured and is used all year round for street cleaning and winter services.

Figure One: The green energy factory: Meerlanden's organic waste processing. Figure is adapted from Meerlanden.



*We use the term 'organic waste', while the literal translation is 'vegetables-fruit-garden waste', which also includes all other kinds of mixed biodegradable waste.

**THE KNOWLEDGE PARTNER:
IMPACT INSTITUTE**

Impact Institute (also known from its subsidiary *True Price*) is a social enterprise. Its mission is to empower organisations and individuals in the transition from a financially-driven to an impact-driven economy. To facilitate this, it created a common language and open source standards for impact and provides tools, training and services to implement those standards. The Impact Institute successfully applied their methodology to a variety of Dutch firms, including ABN AMRO bank.

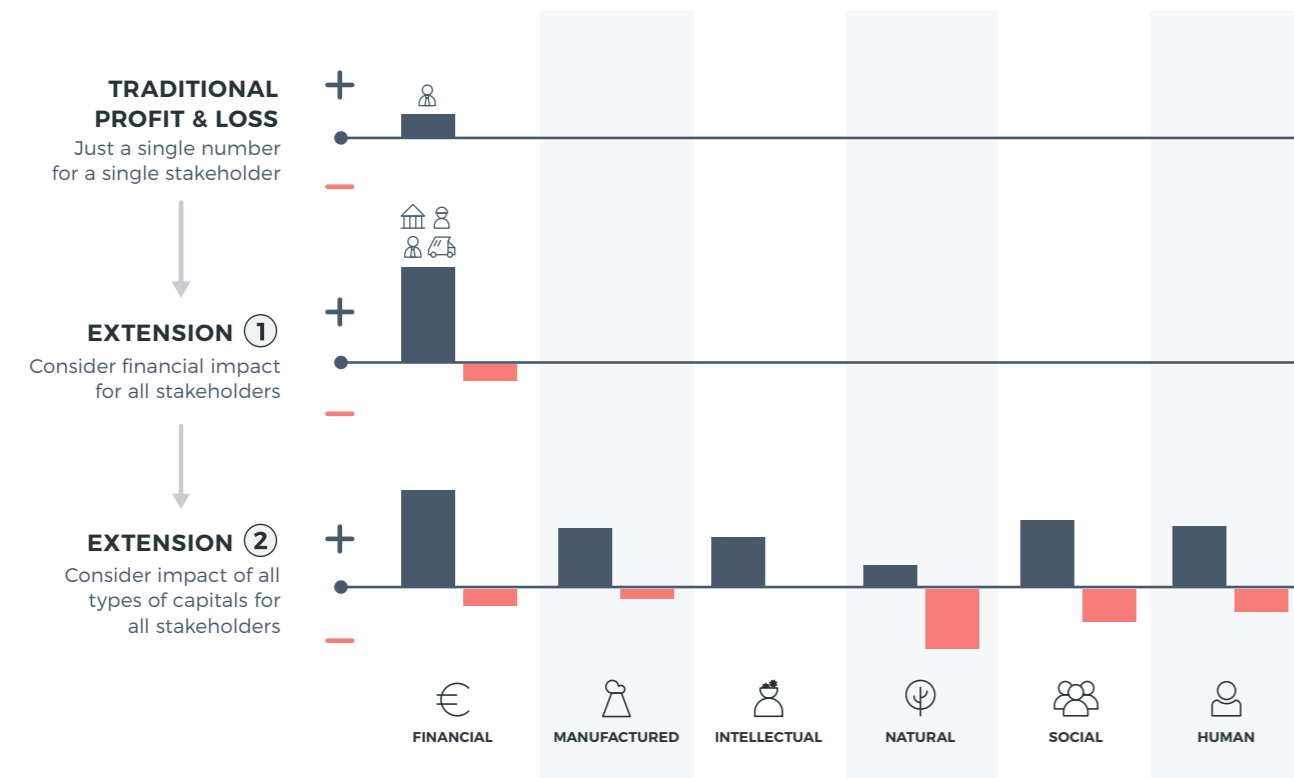
In a future *impact economy*, organisations measure, report and steer based on their impact. To do this, an organisation requires impact information. In other words, an answer to the question: what is the difference you make with your company and what is its value to society? When this information is retrieved it can be related to the profit and loss account of an organisation.

Integrated Profit & Loss

Forming the base of its impact methodology is the Impact Institute’s rigorous Integrated Profit & Loss (IP&L) approach. In measuring and valuing positive and negative impact, it generates a systematic, representative and quantified overview of an organisation’s impact for its stakeholders. The IP&L approach is an extension of the traditional profit and loss account in two ways (see Figure Two):

1. Firstly, it considers the value created for *the stakeholders* of an organisation—such as its clients, employees and society—in addition to traditionally only profit for investors; and
2. Secondly, value created includes both *non-financial and financial value*. The IP&L approach includes value in the form of six capitals: financial, manufactured, intellectual, human, social and relationship, and natural.⁸

Figure Two: Extending Profit & Loss to integrate 1. stakeholders and 2. capitals. Figure is adapted from the Impact Institute.



By considering different types of capital and stakeholders, the IP&L approach aims to provide a holistic assessment of an organisation’s impact. Negative and positive impacts of different dimensions are disclosed separately to prevent an inappropriate netting effect. For example, a positive impact on employees should never be offset by a negative impact on the climate.

To assess the value of negative social or environmental impacts, the Impact Institute uses monetisation factors based on the True Price methodology,⁹ which enables a comparison of social, environmental and financial impacts. For negative impacts—the damage done to others resulting from an organisation’s economic activities—the best solution is to restore the damage done. By taking these ‘restoration’ costs into account, we can get a holistic estimate of an organisation’s impact. In some cases, restoring negative impact is not possible. In that case, the societal costs are estimated by considering what would be a reasonable compensation.

Reference scenarios and impact pathways

Impact is about making a difference compared to a reference scenario. Impact pathways allow us to link the inputs an organisation uses for its activities with the outputs and associated outcomes. By comparing these outcomes to the outcomes of a chosen reference scenario, impact can be calculated. Doing this in a structured manner for each impact provides consistency of the impact measurement.

APPLYING THE METHODOLOGY

In this paper we apply the Impact Institute’s methodology to measure the impact of Meerlanden’s organic waste collection and processing activities—in other words, the impact scenario. The reference scenario implies that the organic waste is not separately collected and valorised, but is instead collected and incinerated as part of the residual waste. The comparison between the impact scenario and the reference scenario shows that the impact scenario has a lower negative environmental impact and provides products of greater value (see Figure Three).

Figure Three: Organic waste impact flow diagram. Figure is adapted from the Impact Institute.

	INPUT	ACTIVITY	OUTPUT	OUTCOME
Meerlanden's current activities	Municipal organic waste.	Meerlanden separately collects and recycles organic waste into valuable products.	Energy use for collection and recycling process. Recycled products such as biogas, compost, CO2 and heat.	Organic waste recycling has an impact on the environment but replaces the production of products from virgin materials.
Reference	Municipal organic waste.	Meerlanden does not separately collect organic waste, so it's collected as part of residual waste and incinerated.	Energy use for collection and incineration process. Heat and electricity.	Organic waste incineration has an impact on the environment but replaces generation of heat and electricity from virgin materials.

Figure Four: Integrated Profit & Loss showing the four capitals and monetised 23 impacts of Meerlanden's organic waste resource stream per tonne in 2020. Figure is adapted from the Impact Institute.



Based on the IP&L approach, the impact of Meerlanden's organic waste stream was assessed and compared to the impact of the reference scenario. Meerlanden and Impact Institute have decided to focus on four out of the six capitals in their *resource compass*: natural, human, manufactured and financial (note: Intellectual and social capital remained out of scope in this exercise). The four capitals cover a total of 23 measured impacts. An overview of results is displayed in Figure Four.

Based on the previously introduced methodology, the impacts were monetised. For instance, organic waste emitted 133 kilograms of CO2e per processed tonne in 2020. The reference stream, residual waste, emitted 1,169 kilograms of CO2e per processed tonne in 2020. Based on the Impact Institute's methodology, every kilogram of emitted CO2 has a negative impact of €0.152, which adds up to a negative impact of €670,000 for the organic waste stream and €11,100,000 for the residual waste stream in 2020 (see Figure Five).

The analysis spurs some interesting insights. For example, we can see that organic waste recycling has a substantially lower negative environmental impact than residual waste incineration. This is driven by two factors, namely (1) the energy used for the incineration process of residual waste—it takes large amounts of energy to generate sufficient heat to incinerate the combination of materials in residual waste, and (2) the impact of incinerating resources instead of reusing them. The destruction of resources through incineration means that the value of the material is lost entirely. As a consequence more virgin materials have to be sourced, which could have been prevented by recycling.

Recycling of organic waste has a smaller environmental impact than incineration. The products that Meerlanden produces with its recycling business creates economic value (manufactured capital) that almost equals the financial value of energy created by incineration. A tax levy on the incineration of waste could tip the business case of processing organic waste over towards profitability. This indicates the future economic and impact potential of recycling.

Figure Five: Example of monetisation of saved CO2 emissions for the organic waste and its reference stream. Figure is adapted from the Impact Institute.

	OUTPUT	IMPACT FACTOR	IMPACT FOOTPRINT	MONETIZATION FACTOR	IMPACT
Organic waste	Total volume organic waste processed in 2020: 33,013 ton/year	x CO2e emissions of organic waste processing: 133 kg CO2e/ton	Total CO2e emissions related to organic waste processing: ~4.4m kg CO2e/year	x monetisation factor: €0.152/kg CO2e	Contribution to climate impact: ~€670,000/year (negative)
Residual waste	Total volume residual waste processed in 2020: 62,712 ton/year	x CO2e emissions of residual waste processing: 1,169 kg CO2e/ton	Total CO2e emissions related to residual waste processing: ~73.3m kg CO2e/year	x monetisation factor: €0.152/kg CO2e	Contribution to climate impact: ~€11,100,000/year (negative)

IMPACT MEASUREMENT: WHAT CHOICES TO MAKE?

Impact measurement methodologies are developed to meaningfully integrate (circular) impact data into decision making. Since this is an emerging field, there are many methodologies available and choices to make. Decisions to be made include, but are not limited to:

- which indicators to use,
- whether to measure absolute or marginal impact,
- whether to assess the impact in quantitative or qualitative terms, and
- monetise or do not monetise.

The set of indicators differs strongly per sector. Initiatives such as the Capitals Coalition, a global network, have developed sector-specific guides including quantitative capital indicators to contribute to the process of standardisation.¹⁰ More generally, the Six Capitals Framework⁸ by the International Integrated Reporting Council (IIRC), and the Sustainable Accounting Standards Board's (SASB) list of Key Performance Indicators (KPIs) can serve as a framework or a benchmark.

Businesses are advised to start with measuring absolute impact as this can give a valuable first insight. To really understand the impact and link specific managerial decisions to it, it is necessary to measure marginal impact, since only then can one say something about the difference between the realised value and the value in the counterfactual scenario for the chosen indicators. This is in line with Impact Institute's methodology, which identifies indicators of impact over a period of time to assess the real-life impact compared to the reference scenario.

The choice of reference scenario is crucial; only when it is standardised per sector, the impact figures are comparable. Just as with financial figures (for example, solvability), these only allow a meaningful interpretation per sector when it is known what is 'common' or desired. These references should be collected over time and are essential for creating benchmarks and integrating circular impacts into decision making processes.

Some impacts are easier to quantify and monetise than others, depending on existing frameworks and measurement that are already accepted, such as carbon emissions, diversity and health. In response to this, the World Business Council for Sustainable Development launched the Social & Human Capital¹¹ and the Natural Capital Protocol¹² which aim to clarify best practices and improve the integration of these impacts and dependencies into decision making.¹³ The Impact Institute methodology builds upon these methodologies. Existing protocols provide standardised frameworks to identify, measure and value these capitals, but there is not yet an obligation to integrate this into (financial) reporting in a standardised way.

Standardisation in impact measurement is hence strongly required. In order to be able to compare different impacts it is necessary to find a common unit. For now, monetary terms seem the most powerful way to integrate non-financial impacts into financial reporting and decision making. However, it remains important to acknowledge the incomprehensiveness of monetisation and the need to constantly revise and question the methods used.



3 CIRCULAR IMPACT AND FINANCIAL REPORTING

INTEGRATING IMPACT DATA IN FINANCIAL ACCOUNTS

Today, financial statements present the most relevant indicators for determining a business's financial position and continuity (going concern). These financial statements and calculated ratios (solvency, liquidity and return on equity) help management and investors in decision making processes. However, the financial statements find their origin in linear business models, in which companies and their auditors are used to depreciate material assets over time while not taking into account external costs and benefits. This financial practice also has limitations in valuing waste which can be used as a resource for another business activity. Therefore, the value of circular impact is not sufficiently considered in traditional financial accounting. This is a major limitation, not only from a circular point of view but also from a financial one: vital value creation by the organisation is overlooked. Currently, financial decisions tend to be taken on the basis of the financial accounts: in other words, cash flow assumptions. These assumptions do not fully reflect the short- and long-term constraints and impacts of non-financial impacts, such as resource depletion and climate change.

A further obstacle for measuring non-financial value creation and its related impact is the considered lack of standardisation in measuring and accounting for non-financial performance. Ultimately, stakeholders and shareholders want to know what non-financial information is really important in relation to continuity and both financial and non-financial performance, and all frameworks have introduced the concept of materiality. There are a few dominant frameworks out there. In 1992, the Harvard Business Review published their conceptual framework, which later became popular with the early adopters of corporate social responsibility.¹⁴ In 1997, the Global Reporting Initiative (GRI) launched its framework and related KPIs on social, environmental and economic performance.

This remains the most used standard for non-financial or Environmental, Social and Governance (ESG) reporting globally. In the US, where there is a more rule-based tradition for reporting, the Sustainable Accounting Standards Board (SASB) developed a more strict framework for companies to report on ESG. In 2013, the International Integrated Reporting Council (IIRC) launched its value creation framework, in which the triple bottom line of social, environmental and economic value, was expanded into six capitals: financial, manufactured, intellectual, human, social and natural: the basis for our methodology. The added value of the IIRC framework is that it asks organisations to report on their output and outcomes separately, which makes identifying the positive and negative externalities easier.

How positive and negative impacts will affect financial performance depends on the time horizon and economic, climate and social developments. However, all impacts can materialise at some time in the future. What is financially immaterial to a company or an industry today can become material tomorrow. Companies and their auditors should take into account this so-called *dynamic materiality*.¹⁵

Impact data is an important driver for incentivising companies and investors to increase positive impact and minimise negative impact, as well as disclosing potential future risk to companies that fail to include circular impact data. This is also the reason that traditional accounting is developing into impact-weighted accounting. Just as traditional accounting has developed benchmarks and ratios to quickly assess the financial health of an organisation, impact accounting needs to develop benchmarks and ratios that allow stakeholders and investors to quickly assess the licence to operate of an organisation by comparing organisations by their purpose for society based on their impact performance and impact-related risks.

So far, the development of impact measurement and disclosure has been driven by the need from

stakeholders and investors to assess sustainable, long-term strategy and non-financial performance. Together with new legislation worldwide and specifically with the EU leading with the Sustainable Financial Disclosure Regulation (SFDR) for financial institutions and the Corporate Sustainability Reporting Directive (CSRD) (previously called the Non-Financial Reporting Directive (NFDR)), it has helped the external reporting to develop. The next much needed step for businesses is now to really start measuring.

HOW TO INTEGRATE CIRCULAR IMPACT DATA

With the outcomes of the impact case in hand the next question is: how can we integrate impact data—in the case of Meerlanden provided as an integrated Profit & Loss statement—into the formal financial reporting of a company? To integrate impact in a meaningful way, we have to somehow sustain the meaning of the impact data, while adhering to the practices and paradigms of the mandatory financial reporting rules and legislation.

While recognition for and reporting of multiple value creation is gaining ground in the management reports, i.e. the management discussion and analysis (MD&A), integrating impact data in financial accounts remains a challenge. Double bookkeeping and reporting are centuries-old traditions and are ingrained in the way businesses have historically reported on their performance. A first question to answer is in which part of the financial accounts the impact should be booked and reported on. The annual financial accounts consist of a balance sheet, an income statement, and a cash flow statement. In addition are notes on the financial statements that provide further information on the background of the financial data. The MD&A includes the report of the board (executive and non-executive), mission and vision statements, strategy and policy, human resource management and remuneration, and risk and governance reports.

Currently, MD&A is the usual place where the company 'accounts' for its non-financial impacts, such as its circular and sustainable performance. Because of SASB guidelines and the Corporate Sustainability Reporting Directive (CSRD) EU directive, that has to be implemented by EU member states by 2022, a growing number of businesses disclose in the management report of their (integrated or combined) annual report on non-financial strategy, policy and performance of their sustainable practices.

It seems that CFOs and financiers largely base their decisions on financial statements and risks. Steering is still too much informed by the numbers, and not as much by the information in the MD&A and alternative non-financial data. The need to understand the total context of risks and opportunities is the reason that the line between financial information and sustainability information is fading. Neither financial information nor sustainability information is sufficient independently. The Integrated Profit & Loss methodology aims to merge information in a meaningful way.

AN INTEGRATED PROFIT & LOSS STATEMENT

The previously mentioned concept of an *Integrated Profit & Loss (IP&L)* statement, which forms the base of the Impact Institute's approach, is an accounting solution for including impact in financial results.

The concept of extending the traditional P&L account reflects financial value creation for shareholders, and broader value creation for stakeholders. The IP&L account was introduced in the methodology section and is a method for including impact on all six capitals in the financial statements of a company. Meerlanden's resource compass is an example of its application on the specific scope of organic waste. By extending the scope of impact from solely financial to also including impact on people and planet, it allows an organisation to report on the impact of that organisation over a given time period (typically a year).

It provides insight into the flows on all six capitals, answering: how did the organisation make (both negative and positive) impact on all six types of capital?

Since 2012, Impact Institute has developed open-source standards on how to construct the IP&L of an organisation. The Framework for Impact Statements¹⁶ (FIS Beta) provides key information and guidance to all organisations that work on their IP&L and received the ISAR Honours Award by the UNCTAD (United Nations Conference on Trade and Development) working group on International Standards for Accounting and Reporting (ISAR). Further, the Integrated P&L Assessment Methodology¹⁷ offers guidance and practical advice on how to put the principles of FIS into practice.

FROM IP&L TO A MULTI-CAPITAL BALANCE SHEET

Another option discussed during the project was to include impact data in a multi-capital balance sheet. We apply the 500 year old principles of double entry bookkeeping for financial accounts into social and environmental accounts, from which a balance sheet can be extracted. A balance sheet is a register of assets and liabilities. The idea behind a social and environmental balance sheet is that when an organisation acquires natural assets (natural resources), it also has to account for the withdrawal from the earth: it has a debt to the earth. There are initiatives that have explored similar ideas^{18 19} but have not been able to consolidate them. This may be caused by the challenge of monetising all the relevant externalities that should be taken into account in a multi-capital balance sheet.

ACCOUNTING FOR IMPACT: A HISTORY

Measuring and monetising impact from economic activities dates back to the 1920s, when the British economist Arthur Cecil Pigou coined the term externalities. In his book, *The Economics of Welfare*, he argues that the free market fails in setting the right price because companies can ignore the social costs of their products or services. To offset this market failure, he suggests that the government should intervene with a tax as high as the societal cost. This kind of taxation is nowadays called a Pigouvian tax.

One of the arguments against the Pigouvian tax was that a government would be unable to measure the social costs, and hence also be unable to set a fair tax level—an obstacle that still resonates 100 years later in carbon tax discussions. Fortunately, companies are beginning to see the urgency of pricing externalities and accounting not only for their output but also their outcomes.* Moreover, the financial sector is increasingly taking sustainability into account in its risk rating, financing conditions and decisions.

Ex'tax Project²⁰ advocates taxing natural resources as an answer to the current fundamental market failure with regard to externalities. High labour taxes encourage businesses to minimise their number of employees. Resources, however, tend to be untaxed; they are used unrestrained. This system causes unemployment, overconsumption and pollution. Ex'tax proposes taxing natural resources and pollution, and using the revenues to lower the tax burden on labour and increase (social) spending.

An interesting new initiative is the Impact-Weighted Accounts Initiative (IWA)²¹ developed at Harvard Business School. The goal of George Serafeim, chair of the IWA project, is the same as we strive for with our Community of Practice: 'to drive the creation of financial accounts that reflect a company's financial, social, and environmental performance'. Last year, Serafeim and the (social) investor Roger Cohen published an article in the HBR, in which they calculated that the airlines Lufthansa and American Airlines would become unprofitable if they would have to account for their environmental costs.²² The Impact Institute and the Impact Economy Foundation collaborate with the IWA and the Lee Kong Chian School of Business at Singapore Management University on the 'Impact Weighted Account Framework'.

Measuring and monetising impact remains an item for discussion. Economists around the world have come up with ideas and models for measuring social and environmental impact. The list is long, but some well known additional frameworks are the Balanced Scorecard, Social-Cost-Benefit Analysis, Triple Bottom Line and Stakeholder Value Added. Moreover, the Value Balancing Alliance, a group of multinational companies supported by four large accounting agencies, is looking for solutions to integrate environmental and social impacts into financial data.²³

*Externalities, outcomes, impact, effect, social return, all terms that are used in the calculation of social costs created by companies.

4 CHALLENGES AND OPPORTUNITIES

The process of carrying out an impact assessment on the impact case has uncovered many opportunities for how to go about integrating circular impact into financial reporting. Meanwhile the process has also shed light on certain challenges that need to be overcome, in order to achieve successful reporting and disclosure of the circular impact.

DATA COLLECTION

Many companies who collect data are unaware of the possibilities this offers for steering on impact. A growing number of companies are discovering the value of data collection for improving material use in production, logistic processes and environmental impacts, for example. External and commonly accepted databases can support companies in how to collect and use data. The Global Impact Database²⁴ for example, provides sector-wide full value chain impact estimates per country for 26 impact indicators. This can give companies a sense of direction in collecting data.

SCOPING: WHAT TO MEASURE?

Assessing a resource stream such as Meerlanden's organic waste sets relatively clear boundaries, as the stream itself can clearly be traced back and it is also quite uniform. Analysing the impact of goods can be far more complex. Today's value chains are immensely entangled and involve a high number of stakeholders. Depending on the situation, one may choose to measure impact not only of the direct processes occurring in a company, but also from resources and products flowing in and out. Collecting valid information on all components of a product and tracking it back to the very start and end of the lifecycle is difficult. In order to make circular impact measurement a feasible exercise, we need a balance between data, granularity and data availability. Assumptions are made and the system boundaries are scoped.

HOW TO MEASURE: EUROS VERSUS TONNES

When looking at mass the incentives shift. Setting up a ratio that looks at how many valuable products (such as water, citrus oil or green gas) are being created per tonne of organic waste leads to optimisation that fuels positive impact. The conclusion is that it varies per sector and product. Consider this: kitchen waste is heavy, but relatively low yielding in terms of value. Construction isolation foam is very light, so in tonnes negligible. However, it is very polluting. Sectors have to create their own standards for how to look at this and how to express their impact, relative to sector peers. For example, setting a sector standard for monetising impact per ton, specified for different materials, enables benchmarking.

THE OVERALL NEED FOR STANDARDISATION

Standardised frameworks are needed for measuring impact and being able to compare companies based on this. This requires two things: a standardised methodology and large scale adoption of this methodology. Only when these requirements are fulfilled will a level playing field emerge—and will companies be able to compete not only on the basis of price, but also on the basis of their positive or negative impact. Standardisation is needed on many levels: from establishing a list of relevant impacts and the framework adopted, to industry-weighted thresholds. Once a standard is accepted, companies have clarity on what data to collect. The resource compass offers a first step towards standardisation and comparability by standardising the measurement of 23 impacts and providing a tested method for monetising these impacts.

OFFSETTING IMPACT DATA: IS IT POSSIBLE? IS IT DESIRABLE?

When impact is measured, the outcome is often a list of positive impacts and negative impacts.

Impacts can have multiple and contrasting outcomes. For example, a certain activity may lead to both increased pollution (negative environmental impact), while providing jobs for the local community (positive social impact). Since we are able to monetise these impacts, we can also offset them. The question that arises here is whether this is desirable. An example from the Meerlanden case is that CO₂ is created on the one hand as a harmful emission—and on the other hand, as a substance to use in greenhouses for growing crops. Can these two types of emissions be offset? Offsetting easily leads to a skewed reflection of results: it can result in an oversimplified image of reality and thereby provide the wrong incentives. Whether offsetting is possible and desirable depends on the kind of impact it concerns and on the purpose of the impact measurement.

TO MONETISE OR NOT TO MONETISE?

It remains debatable whether impact data should be monetised. Our point of departure for this project was clear: as long as financial reporting and the economy works with monetary values, the hands-on approach is to monetise the other factors and integrate them. But is this fair and wise? What are the implications of doing so? Those in favor of monetisation argue that money is the basic, standard medium of communication in business. To capture diverse performance items in business decision making demands comparison between different types of capitals—done most effectively by making comparisons based on financial information. Moreover, monetisation is a valuable tool for management. What is being monetised is being respected: take, for example, human resource management and measuring labour productivity in financial terms. Those against monetisation argue that the emphasis on monetisation can incentivise short-termism, with a reductionist focus that is non-strategic and loses sight of long-term vision. Moreover, monetisation of complex phenomena such as biodiversity, human rights and ecosystem services is unrealistic and paves the way for irresponsible commercial exploitation, instrumentalising nature for short term monetary gains.¹⁹

5 A CALL FOR ACTION: STEERING ON IMPACT

Managerial and investment decisions are largely based on the ability of a business to make a profit. There is no doubt that profit-generation is fundamental for the long-term success of a business model, yet profit should not entail a negative environmental and societal impact. By integrating impact into the decision-making process, business activities can be steered towards profitability while limiting the negative impact and maximising the positive impact on the surrounding environment.

This responsibility of making more impact-based decisions lies especially with two groups: (1) the management of a company (or any other institution) and (2) investors, who enable a company's activities in the first place. Both are able to make first steps and change their habits right away, even before policymakers and legislators will require them to do so. Only when the impact is visible to management and investors, will they become aware of the negative impact resulting from their behavior, adjust accordingly and show the value of steering on impact.

COMPANIES: COLLECT IMPACT DATA

Meerlanden is a good example for a pioneering company which does not just see the cost, but the benefits of assessing impact and being prepared for the future. As the previous chapter has highlighted, there are challenges to overcome. Nevertheless, the first step has become clear: companies need to start collecting and organising data—only those who measure are able to manage and actually 'steer on impact' instead of profit. The impact case has given rise to the question: which data are necessary? As Figure Two suggests, companies need to expand beyond the collection of only financial data, and start measuring material in- and outflows, accounting for emissions as well as social factors. The development of standardised data requirements takes time, and starting to collect now is crucial as it gives management valuable insights into their business activities.

FINANCIERS: IMPACT-INTEGRATED RISK MANAGEMENT

'Investing in a company that does not disclose its pollution is like investing in a company that does not disclose its balance sheet. If governments won't force disclosure, then investors can force it themselves.'²⁵ This quote by a famous hedge fund manager describes well what the responsibility of investors is: demanding non-financial information, such as the state of circularity and the overall impact of the potential investment. However, the rise of (compulsory) classifications such as the EU taxonomy²⁶ shows the need to be prepared and face the challenges of assessing impact. Classifications and demanding impact data are, however, only first steps that need to be taken. Cooperation between different financiers, such as banks and equity funds, will only contribute to the establishment of standardised frameworks and thereby the transition towards impact-integrated risk management. A crucial next step is the integration of impact data into risk assessments. Currently, a risk assessment often seems to compile two almost separate aspects; on the one hand, financiers analyse financeability and on the other hand, financiers take a look at sustainability aspects. Recently, financial institutions have realised that these aspects are strongly correlated and that information on the impact of a business should lie at the core of its risk assessment. Ultimately, it should become a matter of routine that both companies and financiers integrate impact information in all strategic decision making processes.

ACCOUNTANTS: IMPACT-WEIGHTED ACCOUNTING

If we are capable of including circular impact in corporate reporting, it provides a more complete picture of the value of a company's performance and of the value of goods and services delivered by the company.

It is in the role of accountants to then provide assurance on the impact data and prevent greenwashing. The latter is important nowadays, especially due to the increasing demand for sustainability reporting from stakeholders in combination with external scrutiny.²⁷ The importance has recently been expressed in the news when it became clear that EY, Shell's external auditor, stated that the oil company's current plans are not fully aligned with the objective to meet the Paris Agreement criteria. This aspect led EY to issue a Key Audit Matter; the auditor experienced challenges in judging the long-term viability of the current business model in the context of the company's climate-related ambitions.²⁸ This example shows that accountants are also increasingly attaching value to non-financial information. In line with this, accountants should continue to make sure that not only positive impacts are outlined in corporate reporting. Ideally speaking, a balanced and structured overview of the positive and negative impacts is provided, which can ultimately be the basis for governance and financial decision making processes.

6 CONCLUSIONS

The Coalition Circular Accounting aims to identify and overcome accounting-related challenges in the transition to the circular economy by offering particular and scalable solutions. This white paper revolved around the impact case of Meerlanden and how the Impact Institute's method could measure the impact of their organic waste stream collection and valorisation activities. This white paper elaborates on the outcomes of this impact measurement, as well as potential ways to include circular impact in financial reporting.

An increasing number of businesses are reshaping the linear 'take-make-waste' economy into a circular economy. To ensure that more capital is flowing to sustainable and/or circular business models, positive and negative social and environmental impacts need to be integrated into governance and financial decision making processes. This is in line with the EU action plan for financing sustainable growth, which aims to reorient capital flows to sustainable investments.²⁹ One of the reasons for this is that social and environmental value is not properly accounted for. Currently, it still remains challenging for financiers to integrate non-financial figures into their risk assessments. Consequently, sustainability aspects only contribute marginally to financial decision making. Only when financial institutions report on this information, can accountants provide assurance on this information. To broaden the scope of financial reporting to include sustainability disclosure and make this an integral part of strategic decision making, certain challenges still need to be overcome.

First and foremost, businesses will have to start measuring their social and environmental impact and financial institutions will have to ask for this data and integrate it into their risk assessments. The traditional financial figures such as liquidity, solvability, and rentability disincentivise taking a holistic approach in decision making. For this, we suggest an integrated reporting approach.


From an accounting perspective it became clear once again that **what gets measured, gets managed**. The current financial accounting conventions and standards are not able to reflect

the added environmental, climate and societal value of circular businesses. The impact case proved that environmental and social impacts considerably affect a business's license to operate and prospects for the future. Because of the potential impact of the company's performance on sustainability, climate and natural resources, they should be accounted for on the balance sheet and in the Profit & Loss statement. This will also improve insight on the long-term viability of the business model. Accounting is both measuring and managing, and taking responsibility for activities and actions. Controllers can be more comfortable with these results as an integral part of the value proposition and boards can develop a circular strategy based on tangible impacts.

For a company to be able to prove what it accounts for in terms of performance and impact, the whole framework of integrated reporting has to become more mature. Only then an external auditor can give, preferably, reasonable assurance. With a high level of assurance, financiers can be more secure about the multiple value creation and its impact.

There is an urgent need for comparability and a level playing-field. Only when it is clear which indicators to measure, which framework to adopt, and which methodology to use, can non-financial figures be integrated into strategic decision making. Additionally, when sector wide norms are established in terms of a reference scenario and impact indicators, it can be argued whether a business still maintains its licence to operate. When benchmarking becomes possible, sector wide norms can inform us about how companies perform on negative and positive impacts relative to one another and relative to the sector benchmark.

Regarding the choice whether to monetise or not, a fundamental question arises: does it speak to the real problem at hand and does it mean that problems can be offset with money? These are important questions, but in a world where most value is expressed in monetary terms and with the aim to integrate non-financial impacts into financial reporting and decision making, this seems (for now) the only way forward.



Circular impact should explicitly inform management and financial decision making. Start measuring and monitoring in order to practise generating and using data.

APPENDIX

RELEVANT SOURCES ON INTEGRATED REPORTING AND IMPACT MEASUREMENT

Integrated reporting:

- [European Financial Reporting Advisory Group \(EFRAG\)](#) - reports on development of EU sustainability reporting standards
- [The World Bank Centre for Financial Reporting Reform \(CFRR\)](#)
- [World Business Council for Sustainable Development \(WBCSD\)](#) - natural and social and human capital protocol
- [European Banking Authority \(EBA\)](#) on green asset ratios and
- [NRC article](#) on green asset ratios (in Dutch)
- [R3.0](#) - reporting blueprints
- [World Intellectual Capital Initiative \(WICI\)](#) - linking intellectual capital and social and relational capital to natural capital and integrating into the balance sheet
- [Capitals Coalition](#) - focus on improving nature's visibility in financial accounting including an example of inclusive balance sheet statement
- [International Integrated Reporting Council \(IIRC\)](#) - integrated reporting and the six capitals

Impact Measurement:

- [IRIS+](#) - a system for measuring, managing, and optimizing impact
- [Capitals Coalition](#) - sector specific guidelines for impact measurement
- [The Impact Management Project](#) - framework for building global consensus on measuring, managing and reporting sustainability related impacts
- [Impact Institute](#) - impact measurement methodology

Other:

- [Dasgupta Review](#) - the economics of biodiversity
- [Versnellingshuis](#) - database and source of inspiration for business
- [System of Environmental-Economic Accounting](#) - by the UN adopted framework that includes the contributions of nature when measuring economic prosperity and human well-being

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COALITION CIRCULAR ACCOUNTING

The **Royal Netherlands Institute of Chartered Accountants** (NBA) and **Circle Economy** founded the **Coalition Circular Accounting (CCA)** to identify and overcome accounting related challenges that hinder the transition to the circular economy. The Coalition Circular Accounting is a group of experts and scientists in the fields of finance, accounting and law. Members are NBA, Circle Economy, Invest-NL, ABN-AMRO, Rabobank, Allen & Overy, Sustainable Finance Lab, Impact Economy Foundation and scientists associated with Nyenrode Business University and Avans University of Applied Sciences.

COMMUNITY OF PRACTICE

The CCA partners come together and work in a 'Community of Practice', where experts from various disciplines join a pre-competitive environment to co-create open-source solutions that can improve a circular business model's viability.

GOAL AND STRATEGY

The goal is to **overcome existing reporting and valuation challenges** that hinder the transition to the circular economy. The CCA uses **real-life business cases** that show what accounting challenges occur when a circular economic business model is put into practice.

Case learnings are shared in white papers such as this one. The trajectory will be concluded by a final paper, with an overview of the encountered challenges and potential solutions, providing a roadmap for financial- and accounting professionals in the field as well as financial policymakers.

CCA PROJECTS

This is the fourth in a series of four cases with focus on different Circle Economy and accounting challenges:

1. [Road-as-a-Service: Pursuing the financial reality of the circular road](#)
2. [The Circular Facade: Building a sustainable financial reality with Facades-as-a-Service](#)
3. [Valorising Residual Resources: Mitigating food waste—how cooperatives can boost the circular economy](#)
4. [How to Find the Value of Circular Impact in Business: Circular impact measurement and financial reporting](#)

The trajectory will conclude with a *final overview paper, planned for 2021*

COLOPHON

We are very thankful for the valuable contribution of all members of the Coalition Circular Accounting and their organisations. Their expertise, motivation and collaborative spirit resulted in a tangible and transferable outcome, accessible to all.

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