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## INVESTING IN THE SDGs AND REPORTING BY ESG METRICS: THE ACCOUNTING PERSPECTIVE

Investiranje u ciljeve održivog razvoja i ESG izveštavanje  
– računovodstvena perspektiva

### Abstract

There are less than ten years left to achieve the goals set out in the 2030 Agenda for Sustainable Development. However, it seems that the remaining work on their implementation will take far more time than expected. This is particularly the case in developing countries which face difficulties in providing the necessary sources of finance for the acquisition of new technologies, investment in infrastructure projects, and the development of cleaner and environmentally-friendly production. Objective circumstances, such as the COVID-19 pandemic, the war in Europe and the subsequent energy crisis, have further slowed down these processes, threatening to undo the positive developments in the implementation of the sustainable development goals. Despite a significant progress made in the field of transparent reporting aimed at supporting the achievement of sustainable development goals, our impression is that a great number of different institutions have invested efforts to make a step forward in this domain, but due to the lack of globally coordinated activities, we are still far from a universal conceptual framework. That path is paved with numerous challenges. First, a high-quality conceptual framework must be compliant with the sustainable development goals to be able to track the global progress in their achievement, which requires an adequate system of performance measurement and monitoring at the global level. Second, the operationalization of sustainable development goals, recognized at the global level, must be followed by the adoption of compatible reporting at the corporate level, bearing in mind that companies are actually most responsible for local and planetary problems. The risks arising from inadequate performance measurement at the corporate level are far from being negligible. They are related to the efficiency in channeling limited capital toward the sectors and companies where it will be possible to produce the most beneficial environmental effects. At the same time, there is a risk of potential abuse with regard to the disclosure of good news or the cover-up of bad news, which casts doubt on the accuracy of information on the progress in achieving the SDGs, increasing risks of the misallocation of resources. In this paper, we investigate the complexity of aligning corporate reporting with the requirements imposed by the SDGs.

**Keywords:** *sustainability, environmental protection, SDG, ESG, GRI, sustainable investment, sustainable finance, sustainability reporting*

### Sažetak

Ostalo je još manje od deset godina da se realizuju ciljevi postavljeni u Agendi za održivi razvoj 2030. Preostali poslovi u tom pravcu čini se da ubedljivo nadilaze taj period. To je posebno slučaj u nedovoljno razvijenim zemljama, koje imaju problem sa obezbeđenjem neophodnih izvora finansiranja za nabavku novih tehnologija, ulaganja u infrastrukturne projekte, obezbeđenje čistije i ekološki zdravije proizvodnje. Objektivne okolnosti, kao što su kovid 19, ratna zbivanja u Evropi i njima uslovljena energetska kriza, dodatno su usporili ove procese, preteći da ponište pozitivne pomake u realizaciji ciljeva održivog razvoja. Uprkos značajnom napretku na području transparentnog izveštavanja koje bi podržalo ostvarenje ciljeva održivog razvoja, utisak je da su u tom domenu prisutni naponi većeg broja različitih institucija da se napravi iskorak, ali da nas nedostatak globalno koordiniranih aktivnosti još čini dosta udaljenim od jedinstvenog konceptualnog okvira na ovom području. Izazovi u tom smislu su veliki. Prvo, kvalitetan konceptualni okvir mora da bude kompatibilan sa ciljevima održivog razvoja, kako bi se mogli pratiti globalni pomaci u njihovom dostizanju, što podrazumeva adekvatan sistem merenja i praćenja globalnih ostvarenja. Drugo, operacionalizacija ciljeva održivog razvoja, prepoznatih na globalnom nivou, mora ići u pravcu kompatibilnog izveštavanja na nivou preduzeća, koja su realno najveći uzročnik lokalnih i planetarnih problema. Rizici od pogrešnog merenja performansi na korporativnom nivou daleko su od zanemarljivih. Oni su povezani sa efikasnošću kanalsanja ograničenog kapitala prema sektorima i preduzećima gde će ekološki efekti biti najveći. U isto vreme, moguća zloupotreba objavljivanja dobrih i prikrivanja loših vesti ostavlja sumnju u tačnost informacija o dostignućima u realizaciji ciljeva održivog razvoja, povećavajući rizike od pogrešne alokacije resursa. U ovom radu istražujemo kompleksnost izveštavanja na korporativnom nivou u skladu sa zahtevima ciljeva održivog razvoja.

**Ključne reči:** *održivost, zaštita životne sredine, SDGs, ESG, GRI, održivo investiranje, održive finansije, izveštavanje o održivosti*

## Introduction

In the past, the concept of social responsibility was primarily aimed at identifying companies that manufactured products that are harmful (dangerous) to human health. That was regarded as socially unacceptable behavior, leading to the reluctance of responsible investors to hold the shares of such companies in their portfolio. In other words, even then we could already talk about socially responsible investing (SRI) in this segment.

Over time, the problems of social responsibility became more complex so that many companies have striven to be recognized by their socially responsible behavior, taking into account, among other things, the benefits that might result from it. These companies have a better reputation, are more attractive to investors, have access to more affordable credit sources of finance, are more appealing to customers, can retain the existing and recruit new talents more easily and have a lower cost of capital. Numerous empirical studies have shown that there is a correlation between socially responsible behavior and a company's financial performance. For example, it has been found that the companies that belong to the Dow Jones Sustainability Index (DJSI) have higher return on assets than non-DJSI companies [9]. The relationship between corporate social responsibility (CRS) and corporate financial performance (CFP) was also empirically confirmed [40], [56]. The U.S. and European companies that created the highest shareholder value in the ten-year period (2007-2017) also achieved stronger employment growth [35, p. 15].

The identification of socially responsible companies by the investment community is an issue of utmost importance. Hence, performance measurement, preparation of adequate reports, and their transparent communication have become a necessity for companies, investors, regulatory bodies, and society as a whole. Of course, we are talking about additional information relative to that already found in official financial reports. Additional reports, containing predominantly non-financial information on environmental and other important social issues (information on greenhouse gas emissions, levels of carbon dioxide, environmental degradation, the amount of waste classified according to the degree of its danger to human health, investment in

cleaner production, impact on climate change, etc.), should provide a broader picture which could help us to gain a deeper insight into economic, environmental and social dimensions of a company's performance. Such information largely falls under the accounting responsibility and is of interest to both external and internal users.

The adoption of the Sustainable Development Agenda, in the form of the document "*Transforming our World: the 2030 Agenda for Sustainable Development*" [51], by the UN General Assembly in 2015, raised the awareness of the planetary problems to the highest possible level. The establishment of the 17 global SDGs has clearly indicated the right direction of further efforts at the global, regional, national and corporate levels, toward protecting the planet and creating equal opportunities for nations and individuals, i.e. a fairer and more socially responsible world. The defined SDGs require substantial investment in new technologies, education, eradication of poverty and hunger, renewable energy sources, environmental protection, etc. The implementation of the planned investment activities also entails the provision of adequate sources of finance in a relatively short period of 15 years, which is a difficult task for developed countries, and particularly for developing and underdeveloped ones. Moreover, the SDGs have brought new challenges regarding the reporting transparency, including the complex requirements in terms of measuring the progress toward achieving the SDGs of a global character, but also measuring and reporting on performance at the national and corporate level, with the aim of identifying environmentally friendly, socially responsible and financially successful companies. In this context, the appearance of ESG conceptual framework, focused on environmental, social and corporate governance dimensions, has undoubtedly contributed to the expansion of the information base that enables a more comprehensive analysis of the business, financial and environmental profiles of companies. At the same time, ESG framework largely facilitates the investors' orientation toward financially prosperous and socially responsible companies.

In this paper, the emphasis is placed on the problems encountered in the implementation of SDGs. We are primarily referring to the constraints that exist in today's environment burdened by the COVID-19 pandemic, the war in Ukraine

and the major energy crisis, but also to the issues related to insufficient investment in SDG sectors, particularly in developing countries, and difficulties faced in closing the gap in financing necessary projects. Bearing all this in mind, it is questionable whether the goals set out in the Agenda could be achieved within the stipulated period. Another problem, which should also be seen as a matter of great concern, is related to the fact that even after a half of the estimated time spent in implementing the goals defined in the Agenda, we still do not have a universally accepted multidimensional conceptual framework for reporting on companies' performance. This does not necessarily mean that no progress has been made in this area, but it rather indicates the lack of a clear enough strategy that would define how the reporting should be conceived: who should be the users of these reports (mainly investors, the community or all stakeholders), what is the main purpose of reporting (the assessment of risks and opportunities for value creation or the assessment of a company's impact on the environment), what should be the contents and structure of reports, whether to opt for integrated reporting or to prepare the sustainability reports independently of official financial reports, whether to establish mandatory reporting in regular time intervals or it should rather be voluntary and occasional, etc. Of course, there are also other open issues that need to be tackled.

## Challenges in achieving the SDGs by 2030

### The changing global context for the operationalization of SDGs

The risks associated with climate change, the existence of hunger and poverty, pronounced inequality, environmental degradation, overconsumption of resources to the detriment of future generations, etc., are the biggest threats to the sustainability of our planet. Due to the irresponsible behavior, first of all, of companies and their disregard for the obligation to protect the environment that persisted for too long, the problems related to environmental degradation have spread beyond the corporate level, thus becoming a huge global problem.

To respond to the above-mentioned threats and risks, the UN General Assembly adopted the Agenda for Sustainable Development with great ambitions, not only in terms of its content and scope, but also in terms of the time frame for achieving the defined goals. These ambitious goals are aimed at solving the biggest global challenges and classified within the five areas of the greatest importance for humanity and the planet: people (ending hunger and poverty, reducing inequalities, ensuring quality education and equal opportunities for all), planet (preventing further environmental degradation, sustainably managing natural resources, mitigating climate change), prosperity (ensuring

Figure 1: Sustainable development goals



Source: UN

that technological and economic progress is in line with natural resources), peace (developing societies without violence and fear, guided by the principle that there is no sustainable development without peace and *vice versa*), and partnership (mobilizing necessary means to implement the goals set out in the Agenda and strengthening solidarity, particularly taking care of the needs of the poorest) [51, p. 2]. The overview of the SDGs is presented in Figure 1.

Even a superficial analysis clearly shows the complexity of achieving individual SDGs. Excessive consumption of natural resources, also known as the phenomenon of “ecological overshoot”, is calling into question the sustainability of the current levels of production and consumption. If the consumption of some natural raw materials continues according to the existing rates of exploitation, gold and silver reserves might be exhausted in 30 years, iron ore in 70 years, and black coal in 90 years. This means that the current generation has been already heavily borrowing resources from future generations. It is estimated that every year since 2012, the existing generation borrowed resources from future generations equivalent to 1.5 renewable resources from the future [50, p. 12-15].

Global demand outstrips the ecosystem’s capacity to regenerate resources, partly due to overconsumption and partly due to the selfish behavior of companies. For example, abusing the consumers’ ability to afford new products in the short time, some companies intentionally design their products’ lifetime to end immediately after the expiration of the warranty period. On the one hand, this behavior contributes to the unnecessary depletion of natural resources and, on the other, it leads to an increase in waste often ending up in landfills due to low recycling rates. Supply chain disruptions may be caused by social unrest in the countries which are suppliers of raw materials due to poverty, low wages, job cuts, poor working conditions, lack of health care, etc. [50]. It is evident that solving the problems of poverty, inequality and the dignity of work requires a tremendous effort. The situation is similar when it comes to other SDGs.

The urgency of addressing the greatest risks to which humanity is exposed fully justifies the intentions outlined in the Agenda. However, the operationalization of SDGs turns out to be an extremely complex endeavor.

The imperative of achieving the SDGs in an extremely short period of time actually brings into question the likelihood of their implementation within the stipulated deadline. Additional pressure arises due to the occurrence of unforeseen circumstances that halt the activities directed toward the achievement of goals by 2030. In the light of the fact that the established deadlines are binding, we are urged to present a brief overview of the environment in which the SDGs should be operationalized.

The COVID-19 pandemic has pushed activities toward achieving the SDGs to the back burner. The pandemic has had devastating consequences for people’s health and lives. It has led to the disruption of supply chains, increase in expenditures in the government budget as well as at the corporate level, and decline in GDP in both developed and developing countries. Although it is not easy to fully assess its consequences, there is no doubt that the negative effects are visible in many areas. A forced shift to online classes at the global level, has only deepened inequalities in the field of education. The use of the Internet for remote learning and distribution of teaching materials was only possible in the countries with developed broadband infrastructure that enables this type of learning. That is not the case with underdeveloped countries where it was practically impossible to provide an adequate level of education. So, it frequently happened that schools stopped working for a relatively long period of time. All this contributed to a sharp increase in global learning poverty to an estimated 70% [57]. The problem appears to be even more complex if we bear in mind that SDG 4 (Quality Education) is closely connected with the following goals: SDG 2, SDG 3, SDG 5, SDG 7, SDG 11, SDG 13, and SDG 15 [46].

Uneven development of particular countries, different quality of health systems (SDG 3), unequal access to necessary medicines and equipment further deteriorated the position of poor communities burdened by the lack of food and weak health systems. In such circumstances, inequalities became even more pronounced, while partnerships came under serious scrutiny because developed countries set the clear priorities when it comes to the latest antiviral drugs, the availability of vaccines and medical equipment, etc. Some authors point out that SDG 3 (Good Health and Well-being) is intertwined and complementary with SDG 1 (Poverty),

SDG 2 (Zero Hunger), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), SDG 14 (Life under Water), SDG 15 (Life on Land), and SDG 17 (Partnerships for Goals) [34, p. 395]. The adverse impact of the COVID-19 pandemic on the SDGs is additionally illustrated by the fact that in the first two years of the pandemic the world's 10 richest people more than doubled their wealth, from USD 700 billion to USD 1.5 trillion, while the incomes of the remaining 99% were dramatically shrinking. The finding that they have six times more wealth than the poorest 3.1 billion people becomes even more striking in the context of the fact that 21,000 people die every day in the world because of the lack of access to adequate health care, gender-based violence, and hunger and climate-related disturbances [22]. Moreover, according to the first most extreme estimates, a 20% income or consumption contraction may lead to an increase in the number of people living in poverty of 420-580 million [55]. There is no particular need to explain the damage suffered by certain industries such as transport, tourism, food industry, etc.

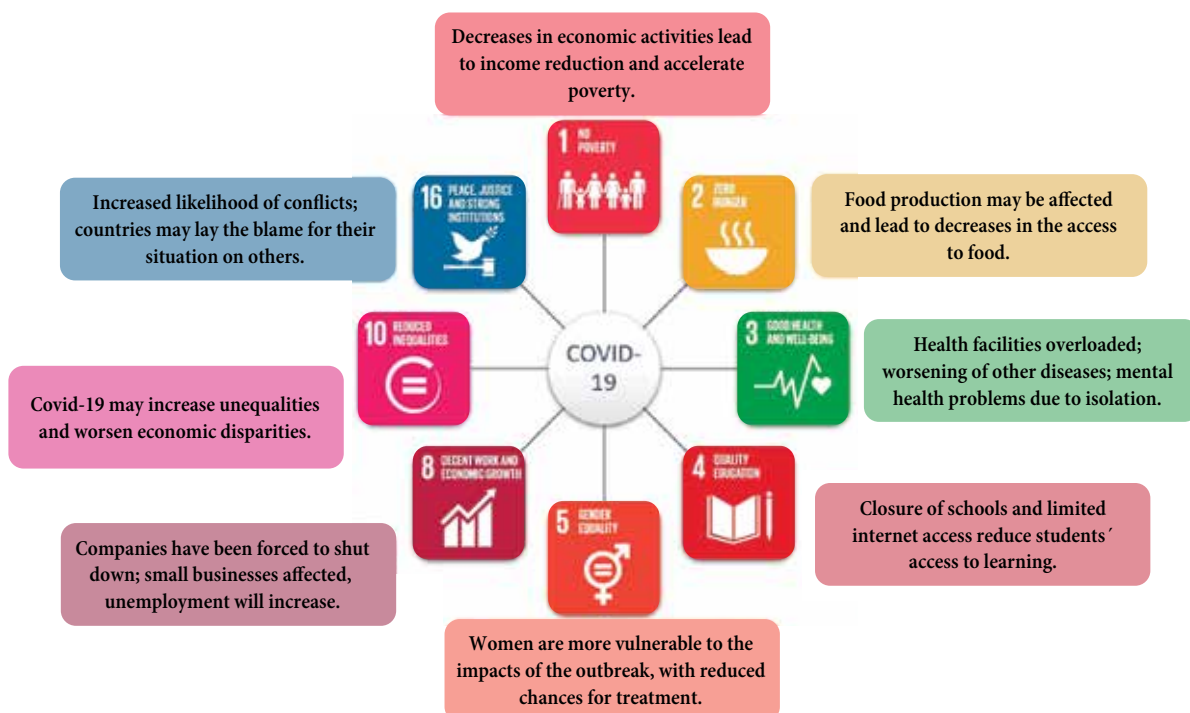
The indivisibility of the 2030 Agenda for Sustainable Development results in the interactions between the

various goals. That state triggers negative effects in crisis situations when some of the SDGs are directly affected. The multidimensional character of goals allows for spillover effects between them. Spillover effects have been confirmed in numerous research studies [45]. All this contributes to reduced commitment to the operationalization of the SDGs. Filho et al. [25] have identified the SDGs on which the COVID-19 pandemic has a more direct impact and where there is a need for urgent action. One of the possible systematizations of these impacts is shown in Figure 2.

The interactions also exist among other SDGs, but the urgency of their addressing is less pressing. The examples of these goals include SDG 7, SDG 14, and SDG 15 [25].

As a result of the obvious interdependence between the various SDGs, global society has been faced with a much wider spectrum of risks affecting many SDGs. However, despite the numerous negative implications for the operationalization of the SDGs, there are also some positive things. For instance, the collapse of many national health systems has triggered substantial investment in health care during the pandemic. More importantly, the pandemic has brought to light the vulnerability of health systems and pointed to the need to strengthen them and

Figure 2: Some of the main impacts of the COVID-19 pandemic on the SDGs



Source: [25, p. 6]

conceptually equip them by improving their quality, safety and resilience in case of the emergence of new pandemics or similar risks.

The current geopolitical context in which the implementation of SDGs is taking place, reveals that the world is still not up to the challenges that lie ahead. In the situation where the pandemic is not over yet, as we still have a lot to learn about its consequences and what awaits us in the post-COVID period, the world has been hit by new problems that are likely to set us back when it comes to the achievement of SDGs by 2030. Even though a 15-year period seemed too short for achieving the SDGs and solving the problems that had been accumulated over an incomparably longer period of time, now it is perfectly clear that, given the new circumstances, their achievement will not be possible within the foreseen period.

We could say that environmental degradation is the collateral damage of wars. The bombing of energy infrastructure, refineries and chemical plants in Ukraine has caused the pollution of soil, water and air with toxic substances harmful to the life and health of people and animals, military operations have led to an enormous increase in waste, which largely consists of a hazardous waste (construction waste, medical waste, etc.) that requires special safety measures during its transport and disposal, large forest areas have been destroyed by fires, while the destruction of water supply infrastructure has left 1.4 million of people without access to safe drinking water and additional 4.6 million with limited access [39]. Many of these consequences also affect other countries.

There are many other examples that demonstrate that the war has a huge impact on the SDGs. Disrupted supply chains directly threaten food security. Bottlenecks in supply, accompanied with accumulated stocks due to inevitable shortages, worsen the vulnerability of already vulnerable population groups, increasing hunger, poverty, inequality and putting in jeopardy responsible consumption and production. All that directly compromises the commitment to the operationalization of SDG 1, SDG 2, SDG 10, and SDG 12. Moreover, difficulties in supply and food shortages give rise to food price hikes, further hitting vulnerable groups. After the 2007-2008 food crisis and the crisis caused by the COVID-19 pandemic, the

food crisis provoked by the war in Ukraine is the third crisis in the last 15 years. The severity of the current situation caused by the war is best illustrated in the research pointing out that “over 30 countries depend on Russia and Ukraine for at least 30% of their wheat import needs, and at least 20 countries source over 50% of wheat imports from those two countries, ... while almost 40% of total African wheat imports come from Russia and Ukraine” [31]. At the same time, some countries such as Eritrea, Somalia and the Democratic Republic of Congo cover more than 80% of their needs by imports from the Black Sea region.

In addition to the aforementioned challenges, it is also important to mention the massive damage to energy, transport, water supply and other industrial infrastructure, a large number of destroyed cities, the impossibility of providing quality education, difficulties in delivering adequate health care, hampered production, the contamination of water, air and soil, high probability of the extinction of certain species, etc. If we add to this list the risks of nuclear disasters as well as the impact of possible radiation on the pollution of arable land, then it becomes obvious that not only the environment and human lives and health, but also the ecosystem as a whole, are exposed to serious risks. The situation seems even more complicated if we bear in mind that the consequences of the war will be long-lasting and far-reaching. In the war zones, air contamination may lead to a higher number of deaths compared to the victims who were killed in wildfires. Therefore, it is easy to understand that the environmental devastation caused by the war is of major proportions, which also compromises the achievement of other sustainable development goals: SDG 3, SDG 4, SDG 6, SDG 7, SDG 8, SDG 9, SDG 11, SDG 13, SDG 14, SDG 15, and SDG 16. So, burdened by a long-lasting toxic legacy of the war, the operationalization of the SDGs will stagnate, and it is quite certain that the progress in some areas made in the past will be erased [54].

The current energy crisis is a result of geopolitical developments, but considering its wide scope, it requires special attention. This is particularly true in view of the global character of this crisis. The high risks related to energy supply have brought a surge in energy prices and

uncertainty. From the perspective of the imperative for affordable and clean energy (SDG 7), it is evident that the current circumstances are moving us away from this goal. Instead of reducing the consumption of oil and coal, the situation is actually reversed. In 2022, due to well-known constraints in gas supply, the production and consumption of coal hit a record high, which was followed by an increase in carbon dioxide emissions. The combustion of fossil fuels leads to the release of carbon dioxide, which increases the greenhouse effect and global warming. In this context, the originally projected goal of reducing carbon dioxide emissions to zero by 2050 is aimed at limiting the global temperature increase to less than 1.5 degrees Celsius [28]. The projected growth in energy demand requires substantial investment, not only to meet needs, but also to change the structure of sources toward more significant growth of renewables.

The global energy crisis has unveiled all vulnerabilities of the energy system as well as the need for urgent investment in renewable energy sources with the aim of increasing their share in total sources. The change in the structure of sources encompasses multiple goals. First, to

lessen dependence on the consumption of oil, coal and gas; second, to mitigate damage experienced by households, companies and national economies in crisis situations; and third, to foster the much-needed reduction in carbon dioxide emissions and environmental protection. For example, since September 2022, gas deliveries to the EU have been down by 80% compared to the previous years [28, p. 23]. The difference has been mainly covered from storage reserves, with a significant drop in demand.

### Investing in the sustainable development goals

The expected investment in the SDGs is huge. It is a result of the efforts to solve the problems, which have persisted for too long, in a 15-year period. This undertaking is especially challenging for developing countries because of the large gaps between their needs and available opportunities. In these countries, the need for investment in the energy sector is growing much faster than in developed countries. At the same time, due to undeveloped capital markets and lack of access to differentiated sources of finance, the public sources have a more important role in the SDGs financing than the private ones.

**Table 1: Summary of SDG investment trends and estimated annual gaps (2015-2019)**

Investment requirements	Most relevant SDGs	UNCTAD estimated annual investment gaps (billions of USD)
POWER (EXCL. RENEWABLES) Investment in generation, transmissions and distribution of electricity	SDG 7	370-690
TRANSPORT INFRASTRUCTURE Investment in roads, airports, ports and rail	SDG 9 SDG 11	50-470
TELECOMMUNICATIONS Investment in infrastructure (fixed lines, mobile and internet)	SDG 9	70-240
WATER, SANITATION AND HYGIENE (WASH) Provision of water and sanitation to industry and households	SDG 6	260
FOOD AND AGRICULTURE Investment in agriculture, research, rural development, etc.	SDG 2	260
CLIMATE CHANGE MITIGATION Investment in relevant infrastructure, renewable energy generation, research and deployment of climate-friendly technologies, etc.	SDG 13	380-680
CLIMATE CHANGE ADAPTION Investment to cope with impact of climate change in agriculture, infrastructure, water management, coastal zones, etc.	SDG 13	60-100
ECOSYSTEMS AND BIODIVERSITY Investment in conservation and safeguard ecosystem, marine resource management, sustainable forestry, etc.	SDG 14 SDG 15	No data
HEALTH Investment in infrastructure, e.g. new hospitals, and R&D on vaccines and medicines	SDG 3	140
EDUCATION Infrastructural. e.g. new schools	SDG 4	250

Source: [52]

To close the gap, it is necessary to create conditions for attracting private capital, which is not easy in these countries. The same goes for international private investments, which are not at the expected level in developing countries. One of the reasons is the unfavorable environment in which the SDGs are implemented (COVID-19, war, energy crisis). However, developing countries are also partly responsible because they have not been agile enough in removing regulatory hurdles, which is a prerequisite for attracting such investments more quickly. However, an increase in investment in SDG sectors is evident in 6 out of 9 SDG sectors. The summary of investment trends in ten SDG sectors in the period 2015-2019 is presented in Table 1.

The COVID-19 crisis triggered additional problems, further deepening the gap between necessary and available investments. Some trends in greenfield investment and project finance in SDG sectors indicate worrying results. Investment activity fell sharply in almost all SDG sectors. For example, investment in infrastructure projects dropped by 62% compared to 2019, in provision of water and sanitation by 70%, in food and agriculture by 57%, in health care by 37% and in education by 42%. Only investment in renewable energy recorded growth, but it was by two thirds lower than in 2019. Finally, the decline in investment in the SDGs was much steeper in developing than in developed countries [53, p. 2].

The *Net Zero Emissions by 2050 (NZE)* scenario reflects the urgency and ambition in solving both national and global problems that impede the progress toward the change in the structure of energy sources. This scenario envisages investment in technologies that could provide cleaner energy and successively become substitutes for fossil fuels. It is expected that annual spending on fossil fuels will fall from the current amount of USD 830 billion to USD 455 billion by 2030. This means that the share of fossil fuels in total investment in the energy sector is projected to fall from the current level of 35% to 10% in 2030 [28, p. 164]. Investment in clean energy, i.e. in low-emission fuels (biofuels, hydrogen-based fuels), is likely to move in the opposite direction, increasing from the current level of USD 18 billion to USD 235 billion in 2030. These investments should contribute to the largest increase in the power generation from renewable energy

sources, more precisely, from recently recorded USD 390 billion to USD 1300 billion by 2030. An integral part of these plans includes investment in energy efficiency and electrification whose share is expected to increase from today's 17% to 32% in 2030 or 40% in 2050. The achievement of the previous targets requires a rise in clean energy investment from about 2% of global GDP in 2021 to almost 4% by 2030 [28, pp. 163-164].

### Financing the SDGs: The structure of sources of finance

Investing in the SDGs is only one of many steps on the path toward their achievement. The flip side of that issue is the provision of adequate sources of finance. Financing investments in the SDGs has become even more challenging due to the consequences of the COVID-19 pandemic, as their solving has taken priority over all other global problems, as well as the war in Europe which has also raised concerns all over the world. Both events have only further deepened the gap between needed and currently available sources of finance.

The lack of sources of finance calls into question the achievement of the goals contained in the 2030 Agenda for Sustainable Development. The aforementioned gap cannot be easily closed even in developed countries, but it is especially difficult to finance the implementation of SDGs in developing and underdeveloped countries. Although each national economy must assume its own responsibility and contribute to achieving the SDGs at the global level, there is no doubt that partnership and solidarity, particularly between developed and developing countries, have a pivotal role in this process. The construction of infrastructure facilities and the transfer of environmentally friendly technologies to developing countries require providing sources of finance and channeling them into priority projects, normally, under conditions that are acceptable to such countries.

A key role in the operationalization of SDGs and the transition to a green economy will be played by companies, which are also most responsible for the planetary problems, as well as by financial institutions that should support environmentally friendly projects by providing sources of finance. At the same time, sources of finance must



close two gaps: the first one is related to the financing of necessary investments to achieve the goals by 2030, while the second concerns the aim of reaching climate neutrality in 2050. In this regard, in March 2018, the European Commission adopted the Action Plan: Financing Sustainable Growth, which is dominantly based on three objectives: reorienting capital toward sustainable investment, managing financial risks including the risks stemming from climate change and environmental degradation, and fostering transparency and long-term interests of companies and financial institutions [14].

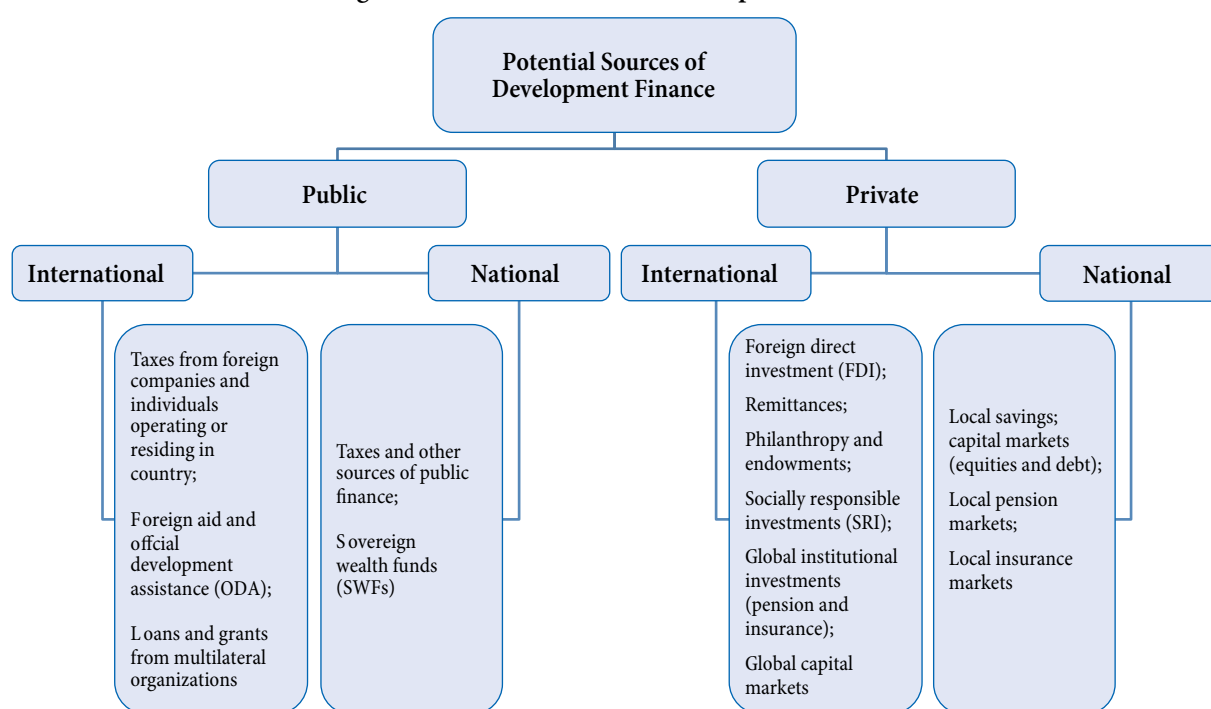
Besides the planned investments in the SDGs, the green transition also requires a parallel effort on reshaping the financial system in terms of its adaptation to the needs of inclusive and environmentally sustainable development. This implies the previously mentioned reorientation of capital flows toward the so-called “green projects”, i.e. toward the financing of renewable energy sources, cleaner production, circular economy, sustainable agriculture, food security, and other socially and environmentally acceptable projects. On the other hand, the list of priorities should exclude projects that lead to further excessive consumption of natural resources that belong to future generations. A broad consensus on the SDGs reached within the 2030

Agenda calls for finding adequate sources of finance. Moreover, substantial investment in the SDGs implies the activation of various sources of finance whose structure will differ in developed and developing countries. Potential sources of finance are shown in Figure 3.

We can agree that every traditional source of finance could have its green alternative. So, we could talk about “green” fixed-income debt instruments (various forms of “green” corporate and government bonds), “green” loans, as well as “green” equity instruments with variable or fixed yield (“green” common and preferred shares). According to the UNCTAD estimates from 2020, green investments were financed by USD 260 billion in green bonds, sustainability-themed equity funds participated with about USD 900 billion, social bonds with USD 50 billion, while COVID-19-response bonds amounted to USD 55 billion [59, p. 170].

However, taking into account the magnitude of missing funds for financing investments in the SDGs, there is also a need for innovative ways of financing, such as carbon tax which discourages investments with negative environmental effects and channels such sources of finance into socially responsible “green” projects, and green quantitative easing (QE), which entails the

**Figure 3: Potential sources of development finance**



Source: [42, p. 4]

government's deficit financing of the projects with a strong decarbonization effect [13, pp. 38-39].

It is perfectly clear that the implementation of the SDGs is taking place in a very unfavorable environment. However, regardless of that, the SDGs impose the need to measure progress in their achievement, which opens up a very serious issue – the necessity for a comprehensive approach to reporting. The burden of the implementation of these global goals, to some extent, should also be borne by companies which are mainly responsible for the planetary problems associated with climate change, environmental degradation, and excessive consumption of natural resources that belong to future generations. When it comes to performance measurement at the corporate level, there is a need for reporting on environmental, social and economic dimensions of the company's overall performance. At the same time, financial institutions have a great responsibility in the process of green transition as they are expected to channel sources of finance toward green projects. A key role in these processes is played by transparent multidimensional performance measurement and reporting adapted to the needs of various stakeholders.

In the context of the green transition, a multidimensional integrated approach to reporting at the corporate level implies an upgrade to the existing official financial reporting. It concerns the information that can transparently enough legitimize companies as socially responsible entities. This is important from the perspective of companies, which could achieve positive effects based on socially responsible behavior. Also, transparent reporting on financial and environmental performance should help financial institutions to identify companies that behave in accordance with the generally widely accepted SDGs in order to be able to channel capital in that direction. The development of a conceptual framework that will improve the performance measurement system at the corporate level and enable monitoring of the progress in achieving the SDGs is a big challenge.

## Sustainability reporting

Sustainability reporting has recently become one of the top priorities in the agenda of policymakers, companies and

stakeholders, although it is not a new phenomenon. In the last few decades, a lot of initiatives toward sustainability arose and were accompanied by calls for reporting on the companies' impact on society and environment. A growing number of companies started to supplement their financial reporting with sustainability issues. However, different approaches to sustainability reporting as well as voluntary nature of disclosures have led to the complexity in interpreting and comparing available information through periods and among companies. It could be argued that the practices of cherry picking or even greenwashing were also widespread, so reducing transparency instead of increasing it. The deficiencies in sustainable reporting were evident and point out the need for standardization and quality improvements.

In the landscape which comprises many standard-setters and competing or complementing reporting frameworks, the challenge of harmonization or creation of unique globally accepted sustainability standards is tremendous. One comprehensive list of different frameworks and actors is given in the Guidelines issued by the EU (2017/C 215/01) to help reporting entities to disclose their sustainability impact according to EU Non-Financial Reporting Directive (2014/95/EU; hereinafter NFRD) [17]. This list is presented in Table 2.

The majority of standard-setters has entered the sustainability field with the ultimate goal to induce changes in the companies' behavior toward sustainability, but there are also some standard-setters which are primarily interested in the impact of sustainability issues on investors. However, in both cases, sustainability reporting has been the main mechanism for delivering desired informational content to stakeholders. Therefore, standard-setters have made a lot of efforts to develop an appropriate reporting framework capable of providing effective communication.

Since sustainable reporting was initially a completely voluntary initiative, companies had a choice whether to report or not as well as to choose what reporting framework to use. However, the actual question that companies face in the current environment is not whether sustainable reporting should be practiced, but rather how to do it. According to KPMG worldwide surveys on sustainability, including data of the top 100 companies by revenues in a

number of jurisdictions (N100), the sustainable reporting rate increased from 12% in 1993 to 75% in 2017 [32]. The last survey in 2020 covering N100 companies from 52 countries reveals a further increase in the reporting rate by two percentage points, from 75 to 77%. Moreover, in the sample of world's 250 largest companies, the reporting rate reached 96% [33].

Even as a non-binding initiative, sustainability reporting has become widespread practice among large and medium businesses around the world. Such a tendency may be explained by the companies' need for legitimacy in the social context marked by high concerns for sustainability issues. In accordance with the legitimacy theory, company must justify its license to operate by acting within societal norms, values and beliefs [49]. Otherwise, unfulfilled social expectations will occur and jeopardize the operations of the entity. However, the legitimacy is primarily connected with the public perceptions about how some company operates, rather than with the company's real performance. In terms of sustainability reporting, it raises serious issues of using voluntary disclosures not to reflect faithfully the company sustainability profile but to

create a desired image which could be misleading. Boiral [6] found that 90% of significant negative events related to sustainability were not presented in sustainability reports of involved companies. Many scholars have also identified that symbolic instead of substantial approach to legitimacy was employed by companies in the sustainability field, but it could be camouflaged in their sustainability reports [12], [37], [47]. Besides seeking legitimacy, companies' motives for voluntary sustainability disclosures could be found in their willingness to signal their advance environmental and social performance (signaling theory), demonstrate accountability to broad range of stakeholders interested in sustainability (stakeholder theory) as well as to respond to the institutional pressure to adopt new reporting practice since it has become socially expected (institutional theory) [48]. Finally, economics-based theories imply that these disclosures could reduce information asymmetry and the cost of capital [11].

Although the sustainability reporting is gaining growing acceptance, the fact that it is in the vast majority of cases 'company-based, voluntary, partial and, mostly, fairly trivial' [24] gives impetus to the regulation in

**Table 2: List of references in sustainability reporting**

Standard setter	Reporting framework/standards
CDP	CDP framework
Climate Disclosure Standards Board	CDSB Framework for Reporting Environmental and Climate Change Information
OECD	OECD Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and High-Risk areas
European Commission	Eco-Management and Audit Scheme (EMAS)
European Federation of Financial Analysts Societies	EFFAS' KPIs for Environmental, Social, Governance (ESG): A Guideline for the Integration of ESG into Financial Analysis and Corporate Valuation
Global Reporting Initiative	GRI Standards
OECD	OECD-FAO Guidance for Responsible Agricultural Supply Chains
UK Financial Reporting Council	Guidance on the Strategic Report
OECD	OECD Guidelines for Multinational Enterprises
United Nations	UN Guiding Principles Reporting Framework on Business and Human Rights
International Organisation for Standardisation	ISO 26000
International Integrated Reporting Council	International Integrated Reporting Framework
Sustainable Stock Exchanges Initiative	Model Guidance on Reporting ESG Information to Investors
Capitals Coalition	Natural Capital Protocol
European Commission	Product and Organisation Environmental Footprint Guides
Sustainability Accounting Standards Board	SASB Standards
German Council for Sustainable Development	Sustainability Code
International Labour Organisation	Tripartite Declaration of principles concerning multinational enterprises and social policy
United Nations	UN Global Compact
United Nations	Sustainable Development Goals
United Nations	Guiding Principles on Business and Human Rights implementing the UN 'Protect, Respect and Remedy' Framework

Source: Guidelines on non-financial reporting [15]

the field. From an optional, sustainability reporting has evolved into a mandatory element of companies' reporting in many jurisdictions, particularly in Europe with the adoption of NFD. The mandatory regime has capacity to force companies to make disclosures and can contribute to the quality and comparability of disclosures. However, different regulatory requirements among countries might be a serious obstacle to the harmonization which is needed at the global level. On the other side, private standard-setters that by their nature lack formal authority have a long way to go to build legitimacy and be accepted. It was evident that some of standard-setters tried to improve their chances to be globally accepted by merging with other similarly oriented organizations. One initiative in this direction was the establishment of the Value Reporting Foundation (VRF) as a result of the merger of the International Integrated Reporting Council and the Sustainability Accounting Standard Board. Furthermore, VRF consolidated in just few months into the IFRS Foundation. Nevertheless, empirical evidence suggests that in the sustainability reporting arena the most prominent position belongs to GRI and its GRI standards. According to KPMG surveys, GRI framework is used by around two-thirds of N100 reporting companies and by around three-quarters of G250 reporters [32], [33]. However, two new powerful actors, namely the EU and the IFRS Foundation, have recently entered this reporting field which could significantly change the reporting scene in the next period. Since GRI, EU and IFRS Foundation have potential to exhibit the greatest influence on the sustainability reporting practices, it is worth considering the similarities as well as differences in their approaches.

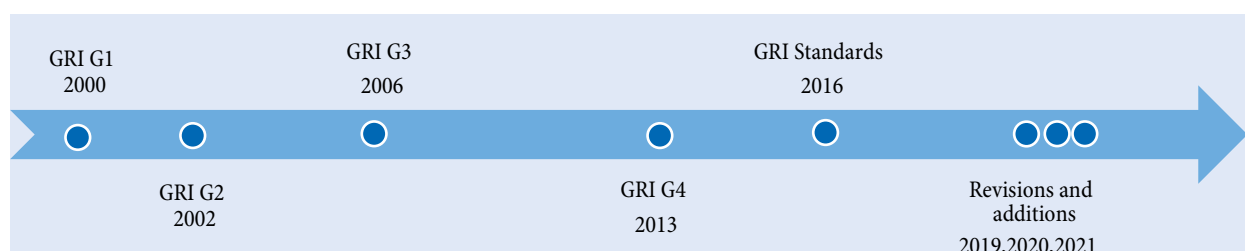
High environmental concerns were a trigger for establishing GRI in 1997 with the intention to develop the reporting framework for companies to disclose their

impact on environment what will then stimulate changes in their behavior toward a responsible approach. However, the scope of reporting was later expanded to include social, economic and governance issues [20]. GRI as an independent international organization has worked intensively to earn legitimacy in the sustainability standard-setting arena. It started with the issuance of guidelines in 2000 and regularly updated them through new versions, so four versions from GRI G1 to GRI G4 were developed. In 2016, GRI made transition from guidelines to standards and launched the GRI Standards as an improved sustainability reporting framework comprising of three universal standards and 33 topic-specific standards classified in economic, environmental and social series. In following few years, GRI continued to work on its standards in order to ensure their relevance and quality, leading to the revisions of existing standards and the issuance of new topics as well as sector-specific standards (see Figure 4).

The wide acceptance of GRI framework could be mainly attributed to its holistic approach based on multi-stakeholder orientation which at the same time incorporates a sufficient degree of reporting flexibility. GRI standards are principle-based, which is of paramount importance to ensuring the consistency of reporting framework. Relying on principles has already proved to be crucial for effective financial reporting [18], while the lack of principles or using inappropriate principles commonly led to rule-based standards which were excessive, complex, and with a lot of exceptions and justifications [38], [44], [8]. Using the analogy with financial reporting, it seems that by starting with clearly defined concepts and reporting principles GRI chose the right way for developing its standards.

In the first version of GRI Standards adopted in 2016, reporting principles were the fundamentals which shaped sustainable reporting. They were divided in two

Figure 4: Timeline: Development of GRI reporting framework



groups according to their primary focus. The first group addressed reporting content, i.e. dealt with the relevance of presented information, while the second group was related to the generally principles of quality reporting. The relevance of disclosures was ensured by taking into account the expectations and interests of stakeholders (the stakeholder inclusiveness principle) as well as a broad sustainability context including economic, environmental and social issues at all levels from local to global. The relevance also incorporated the materiality principle, which implied selection of the topics to be covered in report as well as the requirement for all material information to be disclosed (the completeness principle). However, implementing the materiality principle is more complex in sustainability than in financial reporting, since the views of other stakeholders besides investors and lenders should be considered as well as non-financial impacts besides financial ones. In this sense, GRI defined material topics as those which reflect significant *impacts* of a reporting entity on the economy, the environment and society or those which significantly affect the decisions of *stakeholders* [22]. Such definition covered inside-out and outside-in approach in the process of materiality assessment. GRI also created the materiality matrix with these two dimensions in order to help companies to make judgments on the materiality of sustainability issues. In addition to the content, quality reporting is promoted by the principles of accuracy, balance, clarity, comparability, reliability and timeliness.

Although the GRI's contribution to the development, improvement and promotion of sustainable reporting, including establishing 'common language' in this field is evident [10], some shortcomings in the implementation of its reporting framework appeared to be critical. Heras-Saizarbitoria et al. [26] found that the abovementioned GRI reporting principles were not seriously applied by companies which declared to report according to the GRI standards. Especially vulnerable principles were completeness, materiality and accuracy. Adams et al. [1] identified six questionable themes related to GRI. One of them deals with the applicability and relevance of GRI standards, since reporting organizations differ significantly among themselves and it is not easy to create standards that fit

them all. The second theme covers the nature of adoption of GRI standards by reporting companies. Companies tend to include selective disclosures in their reports, producing unfaithful reports in this way. Additionally, the materiality assessment in GRI reporting raises concerns. Other themes include low understanding of the GRI standards due to their vagueness, voluntary nature of GRI reporting and lack of quality external assurance. Some more critically oriented researchers concluded that reporting 'anything much beyond the trivial' in the field of sustainability is 'still proving elusive' [24].

The further work of GRI and the latest version of GRI Standards adopted in 2021 addressed part of these critiques. The new conceptual framework is developed and shows many similarities with the approach used by the International Financial Reporting Standards (IFRS) conceptual framework, which could be seen as a sign of mimetic isomorphism. In order to enhance its own legitimacy, GRI implemented the solution that has already proved to be effective. GRI 100 Foundation includes now in a clear manner all important elements of conceptual framework as a sound basis for the implementation of a complete set of standards: purpose and users of GRI reporting, key concepts, reporting requirements, reporting principles, and additional recommendations. In addition, relevance of the standards has been increased by launching sector-specific standards, starting from 2021. However, one important shift was related to the materiality principle. GRI has always emphasized that the first and foremost idea behind sustainability reporting is to contribute to a sustainable future by providing the accountability framework for organizations to disclose transparently their impacts on society and the planet. Nevertheless, the previous GRI approach to assessing materiality was based not only on the organization's impact on sustainable development, but also on the influence of sustainable topics on decision-making of stakeholders as a stand-alone factor. Research findings suggest that this approach frequently led companies to prioritize investors' perspective and financial materiality [2], which eventually means that sustainability reporting failed to achieve its main goal. GRI also noticed that companies often assessed only the impact on themselves instead of their impact on society and environment [21].

Consequently, GRI revised its materiality principle and linked it only with inside-out impact.

It is worth mentioning that credibility of reports could hardly be achieved without quality external assurance. However, the assurance rate is still low. In their study of sustainability reports, Badia et al. show that less than one-third of public utility companies in Italy which reported on sustainability also provided external assurance [4], while KPMG in 2020 survey found that 49% of N100 reporting companies obtained external assurance. More striking, even in the cases where assurance service is performed, the quality of assurance appears to be unsatisfactory. The research presented by [7] reveals that assurance providers predominantly used optimistic, cautious and uncritical rhetoric in their statements, which could imply the lack of independence on their side. Furthermore, the competence of the service is also seen as questionable since the important GRI reporting principles, such as the sustainability context and the balance of information, are overlooked as criteria for assessing the quality of sustainability reports. GRI includes in its 2021 framework recommendation for obtaining external assurance as well as the requirements that assurance providers should satisfy.

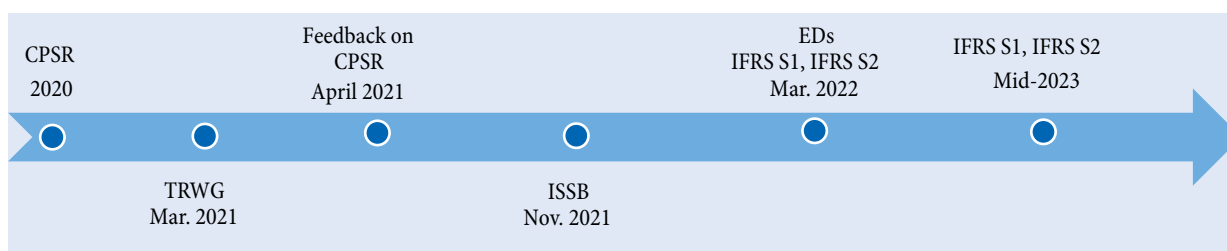
A lot of issues that GRI has been faced with and still very large number of other actors in the field of sustainable reporting have provoked calls for engaging the IFRS Foundation in this field of reporting. The IFRS Foundation is also private standard-setting organization just like GRI, but the IFRS Foundation has already established a strong legitimacy around the world and succeeded to develop globally accepted financial reporting standards, which are now required in more than 140 countries and permitted in many more [30]. The capacity of IFRS Foundation looks promising in achieving the goal of developing quality and globally accepted international

reporting standards also in the domain of sustainability. Such standards would finally eliminate complexity and confusion related to published reports and improve the comparability of the reporting entities' sustainability performance. Sustainability reporting could be seen as compatible with financial reporting, and it could be also beneficial to have one authoritative standard-setter for both reporting standards.

The IFRS Foundation formally entered the sustainability field in 2020 with its Consultation Paper on Sustainability Reporting (CPSR) and since then actively works on the development of standards (see Figure 5). The first step was the creation of the Technical Readiness Working Group (TRWG) with some other organizations which gave support to the IFRS Foundation in developing sustainability standards. The Foundation had to change its governance structure to establish a separate board for sustainability reporting standards. As a result of the change, the current structure of IFRS Foundation includes IASB, which sets accounting standards and a new International Sustainability Standard Board (ISSB) established in 2021, whose mandate is to develop Sustainability Disclosure Standards. In 2022, Exposure Drafts of the first two standards were published (ED IFRS S1, ED IFRS S2) and opened to comments, while the issuance of standards is expected in mid-2023. While IFRS S1 aims to set some baselines for disclosure of sustainability-related financial information, IFRS S2 addresses concrete topic of climate-related disclosure. The standard's structure is created to be consistent for all topic-related standards, with core content, covering governance, strategy, risk management and metrics and targets.

On its way through the sustainability area, the IFRS Foundation merged with VRF and the Climate Disclosure Standard Board (CDSB) as already recognized sustainability

**Figure 5: Timeline: Development of IFRS Foundation reporting framework (not-scaled)**



standard-setters with the focus on investors, which suggested that the main perspective of IFRS Foundation could differ from the one of GRI. The fact is that IFRS Foundation is an institution oriented toward investors, lenders and other creditors as its target groups. Since the sustainability issues could be very relevant for these groups, IFRS Foundation recognized its role to satisfy their information needs. Investors and other market participants are interested in the company's sustainability-related risks and opportunities and their impact on the company's financial position, financial performance and cash-flows. ISSB is then working on disclosure standards that will help investors to make informed decisions. The consistency between these standards and standards of financial reporting is obvious in terms of main concepts (e.g. who are primary users, what are qualitative characteristics of information) and sustainability report is seen as complementary to financial statements completing the set of financial information needed for economic decision-making of investors, lenders and other creditors.

It is clear that ISSB and GRI do not have the same target audience, since GRI emphasizes accountability not only to investors, but also to all stakeholders, including those who do not have direct relationship with reporting entity or are not able to articulate their interests such as future generations, which then necessarily causes differences in the objective and content of sustainability disclosures. While GRI promotes disclosures about organizations' impact on the economy, environment and society, ISSB is focused on disclosures about the impact of sustainability issues on organizations. Besides the target audience and objective as well as the content of disclosures, further differences between ISSB and GRI are seen in their scope, approach to materiality, and reporting boundaries [19]. In terms of scope, the list of topics that GRI standards cover is comprehensive since the sustainability context is defined very broadly and the development of standards has started long ago. However, ISSB has recently entered the sustainability field, and the first disclosures on its agenda are climate-related disclosures. Nevertheless, it is expected that its scope will be broadened by including other sustainability matters, particularly environmental, social and governance (ESG) issues [29]. Concerning the

materiality principle, ISSB keeps information material if its omitting, misstating or obscuring would influence the investors' and lenders' economic decisions, while for GRI information is material if it reflects significant inside-out impacts. That said, from the GRI point of view financial materiality is not decisive. However, it could be argued that in many cases significant impacts will become soon or later financially material information, so the difference between approaches is not as large as it appears at first glance. Due to reporting boundaries, GRI again takes a broad approach encompassing the whole value chain, while financial reporting boundaries are determined in a narrower way. Although in CPSR value chain was not mentioned, there is a tendency that ISSB should also include considerations through values chain, as it has already done in ED of IFRS S2 related to Climate-related disclosures.

The dynamics of sustainability reporting have been increased to a large extent in recent period due to the entrance of the EU in this field. GRI and ISSB as private initiatives strive to take the leading position in developing international standards for sustainability reporting. They are relying on their legitimacy acquired from the market in the case of GRI and due to rigorous governance structure and enforcement in accounting field in the case of ISSB. However, the EU has a legislative power to make sustainability reporting mandatory what makes its work in this area very influential. Some European countries (e.g. Denmark, Norway, The Netherlands) introduced even during the 1990s the obligation for companies to report on their environmental performance [27], but the first joint initiative toward sustainability was EU Green Paper, published in 2001, that established a clear commitment of the EU to the sustainability agenda. The next major step was the adoption of NFRD in 2014, which imposes reporting requirements on nonfinancial and diversity topics for certain large companies in the EU. The main goal was to make reporting mandatory and to increase its quality, so inducing through high transparency changes in companies' behavior toward a sustainable economy.

However, NFRD leaves Member States considerable leeway in implementing and extending its requirements, considering many important aspects, such as the reporting framework – it refers to national, Union-based

and international frameworks, matters to be reported – at minimum the environment, social and employee matters, respect for human rights, and anti-corruption and bribery matters, type of report (separate or included in management report) as well as mandatory assurance of report or not. Non-binding reporting guidelines were issued to supplement NFRD with further information and clarifications, but the need for a new Directive was obvious. The timeline of some important events in developing EU regulation toward sustainability is given in Figure 6.

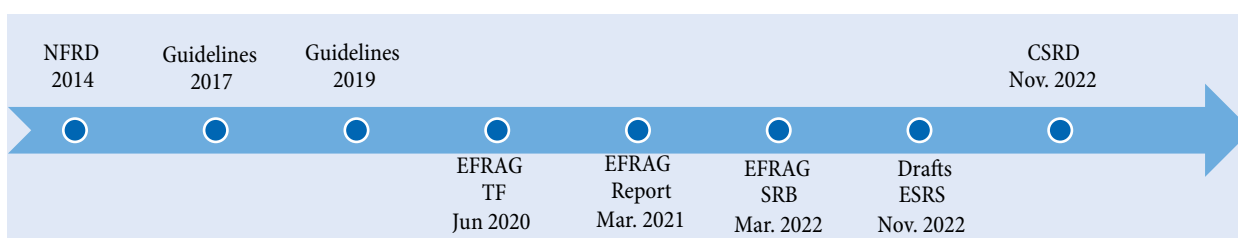
The effects of NFRD were not satisfactory mainly because of a selective approach to disclosure by reporting entities, still low comparability between reports of different preparers and insufficient reliability of presented data. The new Directive, Corporate Sustainability Reporting Directive (CSRD) was developed to address these shortcomings [16]. At the same time, the EC has given mandate to the European Financial Reporting Advisory Group (EFRAG) to produce the sustainability standards, which are seen as a necessary mechanism in achieving comparability among reports across the EU. EFRAG Task Force has started to work on this plan in November 2021, and published the report in March 2022 which provided 54 recommendations for developing sustainability reporting standards. The next step was publishing of EDs of the first set of standards. After public discussion, the drafts are corrected and released to the EC. EFRAG has also changed its governance structure, similar as the IASB Foundation, to incorporate a new board, the Sustainability Reporting Board (SRB).

Besides standardization, the main features of a new Directive are: broader scope of companies that have to publish sustainability disclosures, reporting content that is organized according to ESG classification, double materiality which relates to inside-out and outside-in impact, where some information could be material in

both aspects, but it is sufficient to be material in one to be required for disclosing. This approach is consistent with the EU position that primary users of sustainability-related information are investors as well as civil society actors, while other stakeholders could also benefit from this kind of disclosure. It is also recognized that the location of sustainability disclosures is not irrelevant, and the connectivity of financial and sustainability information is better achieved if they are combined in the same report. Therefore, sustainable-related information will be part of management report. In order to improve the reliability of disclosures, assurance is required, although for the first period limited assurance is acceptable. Reasonable assurance is more demanding, but certainly provides a higher level of information credibility.

So far, standard-setters including GRI, ISSB and the EU have not yet agreed on a generally accepted approach to sustainability reporting, pointing to the fact that this is a complex undertaking. However, GRI and the EU are closer in their orientations to broad audience, so taking a multi-stakeholder perspective in determining sustainability disclosures. They are also striving to cover a broad spectrum of sustainability issues. It is not surprising then that EFRAG chose GRI as a sub-constructor for the process of developing of ESS. Nevertheless, differences are also present, and remarkable, so it is evident that the EU promotes the concept of double materiality, while ISSB and GRI assess materiality only from one angle. Instead of further work on harmonization, it seems that these leading institutions have decided to refrain their positions, but to emphasize mutual compatibility as the panacea. The recent agreement between GRI and ISSB is a proof of this tendency, where both actors declare that it is beneficial to exist two pillars in sustainability reporting – investor-focused standards and multi-stakeholder standards, which are not mutually exclusive but rather compatible. However, in order to reduce

Figure 6: Timeline: Development of EU regulation (not-scaled)





reporting burden for companies, these organizations will work on the alignment of their requirements and other issues (e.g. terminology) whenever it is appropriate. The coming framework of the EU will challenge the position of these international actors, certainly in Europe, but since many reporting entities have international business, it is questionable whether they will have to provide additional disclosures voluntary to achieve global comparability in sustainable reporting with other non-EU companies.

Since the SDGs play a prominent role in tracing the way to a sustainable future and their achievement depends on responsible behavior of businesses, it seems effective to include references to the SDGs in reporting frameworks on sustainability. In this way, it would be possible to more transparently assess companies' strategies and activities towards each of these goals. Therefore, it should be very useful if standard-setters recognize the SDGs as an authoritative source and make them an integral part of reports according to their standards. In CSRD, the EU confirms its commitment to the SDGs and states that the development of ESRS should take into account the SDGs, among other sources. However, it is still not known in which way this will be done. On the other side, GRI has worked together with Un Global Compact and the World Business Council for Sustainable Future on the SDGs Compass, as a practical tool for the operationalization of working and reporting on the SDGs. It looks as a promising approach in providing sustainability reports with the explicit links with the SDGs. However, the challenges in translating the SDGs into applicable indicators should not be overlooked.

### Integrating the SDGs into the corporate reporting system

A broad consensus reached during the adoption of the SDGs also made it clear that one-dimensional approach to a company's performance is no longer sufficient to gauge its success. Of course, this does not mean that value creation is an outdated goal, but rather that it cannot remain the only criterion for evaluating performance. The embrace of the SDGs has broadened the notion of corporate performance and encouraged companies to align their

long-term goals with the SDGs. The redefinition of success is oriented toward putting long-term sustainable value in the foreground, which means that along with financial performance, social and environmental performance should also be analyzed. In such circumstances, companies are expected to define their goals in compliance with the SDGs and to incorporate them into their strategies. Bearing this in mind, investors and other stakeholders call for the creation of an extended reporting system that, in addition to financial performance, will disclose social and environmental risks and opportunities, with the same level of accountability that is provided by traditional financial reporting.

Testing the possibility of incorporating the SDGs into an extended reporting system at the corporate level requires a double check. First, it is necessary to test the compatibility of SDGs with ESG approach to reporting. If ESG approach enables the integration of the SDGs into corporate reporting, then we can assume that the usefulness of ESG reporting will be considerably improved. Second, after assessing that ESG approach is the best choice, it is necessary to conceptually set up and regulate a three-dimensional metric. Selecting metrics that will allow investors to assess risks and opportunities is an integral part of this process. It is a good way to redirect capital flows toward companies that focus on long-term sustainability which is compatible with environmental standards and the requirements of the community in which companies operate. The investors' approval of metrics actually obliges companies to apply indicators in order to become recognized as attractive to investors. The use of such metrics should help management to mitigate risks of negative social and environmental impacts on financial performance. Finally, high-quality metrics are crucial for tracking progress in achieving the SDGs, which is important for society as a whole.

To successfully incorporate the SDGs in the reporting system, the first step implies identifying the SDGs that relate to business processes and reporting process. Therefore, it is necessary to map the SDGs across ESG dimensions. Figure 7 presents the SDGs mapping which is based on the idea of Berenberg [5, p. 14], but this version is slightly modified.

Figure 7: Mapping of the SDGs across the three ESG dimensions



Source: [43, p. 4]

Mapping of the SDGs according to ESG criteria indicates that some goals appear within two or even three ESG dimensions. Such mapping is useful to the creators of the system of reporting on long-term corporate sustainability for establishing indicators. At the same time, the presented mapping could be valuable to any company. In this way, management could better understand which SDGs are important for their business practices, what impact the identified SDGs have on long-term sustainability, which value drivers can improve sustainability and which metrics should be selected for regular monitoring of multidimensional performance [5, p. 15].

Investors' interest in the disclosure of information that could be relevant in creating investment strategies is indisputable. They are aware that in the absence of transparent reporting they cannot assess the company's exposure to different types of risks, which means that they will not be able to make informed decisions. Companies can also benefit from high-quality reporting. A better understanding of risks and opportunities contributes to more efficient risk and performance management, more accurate assessment of the possibilities of providing additional sources of finance, enhanced communication with investors and lower cost of capital as well as better public image [14, p. 3]. Bearing all this in mind, both investors and managers look forward to the establishment

of a universal conceptual framework that would enable an easier positioning of companies regarding achieved financial performance, but also regarding potential impacts of social and environmental risks.

However, the current state of the reporting according to the SDGs is not satisfactory. The KPMG Survey in 2017, based mostly on 2016 reports, finds that in a very short period from publishing, the SDGs were already recognized as important to be reported on and companies started linking their activities with the SDGs. It was the case with 39% of N100 companies that report on sustainability [32]. In the 2020 Survey, the trend of SDGs reporting was shown as very intensive and over two thirds of N100 reporting companies disclosed the impact of their activities on the SDGs. Some other interesting findings are also observed, such as that the majority of companies prioritize in their reports the disclosures related to SDG 8, SDG 12 and SDG 13, while the connection with other SDGs is recognized to a lesser degree. However, the reporting quality is questionable, since 86% companies disclosed only positive effects of their activities rather than reporting on negative effects too. It is also evident that many companies do not have performance goals related to the SDGs, which opens debate of their honest commitment to the SDGs [33]. The academic research studies also show deficiencies in SDGs reporting. By investigating reporting practices of European companies

operating in the energy sector as one of environmentally sensitive sectors, authors find that although companies increasingly reported about the SDGs, it was often done in an unbalanced way by prioritizing those goals which can be easily connected with their practice, while some other goals are less addressed [37]. More striking, in most cases there are only general statements of the commitment to the SDGs, but without clear demonstration how the SDGs are integrated in strategies, business models and core operations, revealing that no substantial change in behavior of companies is provoked. The use of attractive pictograms is also noticed to serve for creating a favorable impression of companies' compliance with the SDG but lacking any substance [37].

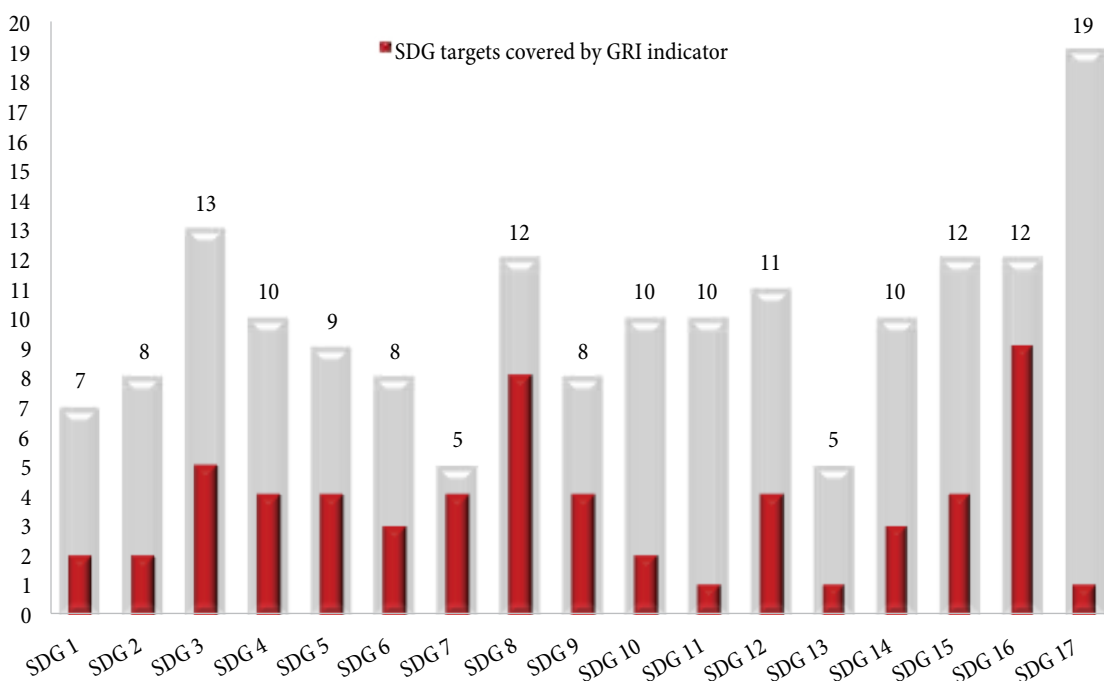
In order to reduce or eliminate inappropriate reporting practices, a comprehensive exercise should be taken to connect the SDGs with concrete indicators capable of measuring companies' impact on the SDGs. The use of indicators is inevitable, but empirical evidence shows that they are not employed sufficiently. In one cross-country study of 1370 companies, only 30 companies (about 2.2% of the sample) report the usage of key performance indicators (KPIs) related to the SDGs [26]. One of main reasons for this lack of KPIs could be seen in the complexity of creating

appropriate indicators. Considering the prevalence of GRI reporting framework and the fact that it already includes a large number of disclosures/indicators, it seems valuable to determine links between the SDGs and available GRI indicators.

We used the SDG Compass [23] to provide an insight into the connectivity of SDGs and SDG targets with GRI indicators [12]. A number of interesting findings could be derived from the statistics provided in Figures 8 and Figure 9. One encouraging result is that there is no SDG which is not covered by some of GRI indicators. However, when we move on the field of SDG targets, the situation is unfavorable since the majority of targets (64%) could not be translated into GRI indicators. Not all 17 SDGs are equally covered. In the case of 13 from 17 SDGs, the number of related targets which are not covered by GRI indicators is higher than the number of targets which are linked to GRI indicators. The worse situation is found in SDG 17. However, only in the case of SDG 7, SDG 8, and SDG 16, we find that the greater number of targets is linked with GRI indicators, with SDG 7 occupying the best position (80% of targets are covered by GRI indicators).

According to GRI categorization, GRI disclosures are classified into four groups: general (G), economic (Ec),

Figure 8: SDGs and GRI connectivity analysis



Source: Authors (based on GRI Compass data)

environmental (En) and social (S). For the achievement of individual SDGs, it could be necessary to work on more than one dimension at the same time. It is clear from the Figure 9 since indicators from different categories could be useful for assessing and monitoring progress to the same goal. In the case of SDG 8 and SDG 16, all four categories of indicators were employed. However, for some SDGs, available GRI indicators could be found only in one category (e.g. SDG 9, SDG 11), although it is obvious that those SDGs also have connections with other topics (categories). To summarize, GRI indicators from economic category are linked with 12SDGs, GRI indicators from environmental category as well as from social category are linked with 9 SDGs each, and general GRI indicators are linked with 5 SDGs.

According to Figure 9, 370 GRI indicators are linked with 17 SDGs, although GRI framework proposes lower number of indicators. This is due to the fact that one GRI indicator (disclosure) could encompass more than one reporting requirement and the disclosure of the same GRI could be put in the context of different SDGs, so appearing a few times in the total number. The discrepancy in the distribution of indicators among the SDGs is significant, ranging from 1 (SDG 17) to 80 (SDG 8). This is partially caused by the different number of targets per individual SDG, but could be also seen as a consequence of measurement issues related to some

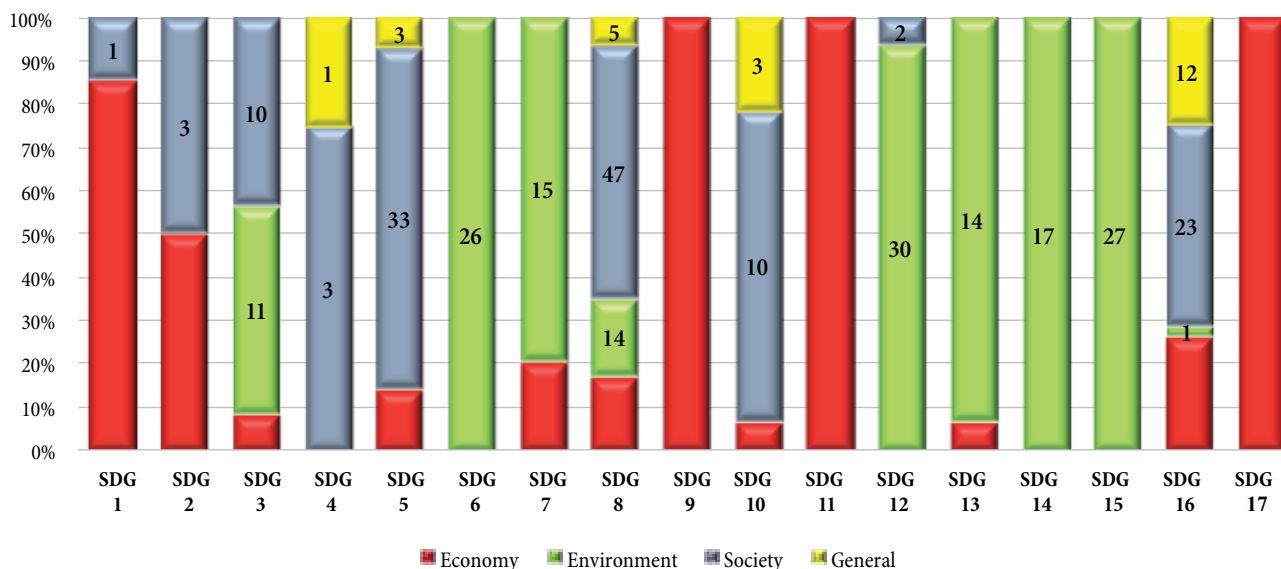
SDGs. Considering the character of indicators, the content analysis of these 370 indicators reveals that the largest number of indicators reflects environmental matters (42%), then social issues (36%), while economic topics are covered by about 16% indicators and general disclosures are represented in smaller percentage (6%). Hence, there is no balance between different dimensions.

Considering that a lot of sustainability reporting frameworks have been already developed, and that GRI offers one of the most advanced frameworks, the results presented in this analysis show that there is still much to be done in the reporting field in order to generate such sustainability reports which are capable of illuminating companies' contribution to the SDGs. The very low percentage of SDG targets covered by specific indicators reflects significant difficulties in the process of operationalization of SDGs. Additionally, voluntary nature of SDGs disclosures coupled with other issues in reporting, such as the lack of independent assurance of reported content, often seriously diminishes the usefulness of reports, which are characterized by a selective approach and symbolic compliance.

### Conclusion

The global sustainable development goals reflect a broad consensus about difficult issues that threaten the

Figure 9: Structure of EES indicators



Source: Authors (based on GRI Compass data)

survival of humanity. The global character of these goals points to the magnitude of growing problems stemming from environmental degradation, climate change and overexploitation of natural resources. The urgency of solving these problems was one of the reasons for a widespread support for the adoption of the 2030 Agenda for Sustainable Development. The incorporation of the most delicate problems facing the world and their classification into the 17 individual sustainable development goals have placed the responsibility on global, regional and national institutions, governments, regulatory bodies and companies to take an active part in the implementation of these goals. The SDGs have a global character, but due to the greatest responsibility of companies for the existing problems, these goals must be transposed to the level of national economies and individual companies, which is the only way to enable their full operationalization. The unfavorable context in which the implementation of the SDGs has been taking place in recent years (pandemic, wars, energy crisis) compromises the global commitment to the SDGs, calling into question their achievement by 2030.

Integrating the SDGs into the corporate reporting process is necessary, but not so simple. The need for creating a multidimensional system of reporting on companies' performance, in which the information on financial performance would be complemented with the assessments of social and environmental risks, promotes ESG approach to reporting as one of the possible solutions. Putting the risks related to the environment, societal interests and governance in the foreground also shapes the process of external reporting, i.e. accounting for the company's overall performance. As a result, management is forced to take care of the long-term sustainability of value creation, while investors in equity and debt securities, as well as creditors, can efficiently redirect capital in accordance with the requirements of the green transition.

However, opting for ESG approach raises the issue of choosing priorities between individual dimensions. It is easy to proclaim the equal status of each ESG component, but the question is what to do in the decision-making process when some of them are mutually exclusive. Profitable coal production could be financially attractive. Also, it could be interesting from the societal perspective as it enables

energy generation and contributes to economic growth as well as to an increase in employment. The problem is that it compromises environmental protection. It is an open question whether in this or similar situations the priority should be given to financial goals or environmental problems. Given that all three goals are equally important, and that we cannot give up any of them, striking a balance between them is a major challenge.

Reporting is the best way for companies to account for and communicate to the public their approach to the implementation of the SDGs. Unfortunately, the expertise and orderliness that already exist in financial reporting could not be easily attained in sustainability reporting. The current situation points to the existence of a large number of private and public organization competing for their place and trying to gain legitimacy as the setters of guidelines and reporting standards in the area of sustainability. Everybody suffers due to this confusion, including those who compile reports as well as those who use them. The problems are multi-layered, ranging from the possibility of avoiding any reporting when it is on a voluntary basis, the inconsistency and incomparability of presented reports, to the doubts about the content and its faithful presentation. Leaving sustainability reporting only to the market incentives and mechanisms has turned out to be counterproductive. In recent years, we have witnessed the efforts toward the development of binding regulations, led by the EU and aimed at improving the relevance and quality of sustainability disclosures.

Although the SDGs are globally recognized as an imminent basis for tracing the path to a sustainable planet and, therefore, as a benchmark for assessing the behavior and progress of companies in the field of sustainability, their reporting status is rather undefined. Even the companies that tend to prepare sustainability reports sometimes fail to provide any reference to the SDGs. On the other hand, empirical findings show that the presence of disclosure about the SDGs does not necessarily imply high-quality information, nor a serious commitment of companies to these goals. There are few examples showing that the SDGs have encouraged companies to change their behavior and to actually incorporate these goals in their strategies and undertake concrete activities to implement them.

In most cases, companies present in their reports only a symbolic commitment to the SDGs, while there is no description of specific activities in this field, which casts suspicion on the very existence of the related efforts. A further problem is related to the practice of disclosing only the company's positive effects on the SDGs, while leaving out the bad ones even though they exist, and to the general validity of presented information, thereby clouding the actual position of the company – a green company or a greenwashing company. It seems that there is a need for investing a lot of effort to make reporting fit for purpose, which involves the development of binding regulations and a comprehensive set of indicators that would be suitable for monitoring the overall progress of companies in achieving the SDGs.

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