



Impact

How to Measure Sustainability

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Executive Summary

This paper discusses “impact” as the basis for sustainable investing. “Impact” is abbreviated for “impact on the environment and society”, i.e. the contribution, for instance of an invested company, to a sustainable development. Impacts are defined as “extra-financial” effects, i.e. effects that are not (fully) internalised into market prices. The reason for this is market failure, especially due to external effects (“externalities”).

Consequently, companies have a *negative impact* on environment and society if their products, services and processes contribute to perpetuating or increasing market failures. In contrast, companies have a *positive impact* on environment and society if their products, services and processes contribute to reducing market failures. Market failure is the cause of global risks such as climate or weather risks, water crises, loss of biodiversity or human rights violations. This is the reason, why negative impact is closely related to transition risks, and positive impact to transition opportunities for companies as well as investments into these respective companies.

Investors can use *capital allocation and active ownership (engagement and voting)* to influence company behaviour and achieve a positive investment impact. To do so, investors deliberately set impact-related investment goals, decide upon selecting certain investments or using engagement and voting, and, finally, assess the portfolio’s impact and control it.

Relevant, reliable and, thus, comparable impact assessments, however, are rare. As requirements, they need to *assess external effects, encompass entire value chains, use benefits as reference values and aggregate the various impacts*. Most assessments currently used in sustainable investing such as SDG assessments, traditional ESG ratings, EU Taxonomy compliance and sustainability risk analyses are insufficient and do not (completely) fulfil these requirements.

The ESG Impact Rating is Inrate’s impact assessment which was created to fulfil these requirements. It measures the encompassing sustainability impacts of companies on the environment and society along entire value chains, using the following components:

- Product Assessment: Impact of invested companies’ products and services on society and environment along entire product life cycles as the main focus of the assessment.
- CSR Assessment: Systematic assessment of management & operation practices concerning Corporate Social Responsibility (CSR).
- Controversial practices and their negative impact on society and environment.
- Sector-specific indicators and weights to account for sector-specific sustainability issues.

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1. “Impact” – the Basis for Sustainable Investing

In this report, we discuss “impact” and its relevance in sustainable investing. “Impact” is abbreviated for “sustainability impact” on the environment and society, i.e. the contribution to sustainable development, for instance of a company or an investment. In this paper, we explore how investors can create a positive impact. We further explain, how they can measure and then consciously manage and control such impact.

In chapter 1, we address the reasons why the concept of impact is crucial when integrating sustainability resp. ESG factors into investing. Furthermore, we explore how investors can influence companies’ impact on the environment and society and control their portfolios’ impact. In chapter 0, we set out what it takes to reliably assess impact. Based on this, we evaluate the strengths and weaknesses of approaches commonly used for sustainable investing. Finally, in chapter 0, we explain how Inrate assesses impact by presenting the ESG Impact methodology.

1.1. Why assess and control impact

A wide range of global initiatives and agreements is trying to initiate structural change towards a sustainable economy and, more and more so, to also transform the financial system. The Paris Agreement, for example, explicitly names financial actors as players in climate policy.¹ The 2030 Agenda for Sustainable Development points to the enormous need for private financing to achieve the Sustainable Development Goals (SDGs).² Furthermore, far-reaching regulatory changes addressing sustainable finance have been introduced recently, especially in the EU³. This has created a strong momentum in the financial sector to integrate sustainability factors into investment decisions.

Regardless of the motives for sustainable investing – ethical values, reputation, risk-return and/or compliance – the impact of investments on the environment and society is the very basis and, thus, needs to be assessed and controlled:

- **Ethical values:** Investing according to sustainability-related values means that investors aim to contribute to a sustainable development. Impact is the concept which then measures this contribution and must, therefore, be in the centre of ethical investing decisions. For instance, one of the prerequisites for investing in an “environmentally friendly” way is to assess the impact of investments on the climate, on biodiversity, etc. and aggregate these into an overall environmental impact.
- **Reputation:** Positive and negative impact directly represent reputation opportunities and risks. Knowing about impact allows customers and shareholders to act on their sustainability-related preferences and expectations.⁴ Companies and potentially entire industries with a strong negative impact are at risk of stigmatisation if the impact becomes public. Companies with a positive impact might in turn benefit from reputation gains.
- **Risk-return:** Positive or negative sustainability impact entails transition-related opportunities and risks for companies.⁵ Reputation, as described above, is a part of this equation. Companies with positive impact, e.g. due to high energy or resource efficiency, save costs, increase market opportunities, and, more and more, lower their financing costs. Companies with negative impact, e.g. due to very energy intensive products, have transition-related risks. This becomes all the more noticeable if future climate policies get increasingly effective. These opportunities and risks influence risk-return for investors and credit risks for creditors.

¹ The Paris Agreement explicitly states that “financial flows [be made] consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” UNFCCC 2015: Paris Agreement.

² United Nations General Assembly 2015: Transforming our world: the 2030 Agenda for Sustainable Development; und United Nations 2015: Addis Ababa Action Agenda of the Third International Conference on Financing for Development.

³ The most important recent EU regulations related to sustainable finance are: (a) the EU Taxonomy and related regulations such as the EU Green Bond Standard and the EU Ecolabel, (b) the EU Regulation on Sustainability-related Disclosure in the Financial Services Sector (SFDR), the amendments to the Benchmark Regulation, the Non-Financial Reporting Directive (NFRD), and the Markets in Financial Instruments Directive (MiFID II).

⁴ SSF 2019.

⁵ SSF 2019.

- **Compliance:** The EU's current sustainable finance regulations, for instance the EU Taxonomy and the Sustainability-related Financial Disclosure Regulation (SFDR), aim to direct financial flows towards sustainable economic activities, increase transparency and eradicate greenwashing. As such, they have the potential to fundamentally change the framework conditions of the financial sector.

The current regulations and their aims are all – explicitly or implicitly – linked to the concept of impact: to achieve a positive impact, mainly through capital allocation, to assess impact, and to increase impact-related transparency. The SFDR, for instance, requires adverse impact and related risk assessment and reporting. It sets standards for “sustainable investments”, by regulating that only investments in economic activities with a positive impact on the environment and society can legally be called “sustainable investments”. The EU Taxonomy names economic activities with positive environmental impact. This shows that disregarding impact, despite explicitly or implicitly claiming to do so, increasingly comes with reputational risks, and, in the EU, with legal risks.

The developments in the EU already have spill-overs to other markets and might serve as a regulatory template. In Switzerland, the new EU regulations are relevant for many Swiss financial market players already today: They are directly relevant, if a Swiss financial actor has EU branches, offers products in the EU or has clients in the EU. The regulations might also be indirectly relevant, due to increasing domestic market pressure and stakeholder expectations by clients, NGOs / media, the FINMA, etc. Last, but not least, the Swiss regulator might introduce similar regulations in the future or, at least, regulations with similar goals.

Thus, regardless of the investors' motives: Sustainable investing is always, explicitly or implicitly, impact-oriented investing.

1.2. How to achieve a positive company impact

This chapter investigates the mechanisms of how investors and creditors can contribute positively to sustainable development through investing and lending. Such a positive contribution is called “investment impact” or “credit impact”, respectively, or generally speaking “financing impact”. Credit impact is not in the centre of this article and is only mentioned here for the sake of completeness. To be able to measure and steer impact, it is crucial for investors to know and understand such mechanisms. In the second part of the chapter, we focus on investments and their impact only.

Investment and credit impact

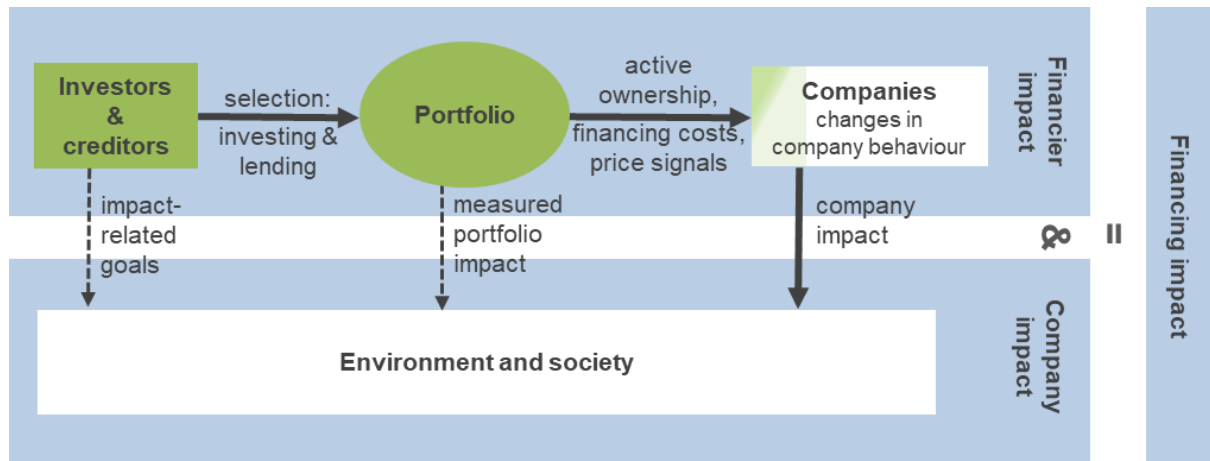
Investments and credits can contribute to sustainable development resp. create a positive “financing impact” on the environment and society in the following way (see

Figure 1):

- **Financier impact:** Firstly, investors and creditors influence company behaviour in the economy by changing or enforcing certain company activities. This may be done directly or indirectly as well as intentionally or unintentionally, which is explained in more detail below.
- **Company impact:** Secondly, the different company behaviour then has a positive impact on the environment and society. Here, not only the behaviour of invested companies might be influenced but also of other companies. For instance, insisting on improving transparency does not directly improve investment impact. However, it helps stakeholders to make informed decisions – e.g. customers to buy more sustainable products, or investors to improve portfolio impact⁶.

⁶ Portfolio impact is defined as the impact of invested companies (or other assets such as real estate) on the environment and society.

Figure 1 – Financing impact



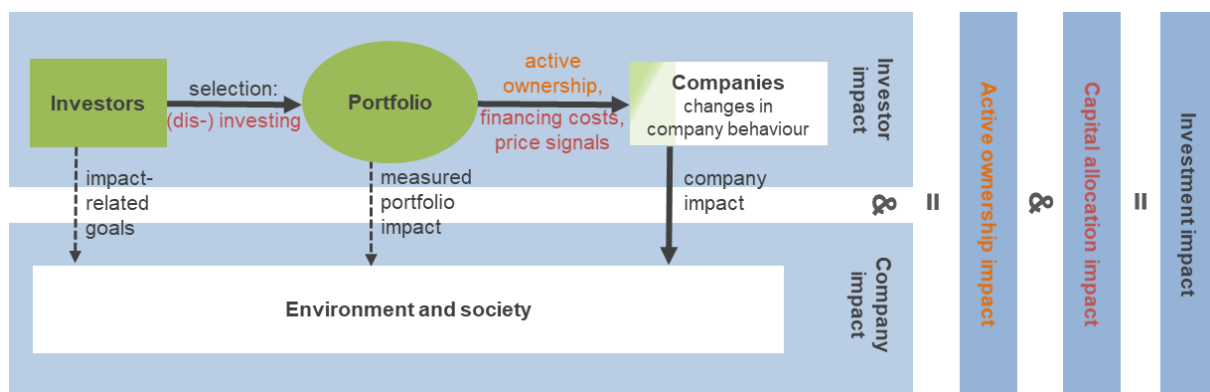
This figure shows that financing – investments and credits – can contribute to sustainable development resp. have a positive financing impact on the environment and society, only if investors and creditors change company behaviour in a positive way (financier impact) AND if this behaviour change has a positive physical company impact on the environment and society (company impact).

Source: Inrate, based on Kölbel et al. 2019.

Investors can use three mechanisms to influence company behaviour and achieve positive investor impact (see Figure 2):

- Capital allocation
- Active ownership
- Indirect effects⁷

Figure 2 – Capital allocation impact and active ownership impact



This figure shows that investment impact can be achieved via capital allocation impact – where capital allocation changes financial market prices and/or financing costs and, this way, improves company impact – and / or active ownership impact – where engagement or (proxy) voting improves company impact over time. Further indirect investment impacts are not included in the figure.

Source: Inrate, based on Kölbel et al. 2019.

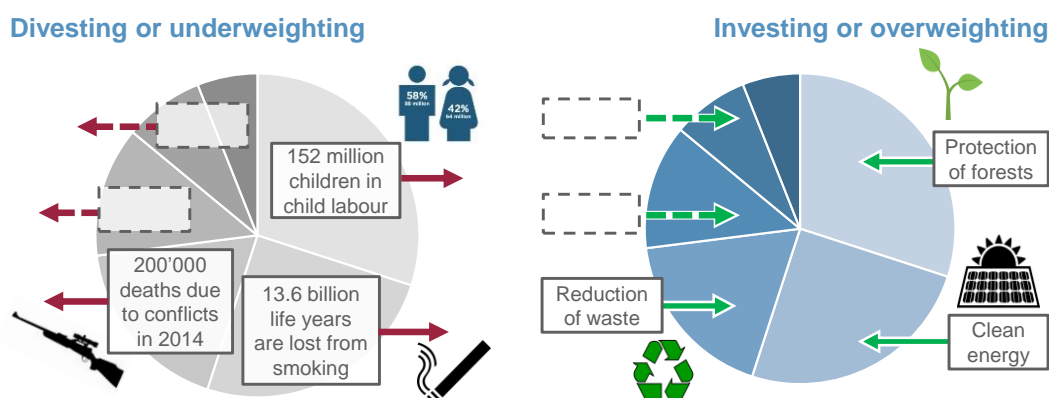
⁷ For the sake of clarity, indirect effects are not shown in

Figure 1 and Figure 2.

1. Capital allocation

Capital allocation steers capital away from certain non-sustainable investments (shares, bonds, real estate, etc.) to more sustainable ones, see Figure 3. On the one hand, this is done by deliberately divesting or underweighting. Movements promoting fossil fuel divestment, for instance, have gained a strong momentum. Worldwide divesting commitments collected from institutional investors correspond to over \$14 trillion in 2021.⁸ On the other hand, the freed-up capital is used for investing in or overweighting of investments with a positive impact. Companies with sustainability-oriented business models are good options, e.g. a company producing sustainable packaging solutions or renewable energy providers. Such selection improves the “portfolio impact”, i.e. the impact of invested companies (or other assets such as real estate) on the environment and society.

Figure 3 – Sustainability-oriented portfolio selection



This figure shows how divesting or underweighting and investing or overweighting changes portfolio composition. This improves the “portfolio impact”, i.e. the impact of the investments in a portfolio.

Source: Inrate 2021.

Capital allocation may increase the relative share and/or bond prices of sustainable companies.⁹ So far, few studies have shown this price effect.¹⁰ For example, in one study, stocks which are often excluded from sustainable investment funds such as tobacco, alcohol, and gambling exhibited depressed share prices.¹¹ The size of this effect depends on the market resp. wealth share of sustainable investors. Moreover, it is stronger due to herding behaviour by passive investors if benchmarks increasingly comprise sustainable equities or bonds.¹² Over time, capital allocation impact (Figure 2) could systematically influence financial market prices. Such price signal strengthens the competitiveness of sustainable companies. It, thus, enables them to expand their activities relative to their competitors. This can drive structural change towards a more sustainable economy.¹³

2. Active ownership

Another important mechanism next to capital allocation is active ownership. Here, investors engage with companies and/or use (proxy) voting to steer company decisions in a more sustainable direction. This way, investors advance incremental improvements in company operations and, thus, improve company impact. The mechanism differs from capital allocation in this aspect: Active ownership does

⁸ “Divestment commitment”, <https://gofossilfree.org/divestment/commitments/> [30.042021].

⁹ Kölbel et al. 2019.

¹⁰ In a thorough literature review, Kölbel et al. 2019 have found only few studies investigating capital allocation impact: Hong and Kacperczyk 2009; Teoh, Welch, and Wazzan 1996; Baker et al. 2018; Zerbib 2019; Hachenberg and Schiereck 2018.

¹¹ Hong and Kacperczyk 2009.

¹² Kölbel et al. 2019, p. 10, with numerous studies.

¹³ According to Kölbel et al. 2019, the following papers show this effect: Fama and French 2007, Beltratti 2005; Heinkel et al. 2001; Luo and Balvers 2017.

not necessarily result in a better portfolio impact right away. However, it usually leads to incremental portfolio impact improvements over time.

Just as with capital allocation, the company impact achieved via engagement and voting, the “active ownership impact” (Figure 2), is not fully controllable. It depends on potential systemic effects in the economy and on the actual cause of company impact (“additionality”, see below):

- *Systemic economic effects:* If active ownership activities improve company reporting on greenhouse gas (GHG) emissions, for instance, the portfolio impact is not improved right away. However, increased transparency allows customers to deliberately choose climate-friendly products which, finally, creates a positive company impact in the economy. In another example a company might, as the result of active ownership pressure, improve its climate intensity by merely selling an energy-intensive production facility to a competitor. This way, portfolio impact improves, but not necessarily the resulting company impact in the economy.
- *Additionality:* Active ownership activities improve company impact only if there is a causal link between these ownership activities and the impact improvement. This means in turn that, without the active ownership activities, the company impact would not have improved. For example, additionality applies if a company increases energy efficiency in its production facilities only due to investor pressure. If the company would have done so without such pressure, e.g. because of high energy savings and a short payback period, additionality is not necessarily given.

3. Indirect effects

In addition to capital allocation and active ownership, sustainable investors can indirectly affect the economy and its impact in a positive way. For instance, ESG ratings demanded by sustainable investors can encourage and help companies to improve their operations based on such ratings. Furthermore, a positive ESG rating can strengthen company reputation and, thus, financial resilience in times of crisis.¹⁴ For the sake of clarity, indirect effects are not shown in Figure 1 and Figure 2.

1.3. Controlling portfolio impact

The mechanisms described above (capital allocation, active ownership and indirect effects) show that investors can never fully control the impact that companies have on the environment and society. The final and comprehensive investment impact is therefore always uncertain, difficult to measure and can only be detected ex post, i.e. in retrospect, no matter which mechanism is used to achieve this impact.

“Portfolio impact”, i.e. the impact of the invested companies, real estate, etc., on the other hand, can be measured and controlled. Therefore, to deliberately control investment impact, it is advisable for sustainable investors to focus on the portfolio impact as reference. In doing so, it is also recommendable to further consider effects and outcomes on the economic system as a whole. The effects of divestment or engagement, for example, might be substantially increased by joining together with other investors.

To achieve a positive portfolio impact in this sense, investors ideally take the following steps:

- Set impact-related goals, e.g. to improve climate intensity of the investment portfolio by 25% within three years.
- Decide upon applying the following strategies to reach these goals:
 - Selecting certain investments by deliberately investing or overweighting, and disinvesting or underweighting, in order to improve the investment portfolio’s impact.
 - Using engagement and voting to change company activities and, this way, improving the portfolio’s impact over time.

¹⁴ Lins, Servaes, Tamayo 2017.

- Measure the portfolio's impact and control it in order to ensure that selection and active ownership can be directed both effectively and efficiently toward reaching the set goals.

2. How to Assess Impact

In this chapter, we elaborate on the definition of impact and the requirements for correctly measuring it. We then take a look at how well current impact assessments fulfil these requirements.

2.1. Measuring the right thing

As described above, impact measures the contribution to sustainable development or the effect of e.g. invested companies on the environment and society. These impacts are defined as "extra-financial" impacts, i.e. impacts that have not been completely internalised into market prices.

The reason for such impact is market failure, especially due to external effects ("externalities").¹⁵ External effects are effects on third parties that have no (adequate) effect on the polluter. The reason being that negative effects are not reflected in market prices or in any other effective contractual relationship between the polluter and the affected parties. For instance, climate change is a global problem that disproportionately affects developing countries,¹⁶ while per capita emissions are strongly correlated to GDP per capita and, thus, are primarily caused by developing countries.¹⁷ Market failure usually arises in combination with failures in the political or legal system that are unable to prevent market failure by establishing suitable framework conditions.

Based on the concept of market failure, the definitions for positive or negative company impact can be derived: Companies have a *negative impact* on the environment and society if their products, services and processes contribute to perpetuating or increasing market failures. For example, airlines have a high negative impact, especially on the world climate. Flying today is not only fast but relatively inexpensive. It allows people to shop or spend their holidays far away from home and, thus, leaving a rather large carbon footprint, compared to staying close. Consequently, airlines are part of the problem, not of the solution.

In contrast, companies have a *positive impact* on the environment and society if their products, services and processes contribute to reducing market failures, i.e. improving the impact of economic activity on the environment and society. Such companies are part of the solution, not of the problem, and thus play their part in sustainable development. They do so, for example, by offering extensive training opportunities for their employees and trainees. This tendentially increases income and employability of employees, and, this way, might strengthen entire families and communities. Offering substitutes for technologies, products, and services with a high negative sustainability impact is also, in a net perspective, a positive impact. For example, the generation of renewable electricity has negative external effects. But as it helps to replace nuclear or fossil fuel-based energy generation, it decreases the overall negative impact of the energy sector.

Negative impact is closely related to transition risks, and positive impact to transition opportunities. This is the case because of the following interactions: Market failure is the cause of global risks such as climate or weather risks, water crises, loss of biodiversity or human rights violations.¹⁸ The more serious the issue, the stronger the need to change framework conditions for companies and initiate structural change (see Figure 4). Stakeholders that may become active in this regard might be the international community of states, regulators, media, society, clients, NGOs, etc. Regulators, for instance, might implement increasingly strict environmental regulations. For example, the EU and

¹⁵ Further relevant types of market failure are amongst others: (a) Asymmetric information, i.e. one transaction partner is missing information relevant to the transaction; (b) Principal-agent-problem or agency-dilemma, i.e. a person or institution (agent) makes decisions or takes actions on behalf of or with consequences for another person or institution (principal). Agents have an incentive to act in their own best interests, even though they are contrary to those of their principals. (c) Moral hazard, i.e. a person or institution increases their exposure to risk because they do not bear the full costs of that risk, e.g. because they are insured.

¹⁶ Chinowsky et al. 2011.

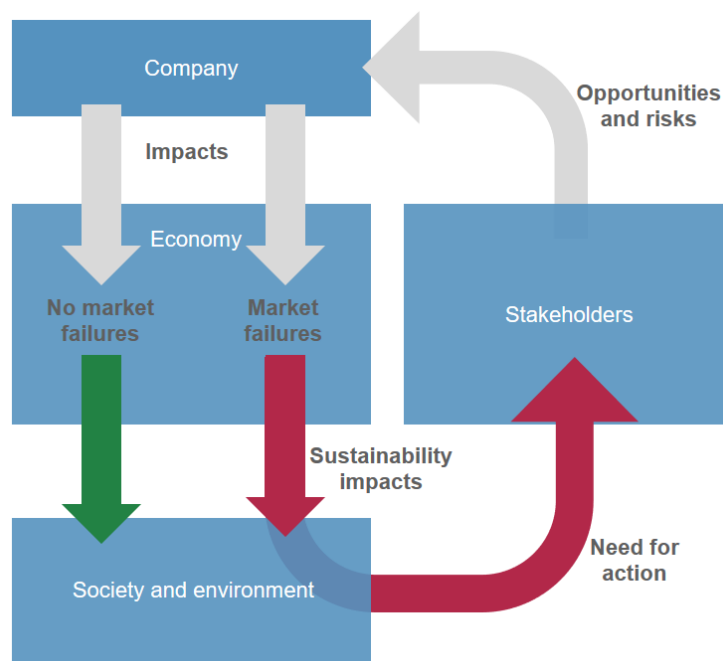
¹⁷ WIR 2005.

¹⁸ World Economic Forum 2021: The Global Risks Report 2021.

Switzerland regularly tightens restrictions on CO₂ emissions from new sold cars.¹⁹ Consumers might boycott chicken from specific countries due to poor conditions in animal husbandry, or increase demand for dairy substitutes such as plant-based milk to decrease GHG emissions.

Such structural change ideally corrects market failure, especially by internalising external effects into market prices. Structural change is the reason why companies with a positive impact on the environment and society as compared to their competitors have so-called *transition opportunities*, while those with a negative impact as compared to their competitors have so-called *transition risks* (see chapter 1.1).²⁰

Figure 4 – Sustainability impacts of companies owing to market failure



Source: Inrate 2020.

In this sense, every company and every investment has an impact. Just as companies face impact-related transition risks and opportunities, investments in these companies carry corresponding risks or opportunities. This means that, regardless of intention or awareness, every investor implicitly or explicitly positions themselves in terms of impact. Market failures and negative impacts are not a matter of opinion but a matter of fact – of factual influence on society and the environment. Not consciously taking care of impact means to accept it, to stay involved in and, finally, to be held responsible for it.

2.2. Measuring the right thing right

The illustrations, definitions and connections laid out above allow to derive the following requirements for relevant, reliable and, thus, comparable impact assessments:

- Assessing external effects
- Focussing on encompassing entire value chains

¹⁹ <https://www.bfe.admin.ch/bfe/en/home/efficiency/mobility/co2-emission-regulations-for-new-cars-and-light-commercial-vehicles.html> [07.05.2021].

²⁰ TCFD 2017.

- Using benefits as reference values
- Aggregating impacts

1. Assessing external effects

As explained in chapter 2.1, impacts on the environment and society are caused by market failures, especially negative externalities. The assessment of these "extra-financial" effects is therefore the basis of any impact assessment. Firstly, it allows to identify the relevant sustainability issues to include into an impact assessment, such as climate change and biodiversity loss. Secondly, it is the basis for assessing the magnitude of negative externalities. Here, physical footprints are ideally measured such as carbon footprints, water footprints, hazardous waste ratios, gender pay gaps, number of accidents at work, etc.

2. Focussing on encompassing entire value chains

Full impact assessments include not only the assessment of a company's management and processes and the direct impact caused by them. The main focus of an impact assessment is on products and services and the impact they have along entire value chains. This is vital because relevant product-related impact often arises outside a company. For example, main impact in the transport and housing sectors is usually caused during product use, or in the food sector in the supply chain.

3. Using benefits as reference values

As described in chapter 2.1, a company's impact is positive in an overall systemic perspective if it contributes to reducing market failures in the economy. If it contributes to maintaining or even increasing market failures, its impact is negative. To assess such impact, one needs to focus on societal needs and how well they can be fulfilled. Housing, nutrition, transportation, energy, etc. are all examples for fundamental societal needs. These needs serve as reference values for evaluating physical environmental or social footprints of companies' products, services, and processes. The question to be asked is whether a certain need can be fulfilled with an alternative product, service or process that have better footprints.

For instance, as described above, renewable energy has a positive impact because they substitute fossil and nuclear energy. Energy-efficient machines and devices contribute to saving energy and, thus, also have a positive impact in terms of climate change or resource usage. Using benefits as a reference value to assess impact is necessary to evaluate companies' impacts in terms of mitigating climate change, conserving biodiversity, sustainable resource usage (water, forests, ecosystems, etc.), ensuring equality, and so forth.

4. Aggregating impacts

For effective capital allocation, it is finally necessary to normalize and aggregate the various impacts. Without such an aggregation, investors are left alone with trade-offs for instance between saving GHG emissions at the expense of greater land usage.²¹ Viable ways for normalizing and aggregating impacts can be semi-quantitative ratings such as the Inrate ESG Impact rating presented on a scale from A+ to D- (see chapter 0), or the monetization of external effects.²²

²¹ On portfolio level, these trade-offs can be revealed through so-called SDG mappings, displaying contributions to individual SDGs. See for example Inrate 2019.

²² The history of monetization of external effects is a long, especially in the energy sector. See for example Friedrich and Voss 1993 or Bemow et al. 1991. Currently, a wide range of methodologies is used to monetize externalities, as reviewed in Tekie and Lindbald 2013.

2.3. Current assessments are mostly insufficient

Most assessments currently used in sustainable investing are insufficient and do not fulfil the necessary requirements as explained in chapters 2.1 and 2.2. In this chapter, we evaluate the following assessment methods:

- Traditional ESG ratings
- SDG impact assessments
- EU Taxonomy compliance
- Sustainability risk analyses

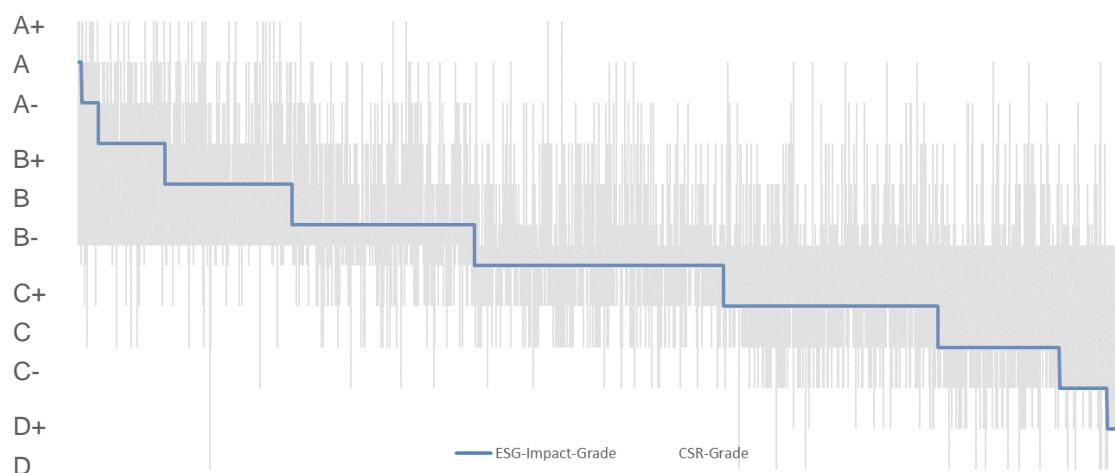
Traditional ESG ratings

Traditional ESG assessments are not suitable for impact assessments. There are two main reasons for this:

- Many ESG ratings do not attempt to measure impact but are based solely on assessing companies' corporate social responsibility (CSR) management systems and practices.
- The assessment methods are often not science-based, but, for instance, consist of a set of equally weighed ESG indicators.

CSR ratings reflect a company's readiness and capability to improve their sustainability impacts over time. However, companies operating in sectors with high negative impacts such as coal or oil are more likely to have highly professional CSR management systems.²³ Consequently, they might receive good ESG grades even though they have significant negative impacts on the environment and society. The following **Fehler! Verweisquelle konnte nicht gefunden werden.** shows that ESG ratings based solely on CSR management assessments differ significantly from those considering encompassing impact assessments. This means that assessing CSR is not enough to direct capital into sustainable economic activities.

Figure 5 – Companies' ESG Impact and their CSR quality



On the x-axis, companies are sorted from left to right according to their Inrate ESG Impact grades from A+ to D- (blue line). In comparison, the grey columns display the companies' CSR quality – a sub-rating of the Inrate ESG Impact rating – also on a scale from A+ to D- (see Annex A.1). Grades from A+ to B- stand for an overall positive net impact, from C+ to D- for an overall negative net impact. The graph shows that many companies with a positive impact have negative CSR ratings and many companies with a negative impact have positive CSR ratings.

Source: Inrate 2020.

²³ See for example Crane et al. 2017.

The difference between traditional ESG resp. CSR ratings and impact ratings as well as the difference between ratings based on science and those that are not, lead to considerable divergence in ESG ratings overall.²⁴ This goes so far that some companies or countries are rated positive by one data supplier and negative by another. This also underpins that traditional ESG ratings are not sufficient for impact assessment.

SDG impact

Currently, the impact of companies and portfolios is often assessed through so-called SDG mappings or SDG impact data. SDG mappings usually assess the invested companies' economic activities and define whether these contribute positively or negatively to each of the SDGs. In practice, SDG mappings are often used for marketing purposes, whereby individual – actual or supposed – positive SDG contributions are picked out and communicated. Such practice is commonly referred to as “SDG washing”.

However, if SDG mappings are based on reliable and scientifically sound concepts, they can measure effective positive and negative target contributions. Their value then is to highlight issue-specific or SDG-specific strengths and weaknesses of portfolios and thus trade-offs between investments and portfolios.²⁵

Nonetheless, even a reliable assessment of SDG impacts is hardly suitable for effective capital allocation or active ownership activities. Only a science-based aggregation of the various SDG impacts into an overall sustainability impact assessment allows to deliberately control and improve portfolio impact. Some SDG mappings are indeed aggregated into an overall “impact assessment”. However, in this case, SDGs are usually weighted equally, which is neither sufficient nor suitable.

EU Taxonomy Compliance

In the near future, investors in the EU will have to report the share of assets in a portfolio that is Taxonomy-compliant. Currently, though, the Taxonomy only covers the two objectives of climate mitigation and adaptation fully. There are four more environmental objectives which will have to be incorporated in the future: sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystems. So far, they have only been considered in terms of minimum requirements (doing no significant harm).

As the current Taxonomy is already quite extensive and not overly pragmatic, data requirements are huge. So far, they are not fully met by issuing companies. This means that the application of the Taxonomy is still quite complex and, to a large extent, requires expert-based assumptions. This problem could be further accentuated if the remaining four environmental goals will be included into the Taxonomy. Concerns were also expressed that political interests could undermine the scientific claim of the Taxonomy, especially if nuclear energy and natural gas were included into the Taxonomy of “green” economic activities.²⁶

The EU Taxonomy might in principle serve as impact assessment indicator, once these practical and conceptual shortcomings and gaps are eliminated. Nevertheless, the following serious drawback will remain: The EU Taxonomy is purely dichotomous by design. An economic activity is either defined as Taxonomy-compliant or non-compliant, resp. as “green” or “not green”. This makes it impossible to distinguish whether an economic activity is barely green resp. not green or strongly green resp. strongly not green. Gradual improvements are also not adequately visible, only when a technical threshold is just crossed. This means that the portfolio impact cannot truly be measured based on a Taxonomy-compliance indicator. Only impact assessments which allow for more accurate assessments on a cardinal or at least ordinal scale are able to do so: Measuring portfolio impact

²⁴ See for example Dimson et al. 2020.

²⁵ See for example https://www.inrate.com/cm_document/Factsheet_SDG_Portfolio_Analysis.pdf [May 10, 2021].

²⁶ Furthermore, the current criteria in the Taxonomy concerning forestry and bioenergy are criticised as weak or incomplete. See e.g. Hay 2021.

allows to compare the impact of different investments and portfolios and to assess changes in impact over time.

In summary, the Taxonomy-compliance indicator will not be sufficient for impact assessments. It may, however, fulfil its purpose to serve as compliance indicator to prevent greenwashing.

Sustainability risk analyses

Sustainability risk analyses, such as scenario-based analyses, are sometimes used as proxies for assessing capital allocation effects. However, risk analyses do not focus on the impact of a company or portfolio on the environment and society. Per definition, they either focus on transition-related risks and/or on risks that are not related to a company's or portfolio's impact at all, such as physical climate risks. Hence, transition-related risk indicators are only weak indicators for impact, while, for instance, physical climate risk indicators are not suitable for impact assessments at all.

In addition, risk analyses, such as scenario-based climate risk analyses, are forward-looking. This means that they rely on far-reaching assumptions with regard to the longer-term development of technologies, markets and policy measures, as well as with regard to the development of the company itself. For this reason, the results of such analyses have a very high degree of uncertainty. This is particularly true for the climate crisis. Its effects cannot be mapped by merely extrapolating current trends. Solving the climate crisis also requires that disruptive social and economic changes be tackled. Moreover, scenario analyses often have substantial "blind spots" because they do not cover all economic sectors that are relevant for climate protection.

3. Inrate ESG Impact Ratings

This chapter provides an overview of the ESG Impact Ratings awarded by Inrate. It describes the conceptual basis, the key components of the methodology, i.e. the product, CSR and controversy assessments, as well as the normalization and weighting of the rating criteria. It then goes on to describe how the absolute ESG Impact Rating result is calculated.²⁷

3.1. Conceptual basis and overview

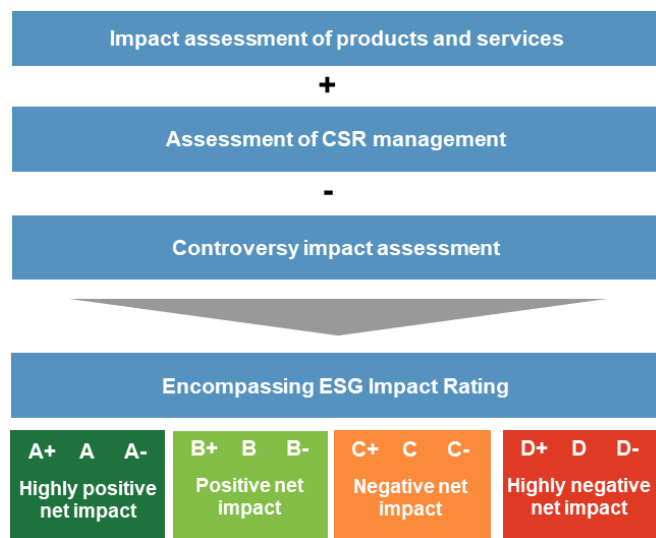
The ESG Impact Rating measures the encompassing sustainability impacts of companies on the environment and society along entire value chains. The conceptual basis are extra-financial assessments of external effects that, due to market failures, are not internalized into market prices (see Figure 4). The assessment is based on the following components:²⁸

- Product Assessment: Impact of products and services on society and the environment along entire product life cycles as the main focus of the impact assessment.
- CSR Assessment: Systematic assessment of management & operation practices concerning Corporate Social Responsibility (CSR).
- Controversial practices and their impact on society and the environment are included in the assessments.
- Sector-specific indicators and weights to account for sector-specific sustainability issues.

²⁷ A more detailed description of the ESG Impact Rating method can be found in Inrate 2018.

²⁸ Inrate 2018.

Figure 6 – The structure of ESG Impact Rating



Source: Inrate 2020.

The ESG Impact Rating indicators used are derived from overarching sector-specific sustainability topics. All relevant topics of the SDGs are included in this. The Inrate impact measurements are also in line with the principal structure of the EU Taxonomy. As compared to the EU Taxonomy, the ESG Impact and critical activities assessments are

- Encompassing: they cover all important environmental impacts as well as social impacts along entire life cycles and apply them to all economic business activities resp. sectors.
- Pragmatic and have been successfully used for many years.

3.2. Products, CSR and controversy assessments

The ESG Impact Rating encompasses the following assessments:

1. Impact assessment of products and services

A company is characterized by its products and services. Volkswagen, for example, produces passenger cars, light commercial vehicles, offers loans, etc. The company characterization assigns the company segments to the 350 activities and 110 sub-activities of the Inrate Business Activity Classification (IBAC) and weights them with the sales shares they generate.

Figure 7 – Business activities and sales shares - Volkswagen example

Segment reporting of company		Inrate IBAC segmentation	
Commercial Vehicles	14%	Automobiles	50%
Passenger Cars	72%	Light trucks & utility vehicles	22%
Power Engineering	1%	Heavy duty trucks & buses	7%
Financial Services	13%	Motorcycles & parts	5%
		Non-life insurance of automobile & air traffic	5%
		Automotive equipment rental	4%
		Credit business: Automobile and air traffic focus	4%
		Etc.	

Source: Volkswagen: Annual Report 2018, and Inrate 2020.

Subsequently, the impact of these activities and sub-activities is measured across the entire value chains, based on the Inrate Impact Matrix and other indicators. The Impact Matrix includes the following four impact vectors:

- Climate Impacts (global warming potential);
- Other environmental impacts such as water and land use, biodiversity loss, emissions, etc.;
- Direct social impacts on employees and consumers, e.g. on health;
- Indirect social impacts, which include sustainability impacts on society and other stakeholders.

For each IBAC activity and sub-activity, the Impact Matrix defines generic impact grades on a scale from A+ (highest positive impact) to D- (highest negative impact) for each impact vector. These grades are based on scientific data and analyses, such as empirical economic data (input-output tables) in combination with eco-balances. The underlying methodological concepts are those of market failures such as externalities, merit or demerit goods.

Figure 8 – Transportation-related impact values - excerpt from the Inrate Impact Matrix

Activities (selection)	Generic Impact Grades				Explanations
	Climate impact	Other environmental	Direct social impacts	Indirect social impacts	
Aircrafts	D	D+	B	C-	Aviation is responsible for 5-10% of climate-related emissions worldwide and causes further negative environmental impacts such as air pollution and noise. Although flying is valued positively for passengers, the negative external costs to society are enormous.

Automobiles	C-	C-	B	C	A quarter of global CO ₂ emissions are attributed to the transport sector, with road transport being by far the most important source of emissions. Although transport is valued positively for the passenger, the negative external costs for society as a whole are high.
Maritime transportation	C	C-	B	C	Shipping is a growing source of greenhouse gas emissions from transport and also a major source of air pollution. This causes health problems, acid rain and eutrophication. Although shipping is seen as positive for the economy, the negative external costs are high for society as a whole.
Rail transportation	B	B	B	B	Rail is the most energy-efficient mode of passenger transport. Rail transport is seen as positive for the passenger. The negative external costs for society as a whole are low.

Source: Inrate 2019.

To meet company-specific circumstances, activities can be further classified by applying certain parameters - such as the average greenhouse gas emissions of the car fleet. Inrate has defined over 80 different parameters for this purpose.

2. CSR management assessment

The CSR management assessment shows how effectively a company works on improving its impacts. This assessment corresponds to a classic ESG assessment. It is divided into the sustainability aspects of environment, labour (employees and suppliers), society and governance.

3. Impact assessment of controversial business practices

The impact assessment of controversial business practices is used to supplement and correct the overall assessment. The different cases of controversial business practices involving companies are categorised and assessed according to their severity, based on the following aspects:

- The negative impact on the environment and society;
- The company's involvement in the impact in question;
- Whether the company is taking action to improve the impact or prevent it in the future;
- The credibility of a controversial case.

3.3. Normalization and weighting of criteria

The rating criteria that are used to assess the impact of products and services and the CSR management systems are normalized on a scale of 1 (very positive impact) to 0 (very negative impact) for the. The controversy impact assessment is normalized on a scale of 1 (very negative impact) to 0 (no negative impact).

The rating criteria are weighted according to their importance to the company's sustainability impact assessment. The relative importance of the environmental, social, and governance aspects differs between the various sectors of industry. Consequently, in the sense of a utility analysis, the weightings that are given to those aspects reflect the importance of specific sustainability issues and impacts to a given industrial sector. Environmental criteria are particularly relevant for impact assessments in the oil and gas sector, for example. That is why the environmental aspect of sustainability carries a 50% weighting in the overall rating.

Figure 9 – Weighting system for the oil & gas drilling sector

Sustainability aspects	Environment		Society		Governance
Weightings	50%		42%		8%
Assessment level	Env. Impact 35%	Env. CSR 15%	Social impact 33%	Social CSR 9%	Governance 8%

Source: Inrate 2021.

3.4. Absolute ESG Impact Rating results on a scale of A+ to D-

The ESG Impact Rating process produces an absolute sustainability assessment on a 12-step scale from A+ to D-. This factors in whether or not, overall (i.e. on a net basis), companies satisfy basic social needs in a more – or less – sustainable way.

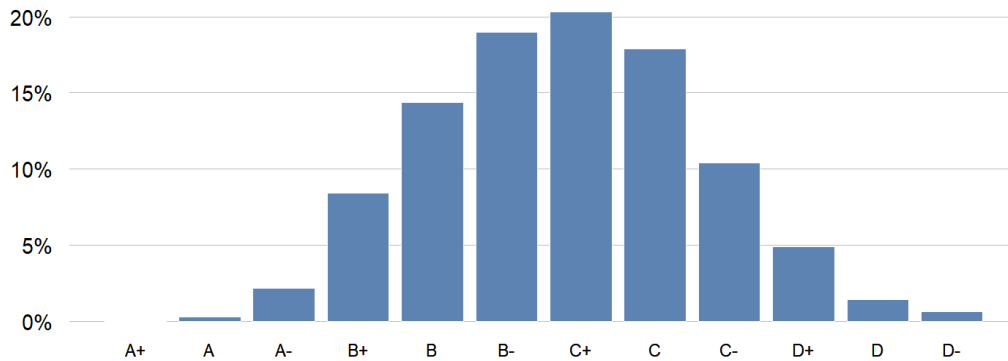
Figure 10 – ESG Impact Rating

A	A+ A A-	High positive contribution to the environment and society	The company has a high positive net sustainability impact. Its business practices, products, or services help to reduce social and environment-related problems. The company is thus facilitating the global move to a sustainable economy.
B	B+ B B-	Positive impact on environment and society	The company has positive net sustainability impact, i.e. its activities are consistent with a sustainable economy. However, its products, services, or business practices do not yet fulfil all of the requirements for sustainability. The company displays the actions to improve its sustainability performance.
C	C+ C C-	Negative environmental and social impact	The company has negative net sustainability impact, i.e. its activities are not sustainable. Its products, services, or business practices place a heavy burden on the environment and on society. However, the company displays insufficient actions to make its products or business practices more environmentally or socially responsible.
D	D+ D D-	High negative environmental and social impact	The company has a high negative net sustainability impact, i.e. its activities are not sustainable. Its products, services, or business practices place a heavy burden on the environment and on society. The company displays lack of action to make its products or business practices more environmentally or socially responsible.

Source: Inrate 2021

The distribution of ESG Impact grades is roughly bell-shaped (Figure 11).

Figure 11 – Distribution of companies over the ESG Impact grades

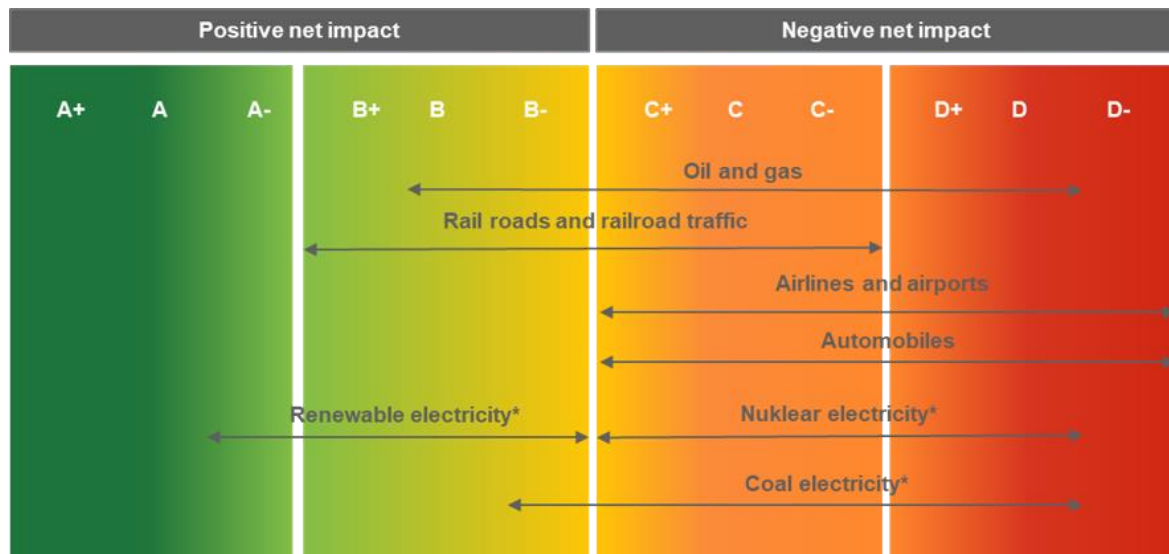


A+ corresponds to a very positive net impact, D- to a very negative net impact.

Source: Inrate ESG Impact ratings as of October 2020, based on a universe of 3'638 companies.

The ESG Impact Rating provides an **absolute measure** of a corporation's impacts on sustainability. It thus permits an assessment of and comparison between companies from different sectors and regions, as well as entire portfolios, as displayed in Figure 12.

Figure 12 – ESG Impact comparisons



ESG Impact Assessments allow for comparisons within and across industries and customer needs (e.g. for transportation, nutrition, housing, communication, etc.).

** Energy producers subsumed in these categories generate at least 25% of their turnover with the stated energy source.

Source: Inrate 2018.

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Inrate is an independent Swiss sustainability rating agency. Since 1991, Inrate links its in-depth sustainability analysis with innovative data and services for the financial industry. Inrate's ratings and data are a measure of the impact companies have with their activities on society and the environment as well as their actions to effectively tackle the global sustainability challenges. Inrate's research methodology has been developed and enhanced over the past 20 years.

Further information: www.inrate.com