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Erasmus Platform for Sustainable Value Creation

Working paper
SDI Optimization

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This research has been conducted in cooperation with MN and is part of a research project on measuring impact on SDGs of the Erasmus Platform for Sustainable Value Creation. The author is grateful to Kristina Stonjekova (MN), prof. dr. Dirk Schoenmaker and Dieuwertje Bosma (RSM) for their feedback and support for this paper, as well as for the cooperation of the respondents of this research.

1 Executive summary

This executive summary describes the main theory, findings and recommendations of this research. This research was conducted in cooperation with MN and is part of a research project on measuring the impact of the Erasmus Platform for Sustainable Value Creation on the Sustainable Development Goals (SDGs).

1.1 Theoretical framework

The theoretical framework describes the definition of Sustainable Development Investments (SDIs), integrated and systems thinking, and current SDI strategies.

- In 2016 a coalition of institutional investors defined SDIs as solutions that contribute to the UN SDGs. They further described them as investments which meet financial risk and return requirements and which support the generation of positive social and/or environmental impact through their products and services.

- The SDGs can naturally be linked to integrated thinking and systems thinking given their interconnectedness and their global span. Integrated thinking is an active consideration of the relationships between the capital that a company uses and the output and outcome of that capital. The IR framework identifies six capitals, financial, manufactured, intellectual, human, social and natural. Sustainability from a systems perspective refers to an ideal state where human economic activities fit within the existing ecological and societal thresholds.

- Investors analyze the business models of investments to gain an understanding of their ability to create value. Investors analyse financial value creation, and also integrate broader value creation via different SRI methods, including SDIs. In practice, many institutional investors consider the contribution or impact of a business model or project on the SDGs in SDG or impact strategies. This paper distinguishes between explicit impact investing strategies and SDG alignment strategies, such as MN's SDI approach.

1.2 Findings from the case study on MN

For the case study, 15 interviews were held: 11 with representatives of MN, two with MN's main clients – PMT and PME, and two with other asset managers – APG and PGGM. MN considers the SDGs to be relevant because they indicate future macro and micro risks and opportunities for countries and companies. MN has an SDI taxonomy in place which has business indicators per SDG. For each company or project, the percentage of SDI revenue is identified and then multiplied by the

current financial position in that company or project. For many companies detailed information on revenue streams is not available, resulting in a relatively low SDI exposure. The findings of the research can be summarized as follows:

1. Respondents indicated a few challenges with the current approach:
   - There is insufficiently detailed information on the revenue streams of companies.
   - There are differences in the scoring methods, for example between the SDI taxonomy and MSCI scores.
   - There is some level of discretion in assigning SDI scores.
   - Respondents have varying levels of confidence in the ability of the current approach to measure the contribution to the SDGs.

2. So far, the SDI approach has been used to report SDI contribution and to provide insight into existing portfolios. The next step in the SDI approach could be to use the information in investment decisions and to increase exposure to SDIs in the investment portfolio. This would change the character of the SDI information from reporting information (for 'showing') to strategic information (for 'improving'). The more confidence respondents have in the ability of the method to measure the contribution to the SDGs, the more suitable they consider the use of the SDI approach as strategic information.

3. Respondents raised the importance of comparability of SDIs between institutional investors. A joint approach allows for comparability, and also increases the reliability and legitimacy of a methodology. However, MN respondents are satisfied with MN's current approach, which classifies only the percentage of revenue that can explicitly be linked to the SDGs.

1.3 Recommendations

- In an integrated approach understanding the business model is important, both for the ability to deliver financial profit and for understanding the contribution to or impact on societal and environmental challenges. An investor can analyse the value creation of a business by analysing actual and potential environmental and societal outputs and outcomes as well as financial ones. This integrated analysis can be implemented for each different asset class, with its own characteristics of ownership and information position.
- Taking steps towards a more integrated approach would increase the confidence that investors have in the ability of a method to measure the positive contribution or impact of investments. Possible steps for MN in this respect are listed below.

    1. Integrate the negative contribution to the SDGs.

    2. Integrate the need for investments in certain sectors and/or countries.

    3. Integrate the SDI approach into investment analysis.

- There are **challenges which investors such as MN face** when they take these steps:

    - **Portfolio characteristics and most needed investments**

In order to achieve the SDGs, there are certain geographical areas and certain sectors that need more investments than others. Given MN's portfolio characteristics, a large number of their investments are per definition not in those countries that most need the investments. This relates to the risk-return profile of the investment portfolio, which is already incorporated in the definition of the SDIs. In this view of SDIs, the relationship between return and risk and its related measures are taken as a given. There are, however, reasons to look more broadly than these risk-return metrics and to integrate societal and environmental information in investment analyses. This could, in turn, increase the ability to invest in those countries and sectors most in need.

- **Feasibility versus comprehensiveness approach**

The second challenge relates to the objective of a comprehensive approach that takes into account all aspects of an integrated approach, and yet is feasible to use in investment practice. This can be visualized as a continuum. Taking a step to make an approach more integrated – for example by including negative contributions – makes an approach more comprehensive, but it might come at the expense of feasibility in daily investment practice.

However, settling for a feasible approach without taking steps towards a more integrated approach will not accelerate the development of reliable impact data in the long term. Attaining this objective is the joint challenge and responsibility of businesses, financial institutions and governments. As impact data improves over time, a more comprehensive approach could also become more feasible. The following two recommendations could help foster the development of reliable impact data in the long term.

1. Combine feasible and ideal metrics

Investors can identify both feasible metrics and ideal metrics. Feasible metrics concern information that is currently available and used in SDI approaches. Ideal metrics are the metrics that investors would ideally measure. They relate to outcome or impact metrics which show the contribution to or impact on environmental and societal challenges. Combining these two allows for using what is feasible at the moment – even though it is, in fact, suboptimal – while also striving for more ideal metrics. This acknowledges that working with limited information is inherent to the investors' profession, while also providing an indication as to what investors would like companies to report on.

2. Transparent metrics

It is important that investors are transparent about these metrics so that companies know and can develop the information that investors want to use.

Although the SDGs provide a common language that is well received, the broad set of goals and sub-goals allows for quite diverse reporting in terms of impact. If investors disclose both their current and ideal metrics, a debate can take place as to which ideal metrics are best. This goes not only for listed equity and credits, but also for asset categories, such as private equity and real estate. Transparent metrics and a shared debate could help foster reliable and comparable impact data in the long term. Fortunately, this research contributes to this ongoing debate.

2 Introduction

This paper examines investing in the Sustainable Development Goals (SDGs), or in other words, Sustainable Development Investments (SDIs). Since the SDGs were introduced in 2015, SDIs have developed into a sustainable investing practice at different institutional investors and asset managers. As such, they are one of the methods of socially responsible investing (SRI), which I consider to be equivalent to the Dutch term 'maatschappelijk verantwoord beleggen'. The leading question of this case study is the following:

> *How can MN and its clients optimize their exposure to SDIs given their financial objectives and their position in the pension system?*

This research question focuses on the *how* of optimizing SDIs in an investment portfolio. During the interviews and literature discussion, the research evolved to include the *what* of SDG investing, in both the theoretical and empirical sense. The reason for this is that SDG investing is still in development and it is the subject of discussion in many ways. In the second chapter, I provide a theoretical framework for SDIs and describe current SDI approaches in theory and practice. The broad theoretical framework provides a grounded basis for understanding how investors can contribute to the SDGs via their investments. In the third chapter, I describe the methods and findings of the empirical research at MN. The findings relate to the assessment of the current methodology, the use of SDI information as strategic information, and the comparability of SDI scores. Lastly, I make recommendations for the further development of SDIs. The recommendations relate to the importance of an integrated view, some steps that can be taken towards a more integrated approach, and the challenges in relation to taking these steps. This research is part of a larger research project on measuring the impact of the Erasmus Platform for Sustainable Value Creation on the SDGs (2019).

3 Theoretical framework

3.1 Sustainable development investments

The term Sustainable Development Investments was introduced in 2016 by a coalition of institutional investors (APG, PGGM, MN, Actiam, et al., 2016). SDIs were defined as:

> *'Solutions that contribute to the UN Sustainable Development Goals. These investments meet our financial risk and return requirements and support the generation of positive social and/or environmental impact through their products and services, or at times through acknowledged transformational leadership. We distinguish between investments where impact has and those where it has not been measured, and stimulate the latter to report on measurable impacts.' (APG et al., 2016)*

The SDGs are 17 high-level goals formulated by the United Nations (UN) in 2015 as the global development agenda. The ultimate goal of the SDGs is as follows:

> *'We resolve, between now and 2030, to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights and promote gender equality and the empowerment of women and girls; and to ensure the lasting protection of the planet and its natural resources. We resolve also to create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities.' (United Nations General Assembly, 2015, p. 3)*

SDGs as private and common goods

The UN classifies these solutions in terms of people, planet, prosperity, peace and partnership. Each of the 17 goals has a set of sub-goals, with 169 sub-goals in total. By doing this, the UN has broadened the ownership of the goals and formulated them in a positive manner. Business models aid long-term value creation and can thus contribute to the achievement of these goals (Schoenmaker & Schramade, 2019b). Many of the SDGs relate, in fact, to common goods, which are non-excludable and rivalrous, such as fish stock and water resources (Cornes & Sandler, 1986). The problem with these goods is that they cannot be solved by a single sector; instead they are the joint responsibility of governments, companies and civil society (Van Tulder, 2018). Hence, when viewing the SDGs, businesses are asked to take their role in the provision of private goods and common goods (Scheyvens, Banks, & Hughes, 2016). Soon after the publication of the SDGs, the contribution of the private sector to the SDGs was the subject of a wide debate.

Four years later PwC examined 1,141 global companies and found that 72% of them included the SDGs in their reporting (PwC, 2019). The first research into companies' goals with regards to the SDGs showed that companies primarily formulated internal SDG targets, mostly focused on avoiding any negative impact on sustainable development (Van Zanten & Van Tulder, 2018). The role of finance in advancing the SDGs was also emphasized. For example, the United Nations Conference on Trade and Development indicated that investments of US$5-7 trillion were needed to achieve the SDGs (UNCTAD, 2014).

SDI optimization
The empirical research at MN examines the SDI optimization of MN and its clients. Optimization refers to a concept within modern portfolio theory. Modern portfolio theory is a theory 'on how risk-averse investors can construct portfolios to optimize or maximize expected financial return based on a given level of market risk' (Schoenmaker & Schramade, Principles of Sustainable Finance, 2019, p. 207). It builds on the hypothesis that markets are efficient and have all relevant information available. Pedersen et al. (2019) looked at ways to integrate environmental, social and governance (ESG) factors into this framework and came to a tangency portfolio with an ESG-efficient frontier. They describe how motivated ESG-investors seek an optimal trade-off between high expected return, low risk and high average ESG scores. In line with this, SDI optimization can be defined as:

> SDI optimization is the optimization of the trade-off between SDIs and the risk-adjusted return in an investment portfolio.

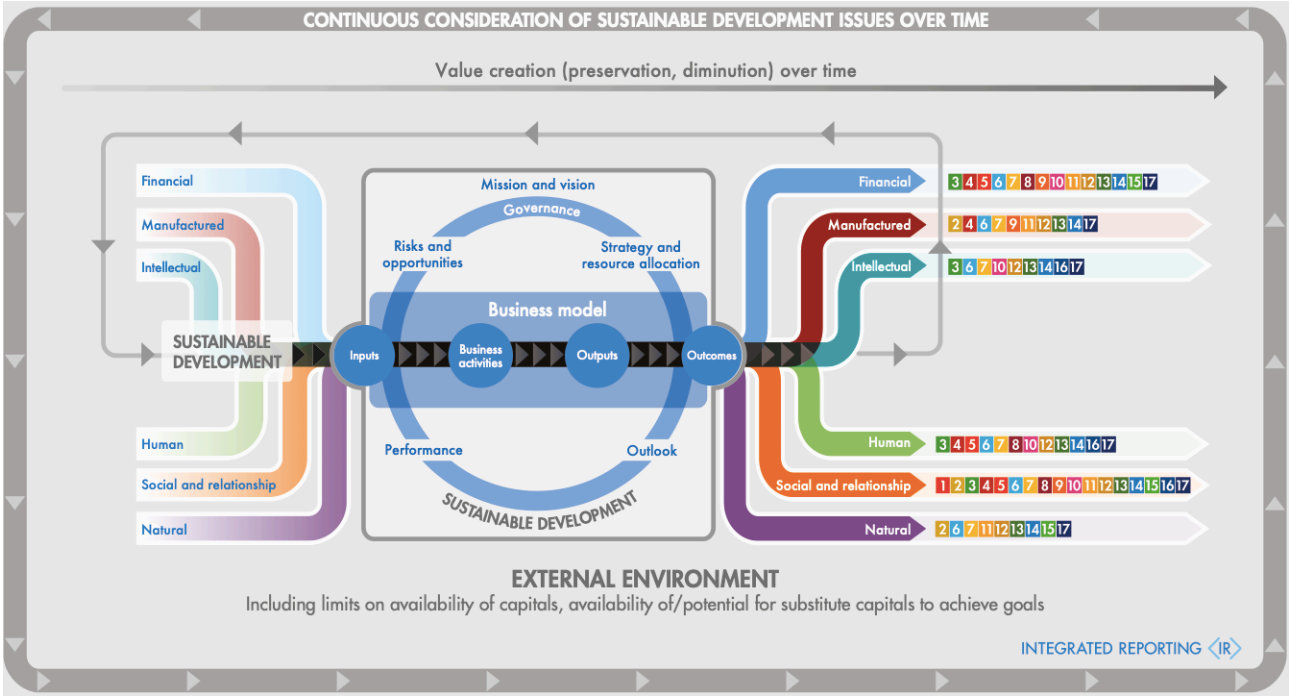
3.2 Integrated approach SDIs

SDIs are investments that contribute to the SDGs. Hence, to identify SDIs an investor needs to assess in what respect an investment in a company or project contributes to or impacts the SDGs. In the 2030 Agenda for Sustainable Development, the UN states that 'the interlinkages and integrated nature of the Sustainable Development Goals are of crucial importance' (United Nations General Assembly, 2015, p. 2). This interconnectedness along with the global span of the ambitious goals almost naturally link the SDGs to the concepts of integrated thinking and systems thinking. These frameworks assist in understanding how a contribution to or impact on the SDGs can be approached. They lead to an understanding of the value creation of an investor which provides a starting point for assessing SDIs from an investor's point of view.

Integrated thinking
The International IR Framework of the International Integrated Reporting Council (IIRC) describes how an integrated report of a for-profit company can explain to providers of financial capital how the organization creates value over time (IIRC, 2013). The IIRC's long-term objective is to make integrated thinking mainstream in businesses. Integrated thinking is an active consideration of the relationships between the capital that a company uses and the output and outcome of that

capital. As such, integrated thinking 'leads to integrated decision-making and actions that consider the creation of value over the short, medium and long term' (IIRC, 2013, p. 34). The IR Framework shows six capitals (financial, manufactured, intellectual, human, social and relationship, and natural) as inputs to the business model (see Figure 1). In the business model, these inputs are used in the company's business activities leading to outputs and outcomes. The business creates value through the outputs and outcomes[1] of the six capitals. Relevant to the business model are the company's mission and vision, governance, risks and opportunities, strategy and resource allocation, performance, and outlook.

FIGURE 1 – THE IR FRAMEWORK LINKED TO THE SDGS



Source: ICAS and IIRC (2017)

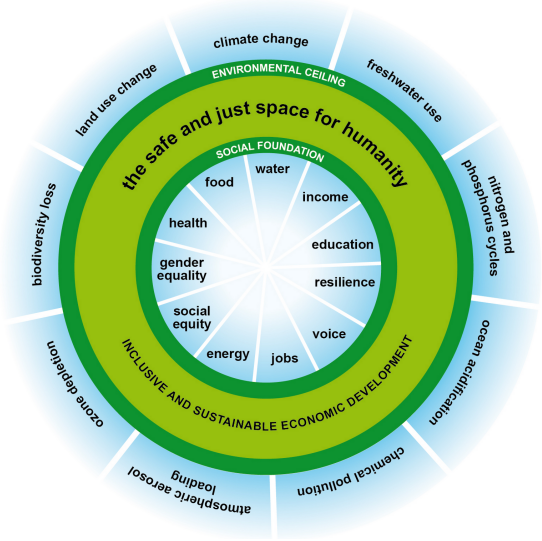
Systems thinking

Sustainability from a systems perspective refers to an ideal state in 'which humans are able to flourish within the ecological thresholds of the planet alongside other living entities for perpetuity' (Williams, Kennedy, Philipp, & Whiteman, 2017, p. 871). Holling (2001) describes sustainable development in terms of a system that is connected and dependent on its interactions. Sustainable development can thus be achieved by understanding the hierarchies and interdependencies in the system. This idea of the world as a system was further developed by an international group of Earth-system scientists, Steffen et al. (2015), who specified nine planetary boundaries which indicate the safe operating space for the environment (see Appendix 1). Their research shows that two of these aspects - biosphere integrity and phosphorus and nitrogen levels - are already in the high-

[1] For the purposes of this paper, I make no further distinction between the outcome and impact of business activities and I use the terms interchangeably.

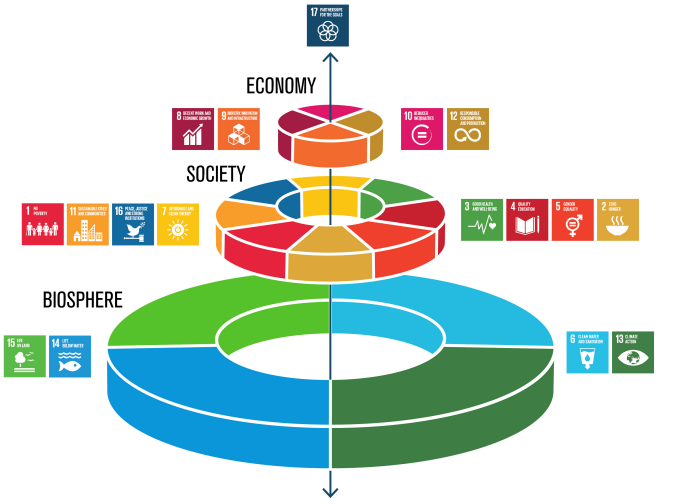
risk zone (Steffen et al., 2015). Adding to this idea on the social side, Raworth (2012) identified 11 social foundations as a minimum for a safe and just space for humanity (see Figure 2). Her model soon gained momentum after her book 'Doughnut Economics' was well received by the general public (Engelen, 2017; Raworth, 2017). Rockström and Sukdev (2016) of the Stockholm Resilience Centre represented the SDGs in a systems perspective (see Figure 3). Figure 3 shows that the economic sphere is embedded within the biosphere and society. In recent years, companies have increasingly been expected to describe sustainability from a systems perspective (Bjorn, Bey, Georg, Ropke, & Hauschild, 2017).

FIGURE 2: ECONOMIC DOUGHNUT MODEL



Source: Raworth (2017)

FIGURE 3: SDGS IN A SYSTEMS PERSPECTIVE



Source: Rockström and Sukdev (2016)

Value creation of investor

Integrated thinking provides a perspective for assessing the value creation of investors, which forms a basis for assessing the SDIs of investors. The value creation model of an investor shows the capitals it uses, its business activities, and the outputs and outcomes. An institutional investor has inputs and outcomes for all six capitals. For those managing pension fund assets, provision of pensions to their beneficiaries is the most important outcome. For example, MN has identified four input capitals: human capital, brand and relationship capital, financial capital, and manufactured capital. These capitals are used in its business activities - executing pensions and insurances, fiduciary asset management, and board advisory - and result in various outcomes: providing employment and development of employees; contributing to the goals of employees, beneficiaries and clients; healthy business operations; a good pension in a good world; and societal engagement (MN , 2019).

The main business activity of an investor is to invest financial capital in businesses and projects. Investors analyse the business models of potential investments to gain an understanding of their ability to create value in the short and long term. In each asset class, an investor provides finances to finance a business model, project, real estate, et cetera. The role of the investor, however, differs per asset

class. As an equity holder, an investor is seen as an owner (or partial owner) of a company or project. As a debt holder, an investor enables a business model and is more concerned with the risk profile of the business model. In real estate, the position differs fundamentally between a project with full ownership and investments in listed real estate. Both the influence on the business model and the information position of the investor differ per method of providing capital.

Integrating broader outcomes

Traditionally in finance, financial outcomes are maximized and financial returns are more important than the outcomes from other capitals. Schoenmaker (2017) classifies this as Sustainable Finance 1.0. By taking into account outcomes from the other five capitals, investors broaden their perspective (Sustainable Finance 2.0). In this paradigm an investor aims to achieve financial, social and environmental impact (F + S + E). In Sustainable Finance 3.0, social and environmental impact is maximized, subject to a minimum required financial return for a viable business model in the long term. Hence, in this approach the creation of common good value is more important; it is, however, still subject to a certain required financial return.

Investors integrate broader outcomes via different SRI methods, such as exclusions, ESG integration, active ownership, climate considerations and impact investing practices. A systems perspective and integrated thinking can be of value in adopting an integrated view of SRI methods. The Doughnut model of Raworth (2017) represents the environmental ceiling and social foundation between which responsible business can take place. Through its SRI methods, an investor assesses the ability of a business to stay within the environmental ceiling while maintaining the social foundation. Some of the boundaries are partly visible through legislation and research, but others are still invisible. The Paris Agreement and the Dutch Climate Agreement (Klimaatakkoord) are negotiated agreements for keeping to certain limits. Frameworks relevant to the social foundations are, for example, the UN Global Compact (UNGC) and the OECD Guidelines, along with national implementation agreements such as the Dutch International Responsible Business Conduct (IRBC) agreements. These measures and frameworks advise investors on how to approach the exclusion of certain companies, execute active ownership practices, integrate ESG and climate considerations.

The IR model shows the value creation and how inputs are transformed and lead to outputs and outcomes (IIRC, 2013). ESG integration and impact investing practices relate to understanding the outcomes of a business model. Part of impact investing is investing in the SDGs (SDIs). Currently, ESG integration focuses more on the business conduct, while impact investing focuses on the products and services of businesses and projects (Roor, 2019). These different methods provide guidance to the boundaries, but do not provide sufficient ground for indicating whether investments are within the environmental and social boundaries. I will now describe the different approaches to SDIs in practice.

3.3 Approaches to SDIs in practice

In practice, many institutional investors measure the contribution or impact of a business model or project on the SDGs. For clarification purposes, a distinction is made between SDG alignment strategies and SDG impact investing strategies. SDG alignment strategies refer to the practice of linking business outputs or outcomes of existing investments to the goals or sub-goals of the SDGs. SDG impact investing refers to impact investing practices focused on the SDGs.

SDG alignment strategies
SDG alignment strategies are investment strategies which aim to make a contribution to the SDGs. There are several sector initiatives in which ESG information is used to come to an SDG score and proprietary SDG assessments. While the overview below is not complete, it does provide an indication of what has been developed since the introduction of the SDGs in 2015.

Firstly, the World Business Council for Sustainable Development (WBCSD), the Global Reporting Initiative (GRI) and the UN Global Compact (UNGC) developed the SDG Compass (WBCSD, GRI & UN Global Compact, 2015). The Compass provides guidance for firms on how to integrate the SDGs, for example by mapping the SDGs against the value chain. The SDG Compass also links over 1,500 business indicators to the SDGs and its sub-goals. GRI and UNGC subsequently provided further information on SDG investing in the 'Business Reporting on the SDGs' report (UN Global Compact, 2017). In the Netherlands, a working group from the Sustainable Finance Platform, which is chaired by the Dutch Central Bank, developed proposed indicators for the SDGs (DNB, 2017). In 2018, the Impact Investing Market Map of the UN PRI (the United Nations Principles for Responsible Investment) proposed ten investment topics rooted in the SDGs. They provided a definition and measures for each of the ten themes (UN PRI, 2018). In 2019, the University of Cambridge Institute for Sustainability Leadership (CISL), more specifically the Investment Leaders Group (ILG) (2019), identified the six most important topics based on the SDGs and presented an ideal metric and a practical metric (for which data is currently available) for each topic. More recently, the United Nations Environment Programme Finance Initiative (UNEP FI) introduced the Corporate Impact Analysis Tool (UNEP FI, 2020), and the World Benchmarking Alliance (2020) is currently seeking to benchmark the 2000 most influential companies for their contribution to the SDGs.

Besides sector initiatives, there are both theoretical and market initiatives in which ESG information is used to assess the contribution to the SDGs. Betti & Consolandi (2018) developed a framework in which they mapped material ESG topics to the SDGs and they then applied this in the healthcare sector (Consolandi et al., 2018). An example of a market initiative doing this is ESG Screen 17 (ESG Screen 17, 2019). A limitation of ESG-based approaches is that they bring with them the problems of ESG ratings, which are often a lack of transparency, independence and often information is added to a single score ignoring material topics (Khan et al., 2016; Kotsantonis et al., 2016; Windolph, 2011). Several parties

in the market have developed proprietary methods for measuring the contribution of a company to the SDGs. Appendices 2 and 3 provide examples of methods and strategies that investors have launched since 2015. Schramade (2017) introduced tagging companies' activities to each SDG in a negative and positive manner. Schramade pointed out that this method is a starting point in the ongoing process of finding KPIs that measure the actual impact on the SDGs.

Along with the increasing attention to the SDGs comes the concern of 'SDG washing' - claiming a contribution to the SDGs when there is none, or little more than with other investments. For example, a focus on doing good on one SDG might, in fact, lead to doing harm to another SDG (Buhmann, 2018). Pradhan et al. (2017) show, using official SDG indicator data, that while some SDGs have synergies, others have negative trade-offs. For instance, businesses often claim to contribute to SDG 12, but SDG 12 has the most negative trade-offs with other SDGs, including reduced inequalities (10), no poverty (1) and clean water and sanitation (6) (Pradhan et al, 2017, p. 1174). It is therefore important to view the SDGs as a set of interacting goals. Buhmann (2018) argues that the risk of SDG washing can be mitigated by applying guidelines in the investment approach to prevent negative exposure, for example the OECD Guidelines and the UNGC. Besides this, transparency and consistency in the SDG methodology can increase confidence in the actual impact on the SDGs.

SDG impact investing

SDG impact investing refers to impact investing practices focused on the SDGs and hence an impact investing approach is followed. As this research focuses on SDG alignment strategies, I limit this paragraph to definition setting. From the definition of impact investing given below, it becomes clear that SDG impact investing has more stringent criteria than SDG alignment strategies and that the measurement of impact is key.

Impact investing is defined by the Global Impact Investing Network (GIIN) as 'investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.' (GIIN, 2019). The key elements of this definition are that the investment is 1) intentional 2) with return expectations 3) has measurable impact and 4) can be in different asset classes and with different return expectations (GIIN, 2019). In 2019, GIIN gave further guidance laying out four core characteristics of impact investments (GIIN, 2019):

1. **Intentionality** - An investor has the explicit intention of having a positive impact and of helping to solve problems by implementing solutions.
2. **Use evidence and impact data in investment design** - An investor has evidence and data on the impact in order to make investment decisions based on the expected impact.
3. **Manage impact performance** - An investor manages the investments towards that intention of positive impact.
4. **Contribute to the growth of the industry** - An investor uses shared industry terms and indicators to describe impact investments.

4 Empirical research

4.1 MN's SDI approach

As a universal owner, MN and its clients have exposure to almost all sectors and countries (PMT, 2019). The SDGs describe the main challenges faced by these sectors and countries. MN considers the SDGs to be relevant because they indicate future macro and micro risks and opportunities for countries and companies. MN defines sustainable development investments as

> 'investments that contribute to the solutions for the UN Sustainable Development Goals which have a positive environmental or social impact by their products or services or which show a strong leadership within a certain theme or sector.'

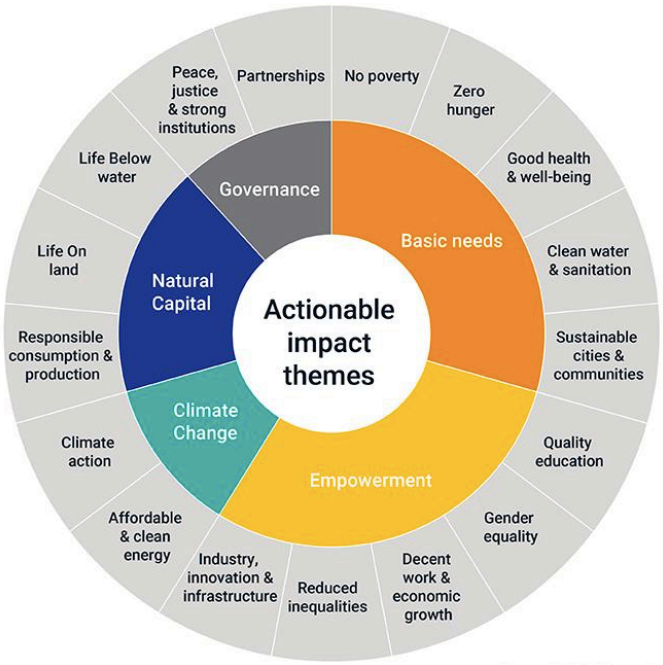
SDI taxonomy
MN has developed an SDI taxonomy which describes indicators for each SDG and the method of implementation at listed equity, (green) bonds, private equity, infrastructure, (listed) real estate, mortgages and timber. MN makes use of data from the data provider MSCI when available. MSCI offers Sustainable Impact Metrics for listed equity, corporate bonds and listed real estate. MN's method aims to assess the exposure of existing portfolios to the SDGs. It is used for reporting purposes to 'show' the contribution of the current portfolio but it is not used to increase ('improve') the contribution to the SDGs. SDI exposure is calculated as the percentage of revenue that can be linked to an SDG via the SDI taxonomy or the MSCI Sustainable Impact Metrics (see Figures 4 and 5).

The percentage of SDI revenue is multiplied by the position of the client in that firm. For example, if 30% of a company's revenue can be linked to an SDI via the SDI taxonomy and an investor holds a stake of EUR 100 million in that company, EUR 30 million is counted as the SDI exposure. For many companies detailed information on revenue streams is not available, resulting in a relatively low SDI exposure (as a % share of total revenue).

FIGURE 4: INVESTABILITY OF SDGS IN THE SDI TAXONOMY

Source: MN SDI Taxonomy

FIGURE 5: MSCI SUSTAINABLE IMPACT METRICS



Source: MSCI ESG research

Green bonds fall within the identified solutions of the SDI taxonomy and are therefore completely classified as SDIs. In the real estate portfolio, SDI exposure is via SDG sub-goal 11.1, which focuses on affordable housing. MN has developed an approach for assessing affordable housing in the Netherlands and other European countries. Overall, the SDI approach assesses only the potential contribution of a business to the SDGs and does not consider any negative impact.

MN and its clients PME and PMT

MN developed the SDI approach upon the request of its clients, in particular Pensioenfonds voor Metalektro (PME) and Pensioenfonds Metaal en Techniek (PMT). In its 2018 Annual Report, MN disclosed the SDI exposure of these clients over the past few years (see Table 1) (MN , 2019). It does, however, note that the measurement is still in development. PME has the target to invest ten percent of assets under management (AuM) by 2021 in SDIs (PME, 2019). In the Annual Report, both PME and PMT reported these percentages and illustrated the SDIs by qualitatively describing a few of them (PME, 2019; PMT, 2019). PMT has no particular target SDIs. Besides SDIs, PMT has a target on impact investments and PME has an annual allocation. Both PME and PMT are increasing their impact investments (PME, 2019; PMT, 2019). Both PME and PMT have a thematic impact investing focus on energy transition, circular economy, access to finance and affordable housing (information as of April 2020).

TABLE 1: SDI EXPOSURE PME AND PMT

Year	PME	PMT
2016	8.4	-
2017	8.9	8.9
2018	8.8	9.5
Target 2021	10	N/A

Source: MN (2019)

Both PMT and PME have integrated SRI methods into two of their investment beliefs. They state that:

> *'Only investments that take account of ESG factors (Environmental, Social, Governance) are profitable in the long term because adverse consequences of an economic activity cannot be passed on to people, society and the environment indefinitely.' (PME, 2018, p. 4; PMT, 2018, p. 4)*

This belief leads to the mitigation of financial risks by integrating ESG information. PMT's second investment belief relates to the fact that investments have an impact on the real economy and society. This belief is the basis for 'taking into account the influence of investment choices on the world' (PMT, 2018, p.4). PME states that using SRI methods contributes to a sustainable and stable society and hence to a stable return (PME, 2018). These investment beliefs explicitly connect SRI methods to financial methods. Therefore, they provide the basis for the consideration of SRI methods in product strategy and investment analysis.

4.2 Methods and findings

Methodology

For the empirical research 15 interviews were held between October and December 2019. Eleven interviews were with representatives of MN working in different asset classes (listed equity, corporate bonds, private and infrastructure equity and real estate), in several layers of the organization (fiduciary advice, fiduciary management and asset management) and with various roles (analyst, member of SDI working group, head of department, et cetera). To obtain a broader understanding of measuring SDIs, interviews were also held with representatives of two other large Dutch pension fund asset managers - APG and PGGM - as well as with two of MN's clients - PMT and PME. The findings relate to the assessment of the current methodology, the consideration of SDI information as strategic information, and the comparability of SDI scores.

Finding 1: Assessment of the current methodology

Challenges of the current methodology

The current methodology measures revenue streams against either the SDI taxonomy or the MSCI Sustainable Impact Metrics. The step from ESG information to including additional information on the products and services of companies is

seen as a positive development. Much effort has been put into measuring the SDI contribution of each asset class. Respondents raised three challenges with the current methodology. The first challenge that respondents that score companies on the SDI taxonomy face is insufficiently detailed information on the revenue streams of companies. Although some companies disclose relevant information, there is often not enough detail to form a good picture of the revenue streams. The second challenge relates to differences in scoring methods, for example between the SDI taxonomy and MSCI scores. With respect to asset categories where both methods are used, these differences potentially lead to inconsistent outcomes between companies. Thirdly, there remains some level of discretion in assigning SDI scores. Respondents raised the issue of differences in the scoring depending on who was doing it, leading to inconsistency in executing the methodology. These challenges lead the respondents to have varying degrees of confidence in the ability of the current methodology to provide insights into the contribution to the SDGs.

Besides the practical challenges, there is a more theoretical challenge which relates to the degree to which the current method is able to measure what the definition of SDIs describes: a contribution to the SDGs. The measuring of revenues provides relevant information, but the definition of an SDI refers, in concept, to the impact of products and services, in line with the outcomes of the IR Framework. The difficulty lies in measuring outcomes, as companies have less control over the outcomes than over the output. Some respondents stated that they find it difficult to assess whether certain outputs measured in the SDI approach also lead to actual outcomes for the environment and society as intended by the SDGs. Other respondents stated that although measuring revenues is suboptimal, it is the best method presently available and that it does provide relevant information. I now describe more specifically how the current methodology was assessed per asset category.

Direct real estate, mortgages, private equity and infrastructure

For real estate and mortgages, impact investments in affordable housing are classified as SDIs. Respondents are satisfied that the method does indeed indicate what portion of the real estate and mortgage portfolio contributes to SDG sub-goal 11.1 to ensure access for all to adequate, safe and affordable housing. The impact investments in private equity (PE) and infrastructure are, per definition, classified as SDIs. Besides these impact investments, private equity also classifies investments in funds using the SDI taxonomy. As there are many positions in these funds, it takes quite a lot of resources to assess the SDI contribution of the funds. Respondents are generally satisfied that this method gives insights into the contribution of the investment to the SDGs but they raised the abovementioned practical challenges. One respondent emphasized that the strategy and focus areas of impact investing and SDIs should be better aligned, while maintaining the differences with regard to intentionality.

More generally, respondents see the impact case of investments in the illiquid asset classes (direct real estate, PE and infrastructure) more clearly than in the

liquid asset classes (equity and bonds). There is also more room in these asset categories to invest with a goal or intention in a certain investment. Respondents stated that it is possible to steer on the SDIs in these asset classes but view steering on the level of impact investments as more feasible since the impact case of these investments is considered to be stronger.

Equities, corporate bonds and listed real estate

In equities the SDIs are measured through the SDI taxonomy and the MSCI Sustainable Impact Metrics. A challenge in the equity portfolio is that there is only a small number of companies with a high percentage of SDI revenue. Even more challenging is that these companies are concentrated in certain sectors. The largest part of the equity portfolio is part of the 'Bewuste Selectie' strategy, which combines a priori financial and non-financial decision rules and a passive execution of the investments. The decision rules relate to MN's beliefs that the SDIs could become a part of these decision rules. But given that the SDI exposure is concentrated in a few sectors, an increase in SDIs would lead to sector concentration. This is not desirable as part of the risk-return considerations is to maintain a sector distribution comparable to the benchmark. This concentration might also lead to increased volatility in the portfolio. In the fixed income asset classes, the MSCI data and SDI taxonomy are used for the corporate bonds and listed real estate. The use of both MSCI data for companies that are listed and the SDI taxonomy for companies that are not listed might lead to inconsistencies in the measurement of SDI exposure of investments in corporate bonds. Green bonds, both corporate and sovereign, are top-down classified as SDIs as most of them concern a specific investment goal which relates mostly to SDG 7 Affordable and clean energy and SDG 13 Climate action. This makes the classification under the SDI framework objective and clear.

Investments in listed equity and corporate bonds are typically in secondary markets and make up a relatively small stake of a business's financing. Moreover, they usually concern the general financing of the business rather than a particular or new business activity. Hence, the contribution of these investments to the SDGs is less clear than, for example, investments in real estate and private equity. In addition, given the small number of companies with high SDI exposure, some respondents stated that steering on the SDIs in the equity portfolio is less desirable. Other respondents stated that since the method has been used for several years now and is standardized, it is suitable for steering on the level of SDI exposure.

Finding 2: SDI information as strategic information

SDIs are defined as investments that contribute to the SDGs through the positive environmental or social impact of their products or services or through their strong leadership within a theme or sector. This is operationalized to the output tagging approach. So far, the method has been used to report the SDI contribution of the current portfolio and to provide insight into the current portfolio. The method is a way of indicating to external stakeholders and beneficiaries what percentage of the investments is linked to the SDGs, in other

words to 'show' its contribution. In its disclosure, MN describes what the method entails so the reader understands what steps have been taken to come to the SDI percentage.

The research question relates to SDI optimization, which is defined as optimizing the trade-off between SDIs and the risk-adjusted return in an investment portfolio. When optimizing the portfolio based on the SDIs, an SDI approach is used to steer investment decisions and increase the exposure to SDIs in the investment portfolio. This changes the character of the SDI information from reporting information (to 'show') to strategic information (to 'improve').

Suitability of the current approach as strategic information

When using SDI information in decision-making, those involved in the decision-making become critical of the degree to which the current positive SDI output approach is able to indicate the contribution of a business to the SDGs.

Respondents varied in the degree to which they have confidence in the methodology to do this and they raised the practical and theoretical challenges described in finding 1. For some respondents, it is important to use the SDI information as strategic information because its current use for reporting does not have an actual impact on the portfolio. These respondents have confidence in the method and regard the challenges as inherent to the investor's work. MN already uses other SRI methods as strategic information, for example via ESG integration and selection in product strategies. Other respondents stated that the method first needs further maturing before it can be used as strategic information. The asset specific descriptions in finding 1 describe to what degree respondents are confident that the current method actually indicates the contribution to the SDGs.

Finding 3: Comparability SDI scores

Comparability between institutional investors

Many respondents raised the importance of comparability of SDIs between institutional investors. Respondents also raised the importance of sharing resources for examining the impact of investees' products and services on the environment and society. A joint approach not only allows for comparability but also increases the reliability and legitimacy of a methodology. Currently, the three largest institutional investors in the Netherlands all measure their percentage of SDIs. However, they use different approaches for doing so. As different methods lead to different outcomes, the SDI portfolio exposure is difficult to compare.

Satisfied with MN's approach

Respondents stated that MN's methodology is quite conservative with regards to measuring a company's contribution to the SDGs through their revenue. In contrast to other methods, MN's method classifies only the percentage of revenue that can explicitly be linked to the SDGs. No estimates are used, nor does the investor classify a whole company as an SDI if a high revenue percentage is found to contribute to the SDGs. Respondents are satisfied with this method as it is important to them that the method actually measures what it intends to measure.

Although a single independent SDI data provider would be preferable, some respondents pointed out that proprietary research provides a more detailed understanding of the contribution or impact of a company's products and services.

5 Recommendations

In the theoretical framework, the foundation for SDIs was laid by understanding the value creation of investors and hence, the ability of an investor to contribute via investments to the SDGs. In the findings I have described how using the SDI approach for optimization changes the SDI information from reporting information to strategic information. Respondents raised various challenges regarding the current methodology and this led them to have varying degrees of confidence in the ability of the approach to provide insight into the contribution to the SDGs. Taking steps towards a more integrated approach would increase the level of confidence in the positive contribution of the investments (see 5.1 and 5.2). There are, however, also challenges in developing an integrated approach (see 5.3). These recommendations are valuable both to MN and to other (institutional) investors who measure their contribution to the SDGs.

5.1 Integrated approach

Respondents indicated that the SDI approach is part of the broader set of SRI methods: ESG integration, impact investments, exclusions and active ownership. Most respondents view ESG information as financially material, but SDIs as not value relevant. Although many asset managers consider ESG information to be financially material, they often struggle with a true integration of this information into their investment analysis (Mooij, 2018). MN's main clients – PME and PMT – have integrated SRI methods into two investments beliefs, which relate to ESG information and the impact of the contribution to the environment and society. So far, the SDI approach has not been used as investment information but rather to provide insights into the current portfolio. Financial considerations focus on assessing the ability of a business or project to deliver a financial profit. In an integrated approach, understanding the business model is important not only for delivering financial profit and understanding the risks, but also for delivering a positive contribution (to the SDGs) or impact (as impact investment). In terms of the IR Framework, an investor serves as a financial input to a business or project and is eager to analyse not only the actual or potential financial outputs and outcomes of that investment, but also the environmental and societal ones. This integrated analysis can be implemented for each different asset class, with its own characteristics of ownership and information position. A comparison can be made with, for example, interest sensitivity, which is relevant to all asset classes but in different ways depending on the asset class characteristics.

5.2 Steps towards a more integrated approach

The SDI framework is applied across the asset classes of the investment portfolio. The identified challenges cause the respondents to have different degrees of confidence in the ability of the current methodology to provide insight into the contribution to the SDGs. If there is sufficient confidence, this information can be used as strategic information in investments decisions, see this described per asset category in section 4.2. Overall, respondents have more confidence in the contribution to the SDGs for real estate, mortgages, private equity and infrastructure investments than for equities and bonds. For equities and bonds, further steps towards an integrated approach are needed to increase the level of confidence in the positive contribution of the investments.

Taking steps towards a more integrated approach would improve the maturity and robustness of the framework. As such, they would help to further develop the SDI framework as strategic information. Possible steps to take are to integrate the negative contribution to the SDGs, integrate the need for investments in certain sectors or countries, and integrate the SDI approach into investment analysis.

1. Integrate the negative contribution to the SDGs

This paper describes that from an integrated view businesses have both a negative and positive influence on the six capitals. Businesses can help to solve societal and environmental challenges – as formulated in the SDGs – but they can also worsen them. Therefore, indicating both the positive and the negative contribution to the SDGs is important for a balanced understanding of a company or project. Classifying certain products and services as negative, however, is quite a challenge. Another challenge is how to weigh the positive and/or negative contributions against each other. Currently, certain business models are excluded via the exclusion criteria, such as controversial weapons, tobacco and the gambling industry. The 169 SDG sub-goals provide a broad spectrum of goals which often overlap or contradict one another in a business model. One solution to this is to not assess the sub-goals of the SDGs but instead to look at the themes they relate to. This makes the trade-offs between them more explicit, and when determining which theme is most important to each company or investor, this can provide a basis for decision-making.

2. Integrate the need for investments in certain sectors or countries

In order to achieve the SDGs, there are certain geographical areas and certain sectors that need more investments than others. An integrated view involves a systematic understanding of markets, society and the environment. It means assessing the needs of society and the environment first, and then seeking suitable investments. Investors do not have to perform this analysis themselves; they can obtain valuable insights from organizations involved in sustainable development. Via the Addis Ababa Action Agenda, the UN is working to make financing flow towards the SDG agenda (UN, 2015) and it also provides an overview of the progress per SDG sub-goal (UN, 2019a). For many of the sub-goals, the progress is

described per geographical area, which provides information on where certain solutions are most needed. The UN has highlighted particular groups of countries – Least Developed Countries and Small Island Developing States – to which more private investment should go (UNCTAD, 2015; UN, 2018). The open source Corporate Impact Analysis Tool of UNEP FI (2020) contains estimations of the negative and positive impact of each sector on 22 indicated topics for each country. In October 2019, a group of 30 large financial institutions and businesses, among which APG, announced that they would push for private sector investment for sustainable development (UN, 2019b). One of the main objectives is to mobilize additional resources for those countries and sectors most in need.

3. Integrate the SDI approach into investment analysis

In integrated thinking, understanding the business model is important not only for delivering financial profit and understanding the risks, but also for delivering a positive contribution (to the SDGs) or for having positive impact (as impact investment). To put this another way, in Sustainable Finance 2.0 an investor takes into account the value creation of a business from all six capitals, both in terms of the financial impact and the social and environmental impact (F + S + E) (Schoenmaker & Schramade, 2019). The SDGs provide insight into which products and services add value and which subtract value, and hence they are integral to the overall investment analysis.

5.3 Challenges of an integrated approach

When steps towards an integrated approach are taken, investors such as MN are faced with two challenges. The first relates to portfolio characteristics and the investments that are most needed. The second relates to the degree of comprehensiveness versus the feasibility of the approach.

Portfolio characteristics and the investments most needed
The first challenge relates to where investments are most needed and to portfolio characteristics. One of the steps towards a more integrated approach relates to the integration of the need for investment (see 5.2). In order to achieve the SDGs, there are certain geographical areas and certain sectors that need more investments than others. This is, however, a challenge with the portfolio characteristics of parties such as MN.

For example, as of 31st December 2018 PMT, one of MN's clients, had 52.8% of its investments in its matching portfolio and 47.2% in its return portfolio (PMT, 2019). The objective of the matching portfolio is to invest in low risk investments relating to the characteristics of the pension obligations. A large part of this portfolio is, for example, in euro-denominated government bonds, or to put it another way, in government bonds of European countries that use the euro as their currency. By definition, these investments are not in those countries that most need the investments (see 5.2). More broadly, in different asset categories, the groups of countries where investments are most needed might involve higher risk than

conventional investments in Western countries. These are examples of limitations which relate to the risk-return profile of the investments. This risk-return profile is already incorporated in the definition of SDIs: 'investments that meet our financial risk and return requirements' (see 3.1) (APG et al., 2016). This aspect is also integrated in the research question: 'given their financial objectives and their position in the pension system' (see 2). In this research this is translated in the definition of SDI optimization: 'the optimization of the level of SDIs in a certain portfolio given the expected financial return based on a given level of market risk'. The SDIs are made within the current investment mandate, which has certain limitations based on the risk-return characteristics. There is still, however, room for investment in the SDGs, as shown by the example of MN. However, given the portfolio characteristics, these investments are often not in those countries where they are most needed.

In this view on SDIs, the relationship between return and risk and its related measures are taken as a given. Given the investment mandate, SRI methods such as SDIs are added. However, for an integrated approach financial information and environmental and social information jointly provide the basis for investment analysis (see 5.1). The UNCTAD emphasizes in this respect that it is important for investors not to be blinkered when understanding risks only from a conventional business mindset (UNCTAD, 2015). The overreliance on the efficient market hypothesis and diversification proved wrong in the financial crisis as the actual correlation of stocks was much higher than expected. As such, diversification provided less risk mitigation than was assumed (Frijns, Nijssen, & Scholtens, 2010). The efficient market hypothesis alone cannot provide sufficiently reliable financial wealth in the long term and SRI methods are a means to integrate relevant aspects into investment decisions (Maatman & Huijzer, 2019). Looking into the value relevance of societal and environmental information and taking a critical look at conventional convictions improves the ability of an investor to fulfil their fiduciary duty. This can, in turn, improve the ability to invest in the countries and sectors most in need.

Feasibility versus comprehensiveness approach

The second challenge relates to developing a comprehensive approach that takes into account all aspects of an integrated approach while still being feasible for use in investment practice. I have visualized this challenge as a continuum between feasibility and comprehensiveness. In its SDI approach, MN has chosen a position on this continuum by looking at the positive output of the business and project. At times, it is already challenging to find sufficiently detailed information. If the negative contribution or the need for investment are added, the framework becomes more comprehensive, but this might come at the expense of the feasibility of the approach in daily investment practice.

However, settling for a feasible approach without taking steps towards a more integrated approach will not accelerate the development of reliable impact data in

the long run. The SDGs are the agenda of the United Nations until 2030. The SDGs serve as a lens for indicating which outputs and outcomes contribute to the current societal and environmental challenges. Therefore, the ultimate objective is not the SDGs themselves, but the development of reliable impact data which gives insights into outputs and outcomes. Given the limited attention that investors have, it is important to sustain attention to this objective (Roor, 2019). Phrased in terms of the continuum, the objective is to come to an integrated approach which is sufficiently comprehensive, yet also feasible for investment practice. This is the joint challenge and responsibility of businesses, financial institutions and governments (CISL & ILG, 2019). As impact data improves over time, financial institutions will be able to adopt a more comprehensive approach, which will then also be feasible. The following two recommendations will assist in maintaining a sustained commitment to developing reliable impact data in the long term.

1. Identify both feasible and ideal metrics

In order to maintain the focus on developing the ideal metrics, investors can identify both feasible metrics and the metrics that they would ideally measure. Feasible metrics are metrics that can currently be used, such as the percentage of investments aligned with the SDGs, SDG scores or impact related measures, such as jobs supported, GHG avoidance and MwH renewable energy. Ideal metrics relate to outcome or impact metrics which show a company's contribution to or impact on environmental and societal challenges. Combining these allows both for using what is feasible at the moment – even though it is suboptimal – and for striving for more ideal metrics. This approach acknowledges that working with limited information is inherent to the investors' profession, while also giving an outlook on where it should go. The Cambridge Institute for Sustainability Leadership (2019) used an approach in which they indicated both ideal and base metrics on six identified impact metrics, which they stated to be suitable for most investments. The ideal metric relates to the impact of businesses and projects. The more feasible metric can be the outcomes of the currently identified outputs or a further development of the outputs. For example, in the topic of climate stability the feasible metric is Scope 1 and 2 Greenhouse Gas emissions, while the ideal metric is alignment to future warming scenarios based on the consumption of the global carbon budget. A data hierarchy as used by the Platform for Carbon Accounting Financials (PCAF) can even indicate three or four methods or metrics per asset category, the first indicating the most preferred method (PCAF, 2019). Other examples are the Natural Capital Protocol (2016) and Social & Human Capital Protocol (2019) which give guidance as to which metrics ideally capture environmental and social impacts.

2. Transparent metrics

When the metrics are determined, it is important that investors are transparent about them. As stated, impact metrics are the joint responsibility of businesses, financial institutions and governments. If investors develop proprietary methods which they do not disclose, companies are left in the dark as to what information investors use. Although the SDGs provide a common language that is well received, the broad set of goals and sub-goals allows for quite diverse reporting in

terms of impact. Assessing the SDG contribution of firms without disclosing any details decreases the ability to take joint responsibility and might even lead to an increase in 'SDG washing'. If investors disclose both their current and their ideal metrics, a debate can take place as to which ideal metrics are the best. This goes not only for listed equity and credits but also for asset categories, such as real estate and private equity. As societal and environmental challenges are a moving target, the importance of these metrics goes beyond the SDGs, but they can nevertheless be related to the SDGs (Roor, 2019). This debate could lead to improved comparability and also to more reliable impact data. Businesses may experience reporting fatigue with all the different ESG and sustainability assessments they have to report on (Mooij, 2018). It is important that impact data does not lead to just more scores and disclosures. The ESG initiative industry functions as an intermediary between companies and investors, but not yet in the field of impact data of products and services. Although many companies disclose their contribution to the SDGs in their reports, investors often use their own assessment as to what qualifies as SDG contributions. Transparent metrics and a joint debate could help foster reliable and comparable impact data in the long term. Fortunately, this research contributes to this ongoing debate.

6 MN's reaction to the paper

As one of the partners of the Erasmus Platform for Sustainable Value Creation (Erasmus Platform), MN has supported the development of a case study investigating how financial institutions in general and pension funds in particular could 'optimize' their exposure to the Sustainable Development Goals (SDGs) via Sustainable Development Investments (SDIs).

The development of this paper was driven by several objectives. Research, be it in the context of product strategy review and development or portfolio management, among others, forms one of our strategic priorities. It enables MN to stay on top of most recent developments, ESG-related or otherwise, and contributes to the delivery of quality services to our clients PMT, PME and others. Academic research should deliver insights that are relevant and actionable for the financial services industry, including MN and its clients. We thereby relate to and support the mission of the Erasmus Platform for Sustainable Value Creation to bridge the gap between the academic world and the financial sector by generating practical knowledge on sustainable finance. We also welcome the opportunity to enable young researchers to get to know the financial services industry 'from the inside' and empower them to leverage these experiences in their current and future careers. Finally, we also see many benefits in tackling issues that are relevant not only to MN and its clients, but the whole industry collaboratively. This includes exploring the ways the SDGs can be considered for investment purposes.

As part of their commitment to deliver good pensions in a livable world, MN's clients PMT and PME have contributed to the development of the Sustainable Development Investments (SDIs) framework to measure their contribution to the SDGs. In 2016 PME set the ambition to invest 10% of its total portfolio in companies that contribute to the SDGs by the end of 2021. Both PME and PMT have measured and reported their exposure to the SDGs since 2016. Today this measurement is done across several listed and non-listed asset classes and it has provided improved insights into how different parts of the portfolio as well as different sectors, companies and geographic regions contribute to the SDGs. These insights can be used in our engagement programs, among others.

We realize that the SDGs have an expiration date - 2030 - and that a large financing gap remains for the United Nations (UN)-set goals to be met. During the latest annual update in 2019[2] the UN cited a financing gap of $2,5 trillion per year with global poverty falling too slowly, global hunger rising for the third successive year, no country being on track to achieve gender equality, biodiversity being lost at an alarming rate and greenhouse gas emissions still rising. In the context of this

[2] https://www.un.org/press/en/2019/dsgsm1340.doc.htm

financing gap, we recognize the important concept of 'additionality'. Generally put, the more an investment generates change, the more 'additional' it is. This concept goes hand-in-hand with what we mean by a 'contribution to a livable world'. Contribution to a livable world is central to SDIs and our clients' beliefs. We realize that to achieve its full potential, the SDI framework could ultimately be used to enable MN's clients to 'steer' on their exposure to the SDGs, for example by informing product strategy setting. To put it differently, it could enable us to use companies' contribution to the SDGs as strategic information, possibly by more explicitly identifying those investments that are on the one hand most likely to help close the financing gap (that are 'additional') and on the other hand have market-rate risk-return characteristics and fulfill our clients' existing mandate requirements.

Internally, we have been exploring the question to what extent it is possible to 'steer' on the SDIs in different asset classes. This included a thorough deep dive into the asset class listed equity. One of the outcomes of this deep dive was the recognition that before the SDI framework and the insights it provides can be used as strategic information, the methodology needs to mature and deliver reliable and comprehensive insights. At this moment, the methodology for example does not measure companies' negative impacts that may 'outdo' the progress made toward (other) SDGs. This poses a limitation.

In 2019 the Erasmus Platform chose as one of its priority research areas the topic of 'SDGs in investing and lending'. This has presented an opportunity to develop a concrete follow up on our earlier deep-dive into the possibilities to 'steer' on the SDGs in the asset class listed equity. By supporting the development of the present case study, we also wish to contribute to building an industry-wide understanding of the ways financial institutions in general and pension funds in particular could improve existing SDI frameworks and integrate SDGs in investment decision making processes.

We are pleased with the work Annebeth and the Erasmus Platform did and we find the case study to validate several of our earlier findings.

The paper suggests that the SDI framework and the way it is applied should be suitable and reliable for those who use it. The recommendations confirm our earlier findings with respect to the centrality of reviewing what the SDI framework measures and how before the insights it provides can be used as strategic information. The case study suggests that the more comfortable users of the method are with its ability to measure companies' and investments' contribution to the SDGs, the more suitable they consider the SDI approach as strategic information. Besides this, we however also recognize that the reason behind striving for a methodology that would be both suitable and reliable relates to the need to have access to consistent, comprehensive and reliable data before it can be applied across a whole investment portfolio. In the case of SDGs, this includes the recognition that companies' contribution to the SDG's may be multidimensional (positive, negative, neutral across the 17 SDGs) which generates

the need for various data points. We acknowledge the recommendation to also measure companies' 'negative contribution' to the SDGs. At this moment such a measurement is purely aspirational as no recognized methodology exists. We encourage financial institutions and other stakeholders to address this question collaboratively.

We also agree with the acknowledgement that the type of SDI methodology used and the way it is applied can significantly influence the outcomes. Currently there is a diversity of SDI measuring approaches deployed by both ESG data providers and asset managers such as MN. This means that the results differ not only between financial institutions, but also between (or even within) portfolios depending on whether SDG contribution data from ESG data providers is used or whether the measurement is done qualitatively (manually). Relevant stakeholders could consider taking steps to standardize these diverse approaches and wherever possible share their learnings and experiences from applying their SDI frameworks.

We also wish to further emphasize the role of companies in closing data gaps and developing consistent, standardized reporting on their contribution to the SDGs. Today, for many companies detailed information on revenue streams is not available. We do, however, hope that the consideration of SDGs in investment decision making processes by financial institutions can act as a way to stimulate companies to research and report on how they already contribute or how they could contribute to the SDGs.

The case study at hand provides valuable recommendations to improve the existing SDI approach that will surely provide food for thought, and we thank Annebeth and the Erasmus Platform for their work. At MN, we will continue this investigation and look for ways to optimize our exposure to the SDIs. We hope that this case study will catalyze further research on how pension funds can 'steer' on the SDGs in mainstream investment portfolios whilst avoiding concentration risk and abiding by other existing mandate requirements.

7 References

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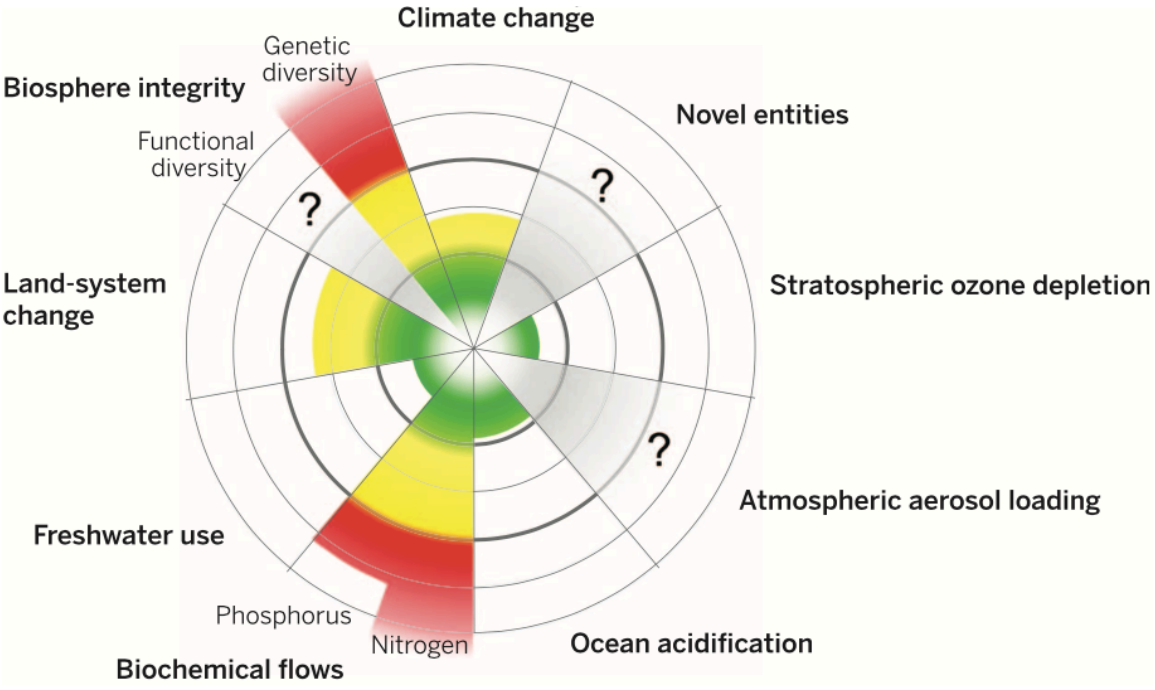
8 Appendices

APPENDIX 1: NINE PLANETARY BOUNDARIES



Source: Steffen et al. (2015)

APPENDIX 2: EXAMPLES SDG INVESTING APPROACHES

The table below (next page) provides examples and basic characteristics of various approaches and strategies launched by financial institutions in the past few years. The items under the 'Name' column also provide hyperlinks to the approach or strategy's website. This overview is not exhaustive and does not distinguish between SDG alignment and SDG impact investing strategies.

Financial Institution	Name	Method	Asset Classes	Impact Metric
APG and PGGM	Sustainable Development Investments (SDIs)	Via SDI taxonomy and Entis or VigeoEiris data	Portfolio level, multiple asset categories	Per business percentage revenue aligned with SDGs, for investment portfolio percentage aligned with SDGs
FMO	Impact model and SDG approach	Direct investee information and input-output modelling	Portfolio level, multiple asset categories	The impact model focuses on jobs supported, value added, GHG emissions and avoidance
Kempen	Global Impact Pool	Selection funds with GIIN-database, DD research and weighing of impact.	PE, Infra, Private Debt and Green bonds	Impact on five SDGs (3,6,7,8,12), for each SDG measurable goals. Different impact metrics such as farmers reached, MW wind energy, avoided emissions and qualitative case studies
M&G Investments	Impact Financing Strategy	Investment in 12 identified impact themes	Private Debt	Different impact metrics such as number of new social homes, patients registered and MwH renewable energy
MN	Sustainable Development Investments (SDIs)	Via SDI taxonomy and MSCI data	Portfolio, multiple asset categories	Percentage of investments aligned with SDGs
NN IP	NN Impact Strategies	Eight impact themes with impact assessment and SDG tagging	Equities	UN SDG Scores of fund and benchmark, and metrics like saved emissions and waste footprint
PGGM	Beleggen in Oplossingen (BiO)	Investments in four identified solution areas	Portfolio level, multiple asset categories	Different impact metrics such as MwH renewable energy and m3 water saved
Robeco	RobecoSAM Guidebook	Decision rules based on most important SDG goals per sector	Equities and credits	SDG Score from -3 to +3
Triodos IM	Gobal Equities Impact Fund	Sustainable transition themes	Equities	Percentage contribution score (to each SDG) of fund and benchmark, amongst others metrics