COVID-19 and Pandemic Risk: The Link to SDG 13, Climate Change and the Finance Context

Federica Doni and Lara Johannsdottir

Abstract This chapter aims to assess the impact of COVID-19 on Agenda 2030 specifically focusing on SDG 13, i.e. climate actions. Habitat loss, the creation of artificial environments, the manipulation and trade of wild animals and more generally the destruction of biodiversity are mainly affecting the dynamic balance of the biosphere, as is confirmed by the first world report on the world's ecosystems, i.e. the Millennium Ecosystem Assessment. The changes in the use of land and the destruction of natural habitats, such as tropical forests, may be the main origin of more than half of emergent zoonosis. Given the magnitude of the current health crisis and the potential of pandemic risks, the world needs to pay attention to climate change and the broader sustainability agenda at this time. As the current health crisis is turning worldwide interest on climate change there is an urgent need to assess the response to COVID-19 from the financial and insurance perspective. In doing this our analysis points out the relationship between pandemic risk and sustainable development by considering both negative and positive impacts on the achievement of the SDG 13 targets. The ongoing COVID-19 shows the urgent need to strengthen sustainability by reducing and managing climate and environmental risks that can be supported by radical solutions provided by sustainable finance, as the European Commission emphasized in its consultation on Renewed Sustainable Finance Strategy. From the insurance industry view, it is clear that potential actions will be needed to limit the impacts of extreme weather events and related effects on global supply chain.

Although the present chapter is the result of a collaborative analysis, Sects. 1 and 2 were written by Lara Johannsdottir, while Sects. 3 and 4 were written by Federica Doni.

F. Doni (✉)
Business Administration and Accounting, Department of Business and Law, University of Milano-Bicocca, Via Bicocca degli Arcimboldi 8, 20126 Milan, Italy
e-mail: federica.doni@unimib.it

L. Johannsdottir
Environment and Natural Resources Graduate Programme, Faculty of Social Sciences, University of Iceland, Gimli v/Saemundargotu, 102 Reykjavík, Iceland
e-mail: laraj@hi.is

W. Leal Filho (ed.), *COVID-19: Paving the Way for a More Sustainable World*,
World Sustainability Series, https://doi.org/10.1007/978-3-030-69284-1_3

Keywords COVID-19 · Climate change · Finance · Insurance · Sustainable development goals

1 Introduction

> The virus has made it clear: the future is now
> (Bieri et al. 2020)

This is a statement proposed by four scientists who also state that the coronavirus crisis allows us "to perceive the state of the world with increased clarity" (Bieri et al. 2020). Furthermore, they explain how obsolete views can be transformed into forward-looking ideas do design capacity for addressing sustainable development challenges. The first topic is a socially-justice in the economy. In this case the transformation has to go from disgorgement logics, where social and ecological costs are externalized to the society, to the logic of value logic, where such costs are internalized and that nobody is left behind in the society. The second topic is global environmental change. In this case the transformation has to go from delay in actions until it is too late to respond to the consequences', to reshaping the people-nature relationship in the economies, cities and towns, and nutritional and energy systems. The third topic is global inequality. The transition is from prioritizing ones country first, free trade and development aid, to a cooperation and partnership so a shared vision of the future can be achieved. The fourth topic focuses on the role of science. This means a transformation from limited strength of experts, only able to voices their warnings, alongside those sharing doubts and fake news, to a situation where world-leaders and scientists develop joint solutions. The fifth, and the last, topic is further sustainability-related issues in areas such as happiness and prosperity, an inter-generational contract, participation, security, and social relationships (Bieri et al. 2020).

This context represents a significant opportunity to explore the Sustainable Development Goals (SDGs) from a new angle and how they can be achieved by transforming the global economy through a new pathway of transition. The United Nations Environment Programme (UNEP) has, consequently, identified four SDGs that can support global recovery in the wake of the COVID-19 crisis. These are goal 13, climate actions, goal 15, life on land, goal 14, life below water, and goal 12, responsible consumption and production (UNEP 2020). Addressing goal 13, requires urgent actions to battle climate change and its impacts, thus aligning actions with implementation of the Paris Agreement from 2015 (United Nations 2015). Implementation of SDG 13, furthermore, contributes to the fulfilment of the other 16 SDGs, but it requires increased investment and mobilization of billions of US$ annually to low-carbon development and adaptation to climate change (United Nations Development Programme 2020). However, the progress in this area has not been as expected so that capacities and access to finance has to scaled up at a much faster rate than since the ratification of the Paris Agreement, specifically for small island developing states and the least developed countries (United Nations 2019). This chapter aims to assess the

impact of COVID-19 on Agenda 2030 specifically focusing on SDG 13, i.e. climate actions. Given the importance of finance, and thus investors, for implementation of SDG 13, the chapter intends to answer the following questions:

- What is the impact of COVID-19 on investors'?
- What is the role of investors in addressing SDG 13 (climate actions) in the wake of the COVID-19 crisis?
- What opportunities are there for investors and companies to address SDG 13 (climate actions)?

To address these questions the paper is structured around two focal points: (a) the impacts of COVID-19 on investors', and (b) the role of investors in addressing the SDGs and the opportunities this entails for investors and businesses. Previous studies have analysed the impact of the SDGs on businesses (Schramade 2017) by highlighting how Corporate Social Responsibilities (CSR) activities undertaken by companies are aligned with the SDGs (Poddar et al. 2019). Particularly, SDG 13 can produce relevant implications for finance and investors (Doni et al. 2020) by stimulating awareness on the climate change effects on the financial performance of private sector (Gallego-Álvarez et al. 2014; Gulluscio et al. 2020; Pizzi et al. 2020). Although some recent studies emphasized the interrelationship between sustainable development and global risks (Cernev and Fenner 2020; Pan and Zhang 2020), particularly, risk of emerging infection diseases (EIDs) such as COVID-19, has to be extensively analysed as it is a crucial component of the sustainable development planning (Di Marco et al. 2020). This risk may be relevant also in the light of the human rights framework (Fleetwood 2020) with relevant effects on the process of the Agenda 2030 implementation (Leal Filho et al. 2020). As Cernev and Fenner (2020) demonstrated, a set of targets, that includes SDG 13, can act as an important leverage point in preserving healthy human and environmental resources in the light of catastrophic and existential risks. Given the lack of academic literature on the link between SDG 13, climate actions and COVID-19, so far, the chapter relies on available information from relevant stakeholders, both international organizations, and investors alike. From a methodological point of view, this chapter uses a qualitative approach to give a first assessment on a relatively new field in order to stimulate a further development of this research. Methods used involve an analysis of both empirical and theoretical studies, a collection of comments on the main emerging issues and the current global trends (Leal Filho et al. 2020).

2 The Impact of COVID-19 on the Investors' Context

The COVID-19 pandemic situation highlights the issue of systemic risk (CERES 2020; Johannsdottir and Cook 2019; Schwarcz 2008; Thurm et al. 2018) and opportunities, that is if investors are willing to help countries and communities rebuild economies and societies in more sustainable and resilient way than before the crisis by investing in green technology, renewable energy, and new sustainable sectors

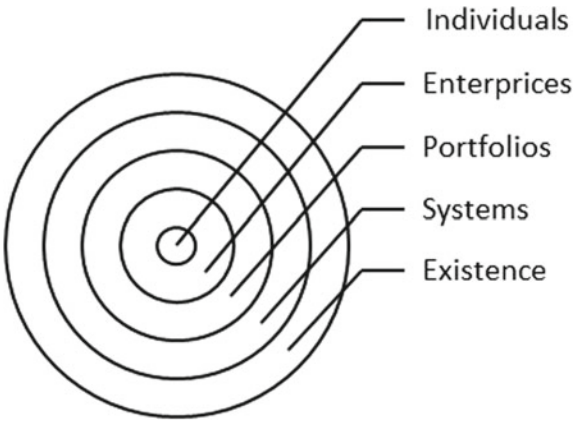

Fig. 1 Systemic risk. Model inspired by Johannsdottir and Cook (2019), Thurm et al. (2018)

that will help the global economy transitioning fast towards decarbonisation (UNEP 2020). Systemic risk includes risk to individuals, enterprises, portfolios, systems, and existance of species, such as in case of climate change (Johannsdottir and Cook 2019; Thurm et al. 2018), see Fig. 1. From a societal, economic and business prespective the society is a set of systems (Kennedy et al. 2017), where interactions between systems take place on micro, meso and macro levels going beyond time and place (Normann 2001). The COVID-19 pandemic demonstrates vulnerability of systems and the collective well-being of humans, thus bringing the discussion to the systemic level in case of health and fragility of systems (CERES 2020) that are increasingly interconnected (The Investment Integration Project 2020).

Systemic risk has, whether it is climate or pandemic-related, the ability to "destabilize capital markets and lead to serious negative consequences for financial institutions and the broader economy" (CERES 2020, p. 6). Therefore, investors are forced think in terms of different scales regarding risks and solutions and reconsider their consumptions about modern finance. To hedge against systemic risk investors' strategy is typically to diversify their investment portfolios. Previously, investors have mainly focused on enterprise level risks or risks in investment portfolios (meso level), although more recently they are starting to recognize systemic risk (macro level). The existential risk (cosmic level) is to a lesser degree recognized (Thurm et al. 2018), but understanding of systemic and existential risks is essential to deal with wicked problems (Batie 2008) such as the COVID-19 pandemic. Wicked problems differ from ordinary problems which is hard to deal with, as the challenges are unprecedented and the situation is constantly changing. The problem implicates many stakeholders, the roots of the issue are complicated and tangled, it is difficult to come to grips with the problem as it changes when attempts are made to address it, the challenge is unprecedented, and there are no indication of the right way to address the problem (Camillus 2008). Taming wicked problems requires systems thinking (Kennedy et al. 2017). The claim is that "COVID-19 has exposed how the financial sector has undervalued the importance of social impacts", and that "capital markets must better factor in the risk of future massive systemic failures". Furthermore,

"[i]nvestors need to understand their role in ensuring that inevitable, future shocks to social systems are not as financially or economically catastrophic as COVID-19 has been" (The Investment Integration Project 2020).

Green fiscal stimulus packages, related to the COVID-19 crisis, on national, regional, and sub-regional levels, and green financing are encouraged and supported by United Nations Environmental Programme (UNEP). This should help prioritizing stimulus and finance towards sustainable jobs and income, investments in ecological and social foundations, support low-carbon production and consumption, public wealth, and steer responsible finance towards climate stability (UNEP 2020). Opportunities in relation to rebuilding a climate resilient and sustainable economy are in sectors such as food systems, building and construction, energy transition, mobility, and waste handling. It is furthermore suggested that policies put forth in so-called Global Green New Deal (GGND) following the economic crisis serve as lessons learned and can be valuable in rebuilding the world economy in the aftermath of the COVID-19 crisis (UNEP 2020). Comparably, GGND suggested prioritizing investments towards energy-efficiency, renewable energy, sustainable transportation, freshwater management and sanitation, food security, while reducing substantially subsides towards fossil fuels (United Nations Environment Programme 2009).

Sustainable finance has been defined as "any form of financial service integrating environmental, social and governance (ESG) criteria into the business or investment decisions for the lasting benefit of both clients and society at large", but sustainable finance "include sustainable funds, green bonds, impact investing, microfinance, active ownership, credits for sustainable projects and development of the whole financial system in a more sustainable way (Swiss Sustainable Finance n.d.). Another definition states that sustainable finance should create environmental, social and governance value that are sustainable over time (UNEP Finance Initiative 2016). As such, sustainable finance should support sustainable development and the implementation of the sustainable development goals, including Goal 13. More specifically, within the banking sector sustainable finance refers to the following business lines: (1) commerce and corporate lending, (2) project finance, (3) investment banking, and (4) trade finance. Energy efficiency and financing companies in their transition process towards sustainability are examples of commerce and corporate lending category, and sustainable energy infrastructure, such as renewable energy, energy efficiency, and smart meters, fall within the project finance category. The outcome should include, among other things, climate change mitigation and financial inclusion (UNEP Finance Initiative 2016). Some of the principles used to influence and mainstream commitment and actions of financial institutions regarding climate change and sustainability include the Principles for Positive Impact Finance (UNEP Finance Initiative n.d.-a), the Principles for Sustainable Insurance (UNEP Finance Initiative n.d.-c), the Principles for Responsible Banking (UNEP Finance Initiative n.d.-b), and the Principles for Responsible Investment (PRI n.d.). It is stated that signatories to the Principles for Responsible Investment (PRI) "should be supporting sustainable companies through this crisis – in the interests of public health and long-term economic performance – even if that limits short-term returns" (PRI 2020a).

In the interconnected financial system, financial institutions around the globe are dealing with the effects of the COVID-19 pandemic. Just as any other businesses, they need to plan their own recovery path. Health and well-being of employees comes first, followed by technological and productivity improvements, reconnection with customers, engagement with unconventional partners to develop new value propositions, stronger focus on ESG issues and considerations, and improved alertness and risk management (Liddy 2020a). In dealing with these issues leaders within the financial services focus on challenges in six key areas, namely employees, customers, liquidity, relationship with suppliers dependency on third-parties, communication and transparency, and scenario planning (Liddy 2020b). Although, financial institutions need to address these key areas they are also applicable for other types of industries. In the wake of the pandemic crisis huge level of growth is predicted in remote banking, given that banks and customers have had to change their behaviour by progressively moving to digital and cashless solutions (Caplain 2020). Other long-term impacts include a focus on cyber security, reduction of interest rates, diminished business activities', non-performing loans, and more (Deloitte 2020). For banks there are also opportunities related merger and acquisition (M&A) activities and restructuring of numerous industries (Deloitte 2020).

The COVID-19 pandemic has manifold impact on the insurance sector, including non-life (general) and life and health insurers, and consequently reinsurers. In case of non-life insurers pandemic risks may be excluded in insurance policies, but such exclusion clauses were in some cases strengthened after the SARS coronavirus outbreak in 2003 in case of travel insurance and business interruption. Instead, losses may be recorded in case of cancellation coverage as such policies may cover risk of pandemics. Other insurance types potentially affected are trade credit insurance, paid out when customers or supplies cannot pay their debts, or workers' compensation insurance in cases when they are not sufficiently protected against exposure to the coronavirus. Insurers offering life and health insurances may be affected by higher morbidity and mortality rates. Reinsurers are then affected indirectly through their insurance clients. Decline in interest rates and volatile markets will, additionally, impact the financial assets of insurers and their investment portfolios (Kölschbach 2020). During the COVID-19 outbreak some insurers have stepped up by developing insurance policies, either as standalone products or by extending terms in existing products, to protect their policyholders from the COVID-19 risk or by making donations to those on need, including hospitals and/or healthcare workers. The COVID-19 crisis is also pressuring insurers to further digitalize their daily operations, both in their interaction with customers and their agents. Consequently there is less need for physical offices, thus with implications' for the real estate market. The size and the scale of the COVID-19 crisis is such that business continuity plans of insurers need to be reviewed, both by the sector and regulators, and what is the future role of the insurance sector and how major risks could or should be mitigated and priced (Hay n.d.). Although premiums should reflect the risk policyholder are exposed to, they may become so high that they will exceed clients' ability or willingness to take out insurances covering pandemics.

The private equity firms and funds are mounting up cash according to analysts (Lachenmeier et al. 2020), suggesting investment opportunities. Post-COVID-19 opportunities include investments in firms others are afraid to invest in, namely businesses and economic sectors struggling hard in the wake of the pandemic crisis leading to short-term liquidly shortage (Lachenmeier et al. 2020; Menghi et al. 2020). Through flexible funding solutions private equity firms and funds can bring capital to the table, thus possible help preserve jobs, restructure debt, and help corporate managers steer through the crisis. Some of the equity firms are foreseeing how to carry this through. Alternatively, private equity firms may offer debt-financing in relation to small-business bailouts if they are putting their capital to work. The downside is that there is still lack of information on the impact of COVID-19 and how the virus will progress and contained (Menghi et al. 2020), and it is also recognized that equity funds and firms may earn immense returns through many small but messy deals (Ohrenstein n.d.), therefore not without caution and criticism if scrutinized through the lens of ESG and sustainable finance.

In the context of sustainable development and sustainable finance UNEP Finance Initiative has explained the link between climate, green and sustainable finance, but a framework proposed includes four categories, namely environment, social, economic and governance categories, thus adding economic to the previously ESG categories. The environmental categories can be subdivided into three categories, climate change mitigation, climate change adaptation, and other environmental issues. On the whole spectrum of the four categories climate change mitigation focuses on low-carbon finance, climate change mitigation and adaptation combined are categorised as climate finance, adding other environmental issues to these categories broadens the finance to green finance. The environmental category, with its subcategories, and the social category combined represent socio-environmental finance, and all the four main categories, ESG plus economics, symbolize the sustainable finance (European Commission 2017). This suggests that the environmental category is most important when implementing Sustainable Development Goal (SDG) 13 (climate change) keeping in mind that the implementation of SDG 13 contributes to the fulfilment of the other 16 SDGs (United Nations Development Programme 2020), see further discussion in the following section.

Green indexes, such as FTSE Russell, including FTSE Green Revenues which supports low carbon economy by recognizing eight industry sectors and 60 subsectors critical for energy transition, MSCI which uses Global Environment Indexes Methodology (GEIM) and Global Climate Index Methodology (GCIM) for screening different sectors, and NASDAQ offering a large number of environmental stock indexes, such as the Nasdaq Green Economy Global Benchmark Index (QGREEN) (European Commission 2017). The S&P Global Ratings Green Evaluation weighs, in their green evaluation, three categories. These are transparency, governance, and mitigation or adaptation. The mitigation criteria is the most important with regards to Goal 13, where "buildings, industrial efficiencies, energy infrastructure, transport, and water" are evaluated (Standard & Poor's Financial Services LLC 2017, p. 4). The net benefit ranking is based on key performance indicators (KPIs) such as carbon,

waste or water. Then a specific Carbon Hierarchy is employed, followed by evaluation of environmental impact, finally resulting in a mitigation score. The Carbon Hierarchy has five categories, showing an increased contribution to avoidance of climate change (Standard & Poor's Financial Services LLC 2017):

- **Improvement of fossil fuel based activities' in regards to environmental efficiency and impact**. This includes a transition from coal to natural gas, clean fuel production, and clean use of coal.
- **Decarbonization technologies entailing environmental risks**. This includes nuclear technology and large hydro projects in tropical areas.
- **Decarbonization by lessening emissions in energy intensive industries**. This includes industrial efficiencies, green transport, and green buildings refurbishment, new build best standards, and energy-efficient products.
- **Significant decarbonization of main sectors through low-carbon solutions**. This includes green transport apart from hybrid/fuel efficient vehicles, green buildings, or new built best standards/net zero.
- **Systematic decarbonization of economies**. This includes wind and solar power technology, small and large hydro projects, in addition to energy management and control (Standard & Poor's Financial Services LLC 2017, p. 5).

The European Union (EU) Technical Expert Group (TEG) on Sustainable Finance presumes that the EU Green Bond Standard, Paris-Aligned and Climate Transition Benchmarks, and Sustainable Taxonomy may be useful for developing plans for the public and the private sector on how to recover from COVID-19 pandemic (EU Technical Expert Group on Sustainable Finance 2020a). Furthermore, EU's Roadmap to Recovery is intended to result in more resilience, fair and sustainable Europe. The principles guiding the Recovery Roadmap are solidarity, cohesion, convergence, inclusive, and co-owned, but the approach needs to be flexible and agile and evolve over time and grounded in EUs set of values and rights. In this regard the European Green Deal (European Commission 2020), but it aims for reaching the 2030 goal, and climate neutrality by 2050 (EU Technical Expert Group on Sustainable Finance 2020a).

To push EU's Sustainable Finance plans further the TEG suggests that "the European Commission creates a voluntary standard to enhance the effectiveness, transparency, accountability, comparability and credibility of the green bond market without disrupting the market, and to encourage bond issuers to issue their bonds as 'EU Green Bonds' (EU Technical Expert Group on Sustainable Finance 2019, p. 24)", but the core element of the standard are green projects, a Green Bond Framework (GBF), allocation and impact reporting, and verification of outcomes (EU Technical Expert Group on Sustainable Finance 2019). Climate benchmarks and benchmarks for ESG disclosure are "aimed at reallocating capital towards a low-carbon and climate resilient economy", one being EU Climate Transition Benchmark and the other one EU Paris-aligned Benchmark (EU Technical Expert Group on Sustainable Finance n.d., p. 2). The objectives of these benchmarks are similar, but the ambition level differ whereas the latter one is stricter in terms of minimum standards of disclosure (EU Technical Expert Group on Sustainable Finance n.d.). Additionally,

the EU Taxonomy is put forth as a tool to guide investors, companies, issuers and promoters of projects with regards to low-carbon, resource-efficient, and resilient economy, where a performance threshold has to be reached, in terms of substantial contribution, in one of the following areas: (1) climate change mitigation, (2) climate change adaptation, (3) sustainable and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, (6) protection and restoration of biodiversity and ecosystems (EU Technical Expert Group on Sustainable Finance 2020b, p. 2).

3 SDG 13 Targets and Climate Change: COVID-19 as an Opportunity for Investors and Companies to Preserve Our Planet

The role of finance is addressed in the target 13.A of SDG 13, where the "*goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible*" (United Nations 2019), is specifically stated. Indicators for successful implementation of SDG 13, include 13.1.A, stating: "Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment" and 13.1.B, where the role of finance is recognized as an important mean for supporting the least developed countries and small island developing states so capacities for planning and managing effectively climate change can be strengthen, such as by focusing on local and marginalized communities, women, and youth (United Nations 2019).

In discussing SDG 13 in the context of COVID-19 the United Nations Environment Programme (UNEP) states that the "*climate crisis may be seen as a slower moving crisis than the speed of this global pandemic, but it's the long-term effects are likely to be far more threatening*". This is due a situation where global temperature rise of the planet is on a track for a 3.2° warming, without increased commitment to decarbonisation (UNEP 2020). This situation increases the likelihood of extreme weather events, widespread destabilization of the global food system, flooding and droughts, pandemics, and negative economic and security issues. Furthermore, this will interrupt gains attained to address most of the other SDGs, as well as economic recovery in the wake of COVID-19 crisis (UNEP 2020).

"An unplanned transition to a low-or-zero carbon economy can cripple key industries", given that *"government policies, consumers sentiments, liability risks and technological innovation"* are ignored, potentially resulting in accumulative losses, and thus of great importance for the investment community given potential ripple effects on financial institutions (CERES 2020, p. vii). Even though markets have been slow to reflect the climate change as a risk factor, but are on the edge of restructuring finance fundamentally given a rapid change in the understanding of climate change

physical impacts and the global economy. Investors are starting to understand climate risk as an investment risk, thus figuring out how investment portfolios need to be modified (Fink 2020). It is now considered a fiduciary of investors to help clients address these risk-factors (Fink 2020; Sullivan et al. 2015). Some major investors are therefore avoiding and selling-off shares in non-renewables, mainly coal production (Fink 2020; Lloyds of London & University of Oxford 2017), and transitioning to renewables even though such transition will take some decades. What is also brought forth that energy transition needs to be fair and just (Fink 2020), thus aligning with the implementation of the Sustainable Development Goals (United Nations Development Programme 2020). This requires improved disclosure for shareholders, and other stakeholders, on how companies manage climate and sustainability-related aspects of their business, even going so-far as in the case of BlackRock to *"vote against management and board of directors when companies are not making sufficient progress on sustainability-related disclosure and then business practices and plans underlying them"* and making sustainability as the new standard for investing (Fink 2020).

Role of the finance markets in response to climate risk and its socioeconomic impacts and physical hazards are through insurance availability, cost, terms and conditions (Dlugolecki 2009; Jóhannsdóttir et al. 2012), lending practices (Woetzel et al. 2020), just to name few. Decarbonisation is seen as a part of a climate change management approach in case of reducing and avoiding build-up of climate-related risks by scaling up solutions so that the goal of net-zero emissions can be reached. This means, more precisely, to remove carbon to a possible extent from future economic activities and from the atmosphere, highlighting the importance of decarbonizing investments supporting transition to renewable energy (Woetzel et al. 2020).

Given these reflections, decarbonisation can be used as an optimal opportunity to reallocate capitals and to foster investors' engagement in the transition to a lower carbon economy (Ceres 2020; Faioli and Natolli 2020) but it is also worthwhile to consider the social impacts that previously "had been neglected as externalities" (CERES 2020, p. 11). All businesses can be negatively affected by decabornisation, particularly some industries such as fossil fuel companies but also other sectors like cement, transportation, utilities, heavy industry, agriculture may suffer a significant decrease in their assets value or they can be exposed to serious climate risks and related legal liability (CERES 2020). The increasing focus on climate losses and the risk for companies to be considered responsible for climate damages can represent a serious weakness.

Nevertheless, it can be a strength because the pandemic crisis can exacerbate companies' responses to fight climate change by facilitating the achievement of some targets included in SDG 13. For example as a prompt reaction, a group of 155 large companies (IISD 2020) signed an agreement *"urging governments to align their COVID-19 economic aid and recovery efforts with the latest climate science"* (IISD, SDG Knowledge Hub 2020). As the current pandemic is a global disruption, climate change is *"as urgent as ever"* (IISD, SDG Knowledge Hub 2020). It is important to consider that all organizations have to fight an interconnected crisis that

link the global climate crisis with relevant impacts on both human life and natural ecosystem. Given that, at micro.-level a number of 155 companies, that are part of the Science Based Targets initiative and its Business Ambition of 1.5 °C Campaign, reaffirmed their own science based climate commitments. This agreement identified three specific aims to recover better from COVID-19: (1) demonstrate that the best decisions and actions are grounded in science; (2) invest in recovery and resilience for a systemic socio-economic transformation; (3) work with Governments and scale-up the movements. This initiative emphasizes the importance to involve the public sector i.e. governments and policy makers (Doni et al. 2020), in the alignment of its recovery efforts to the companies' ambitious to reach net-zero emissions well before 2050 (UNGC 2020).

As mentioned before COVID-19 and climate emergency can be seen as both a systemic risk that is determining disruptive effects on financial markets, assets valuation and global economic stability (CERES 2020). By considering the global impact of this health crisis on all investors the engagement investors' process towards solidarity can represent an unusual opportunity to push investors towards green and sustainable finance. As PRI emphasized the signatories of PRI should influence companies during this crisis to focus on long-term economic performance rather than short-term returns (PRI 2020a). In this perspective, seven immediate investors' actions have been identified, among these actions, Action 1: engage companies that are failing in their crisis management; Action 3: re-prioritise engagement on other topics, Action 7: maintain a long-term focus in investment decision-making (PRI 2020a). As a general remark, PRI argued that this global crisis would determine radical changes in our financial system and governments should support companies and industries that can help to respond to climate emergency and inequality rather than those risk sharpening them (PRI 2020a). In this respect PRI commissioned the *Inevitable Policy Response*, a policy forecast to support investors anticipate and navigate transition risk (PRI 2020b). This pioneer project aims to prepare financial markets that have not adequately evaluated "the likely near term policy response to climate change" (PRI 2020c). As COVID—seems to be very similar to climate risk, we have to take into account that climate related risks continue to increase and it is much to learn from this health crisis and how to manage the related risks.

The COVID-19 virus and the economic crisis need to calibrate a global response to the SDGs. In doing this, the UN-led Inter-Agency Task Force on Financing for Development *"just called for in its new Financing for Development Report, a global and multilateral response is needed that attacks the virus and puts the global economy back on a path to achieve the Sustainable Development Goals (SDGs) and the Paris climate agreement"* (UN 2020b). That effort should start involving an effective action by the International Monetary Fund (IMF) and the World Bank to organize a radical emergency response *"to stem the crisis in the developing world in order to steer their economies toward the SDGs"* (UN 2020b). Developing countries are faced with significant devaluation of their exchange rates and a ballooning of debt. Such a situation *"is wreaking immediate havoc and derailing efforts to meet the SDGs"* (UN 2020b). Particularly, we should take into account SDG 14 and SDG 15 as they strictly related to biodiversity issues. Conservation efforts to fight illicit poaching

and trafficking of wildlife, to protect animal breeds and to preserve rural areas in developing countries, should be enhanced and take in place (UN 2020a).

In this perspective, we have to point out some effects after COVID-19 that can determine both positive and negative effects in terms of the achievement of the SDG 13 targets. Regarding to positive effects we have to take into account some benefits in terms of pollution and human health. A relevant aspect is the reduction in pollution and carbon emissions during this period of lockdown. Some organizations, at local and international level, are checking the current benefits from the shutdown of factories and business activities on sea, land and air pollution. For example the European Environment Agency's (EEA) is assessing how coronavirus measures have influenced concentrations of air pollution by developing a viewer that tracks the weekly average concentrations of nitrogen dioxide (NO_2) and particular matter (PM10 and PM2.5). The drop in air pollution should be investigated in the view of forward-looking investments and ambitious policies to move towards a resilient and sustainable society (EEA 2020). Nevertheless, we cannot avoid some reflections on the further steps of the health crisis. *"Fall in COVID-linked carbon emissions won't halt climate change"* as UN weather agency chief said. The expected drop in gas emissions cannot be considered a stable and lasting consequence linked to the economic crisis after the COVID-19 emergency. It is "only short-term good news", the Head of the UN weather agency said recently (UN News 2020). The World Meteorological Organization (WMO) argues that the reboot of the global economy will cause the return of emissions to normal levels. Furthermore, "*there might even be a boost in emissions because some of the industries have been stopped",* the WMO head cautioned (UN News 2020). In the last decade, the "One Health" approach has become increasingly popular at a global level, which recognizes that human health is closely linked to animal and environmental health. A strategic concept formally recognized by several United Nations bodies such as UNEP, UNDP, WHO, FAO, the World Organization for Animal Health (OiE), the European Commission, research institutes around the world, NGOs and others bodies. "One Health" identifies an holistic concept of health of people, animals, plants, living and working environments and ecosystems, promoting the application of a multidisciplinary and collaborative approach to address the potential or active risks that originate from the interface between living and working environment, animal populations and ecosystems. To make the "One Health" approach truly effective, it is necessary to establish a better and systematic interaction between professional groups with greater skills in this regard, in particular between doctors and veterinarians, epidemiologists, ecologists and wildlife experts, but also sociologists, economists, jurists. Only by acknowledging that our health and well-being are closely related to those of the nature that hosts us, we can protect our species from the most harmful effects of the pandemics. An effective and sustainable way of action should therefore ensure the natural functioning of the ecosystems and their careful management to regulate diseases, hinder their spread and thus reduce their impact on human health (WWF Italy 2020).

Particularly, the COVID-19 shock can cause negative impacts on the different kinds of capitals, such as financial capital (reduction of production capacity, fall in investment, etc.), human capital (unemployment and underemployment reduce

the knowledge embedded in individuals) and social capital (reduction of social interactions).

Immediately after the crisis an Italian organization (ASVIS 2020) carried out a preliminary quantitative assessment of the COVID-19 likely impact on the SDGs by evaluating the predictable trend of the over 100 indicators that are used to elaborate the composite indices of the 17 goals. Evidences highlighted a large negative impact on SDG 1, 3, 4, 8, 9 and 10, on the other hand, positive effect is on SDG 13 and 16. Particularly, SDG 13 can take advantage from the overall improvement of climate indicators because of the lockdown.

As a final remark, coronavirus pandemic represents an excellent opportunity to tackle the SDGs in different ways as some recent studies confirmed. For example, Pan and Zhang (in press) argued that COVID-19 suggests a new critical journey of tackling the SDGs by developing the concept and practice of digital sustainability. Moreover, an interesting analysis demonstrated that the achievement of the foundational SDGs is essential to reduce global catastrophic and existential risks (Cernev and Fenner 2020). Taking into account the extensive interdependencies between the 17 SDGs this study demonstrated that SDG 13 with SDG 4, with other ones (2, 8, 12 and 16), is the most important to be used to reduce potential long-term global risks for humanity (Cernev and Fenner 2020). Given that, the interaction of all SDGs (Biehl and Thomson 2020) can also help to move the global system to desirable outcomes and to reduce the currently increasing of risks of disasters.

4 Conclusions

The chapter aimed to assess the impact of COVID-19 on Agenda 2030 specifically focusing on SDG 13, i.e. climate actions. Given the importance of finance, and thus investors, for implementation of SDG 13, the chapter intended to answer the following questions:

- What is the impact of COVID-19 on investors?
- What is the role of investors in addressing SDG 13 (climate actions) in the wake of the COVID-19 crisis?
- What opportunities are there for investors and companies to address SDGs 13 (climate actions)?

We have identified different issues to answer these questions and our analysis can contribute to shed light into the potential impact of COVID-19 on SDG 13 in different ways, despite its significant threat for human lives and livelihoods. A key lesson from this crisis is the profound revision of our fundamental assumptions in terms of achieving targets of human well-being and environmental protection (Kassouri and Altintas 2020). The achievement of the SDGs can also support the developing countries in their vulnerability to COVID-19 (Barbier and Burgess 2020). What the discussion also brings forth is an urgent need to revise and restructure the financial system in order to make it more linked to the social issues, like human needs and

human rights, as an interesting study recently highlighted about the human rights implications from climate change (UNEP Inquiry 2016). The risk for finance is that the global recession forced investors to evaluate the rate of return and the risk of investment only. It is essential to promote investments towards the SDGs by reconsidering the optimal portfolio allocation by institutional investors (Yoshino et al. in press). Particularly, SDG 13 can offer useful insights to accelerate the transition to low-carbon economy. Some key lessons can be learned from the pandemic crisis by considering how an increase in investments in climate-resilient infrastructure can accelerate the transition to a lower carbon future and a resilient economy by causing a significant effect on near-term job creation (McKinsey Quarterly 2020). A further development of this study may investigate businesses' and investors' reactions to this emergency by carrying out an empirical analysis on climate actions and policies undertaken by different industries in the private sector, in Europe and in the world. As the European Union argued, "there is no place for business as usual" and "it is now time to chart the path towards a comprehensive recovery plan, with the ultimate objective of building a more resilient, sustainable and fair Europe" (European Commission 2020). This key statement is also valid at the global level and the process of implementation of the SDGs cannot be jeopardize by COVID-19 (Leal Filho et al. 2020).

References

ASVIS (2020) Politiche per fronteggiare la crisi da COVID-19 e realizzare l'Agenda 2030 (Policies to fight the COVID-19 crisis and achieve the Agenda 2030). Retrieved from https://asvis.it/public/asvis2/files/Pubblicazioni/RapportoASviSCovidAgenda2030.pdf

Barbier EB, Burgess JC (2020) Sustainability and development after COVID-19. World Dev 135(2020):105082 in press

Batie SS (2008) Wicked problems and applied economics. Am J Agr Econ 5(2008):1176–1191. https://doi.org/10.1111/j.1467-8276.2008.01202.x

Biehl C, Thomson I (2020) COVID 19 Interconnectedness: addressing the crisis as a 'Good Steward. Retrieved from https://www.global-solutions-initiative.org/wp-content/uploads/2020/04/COVID-19-Being-an-Active-Owner_305_1.pdf

Bieri S, Breu T, Heinimann A, Messerli P (2020) Corona Sustainability Compass. Retrieved from https://www.csc-blog.org/en/virus-has-made-it-clear-future-now

Camillus JC (2008) Strategy as a Wicked Problem. Harvard Bus Rev 1–15

Caplain J (2020) A catalyst for change for bank branches. Will the COVID-19 pandemic change the shape of bank branch networks? Retrieved from https://home.kpmg/xx/en/blogs/home/posts/2020/04/a-catalyst-for-change-for-bank-branches.html

CERES (2020) Addressing climate as a systemic risk: a call to action for U.S. financial regulators. Retrieved from https://www.ceres.org/resources/reports/addressing-climate-systemic-risk

Cernev T, Fenner R (2020) The importance of achieving foundational Sustainable Development Goals in reducing global risk. Futures 115:102492

Deloitte (2020) Understanding the sector impact of COVID-19. Banking & Capital Markets. Retrieved from file:///C:/Users/laraj/Downloads/COVID-19-Impact-Banking-Cap-Market-Sector.pdf

Di Marco M, Baker ML, Daszak P, De Barro P, Eskew EA, Cecile MG, Harwood TD, Herrero M, Hoskins AJ, Johnson E, Karesh WB, Machalaba C, Navarro Garcia J, Paini D, Pirzl R, Stafford

Smith M, Zambrana-Torrelio C, Ferrier S (2020) Opinion: sustainable development must account for pandemic risk. Proc Natl Acad Sci 117(8):3888–3892. https://doi.org/10.1073/pnas.2001655117

Dlugolecki A (ed) (2009) Coping with climate change: risks and opportunities for insurers. The Chartered Insurance Institute (CII), London

Doni F, Gasperini A, Torres Soares JF (2020) SDG13-climate action concise guides to the United Nations sustainable development goals series SDG13-climate action combating climate change and its impacts. Emerald Publishing Limited, UK

EU Technical Expert Group on Sustainable Finance (2019) Report on EU Green Bond Standard [Press release]

EU Technical Expert Group on Sustainable Finance (2020a) Sustainable recovery from the Covid-19 pandemic requires the right tools. Retrieved from https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200426-sustainable-finance-teg-statement-recovery_en.pdf

EU Technical Expert Group on Sustainable Finance (2020b) Technical Report. Retrieved from Brussels

EU Technical Expert Group on Sustainable Finance (n.d.) Climate Benchmarks and Benchmarks' ESG Disclosures. Retrieved from https://ec.europa.eu/info/sites/info/files/business_economy_euro/events/documents/finance-events-190624-presentation-climate-benchmarks_en.pdf

European Commission (2017) Defining "green" in the context of green finance (final report). Retrieved from Brussels

European Commission (2020) A roadmap for recovery: towards a more resilient, sustainable and fair Europe. Retrieved from Brussels: https://www.consilium.europa.eu/media/43384/roadmap-for-recovery-final-21-04-2020.pdf

European Environment Agency (EEA) (2020) Air quality and COVID-19. Retrieved from https://www.eea.europa.eu/themes/air/air-quality-and-covid19

Faioli I, Natolli F (2020) The COVID-19 crisis and the future of the green economy transition, Covid-19 Notes, June 17, 2020, Banca d'Italia Eurosistema. Retrieved from https://www.bancaditalia.it/media/notizie/2020/2020.06.17-FaiellaNatoli_BdI_Covid_notes.pdf

Fink L (2020) A fundamental reshaping of Finance. Retrieved from https://www.blackrock.com/us/individual/larry-fink-ceo-letter

Fleetwood J (2020) Social justice, food loss, and the sustainable development goals in the era of COVID-19. Sustainability 12(12):5027. https://doi.org/10.3390/su12125027

Gallego-Álvarez I, García-Sánchez IM, da Silva Vieira C (2014) Climate change and financial performance in times of crisis. Bus Strategy Environ 23:361–374

Gulluscio C, Puntillo P, Luciani V, Huisingh D (2020) Climate change accounting and reporting: a systematic literature review. Sustainability 12:5455

Hay LJ (n.d.) COVID-19: the global insurance response. Global perspective on the various ways the insurance sector in affected countries have responded to COVID-19. Retrieved from https://home.kpmg/xx/en/home/insights/2020/04/covid-19-global-insurance-response.html

IISD SDG Knowledge Hub (2020) 155 Companies Urge Governments to Enact Net Zero Emissions Recovery from COVID-19. Retrieved from http://sdg.iisd.org/news/155-companies-urge-governments-to-enact-net-zero-emissions-recovery-from-covid-19/

UNEP Finance Initiative (2016) Guide to banking and sustainability, 2nd edn. Retrieved from Geneva

UNEP Inquiry (2016) Human rights and sustainable finance. Exploring the relationship. Retrieved from https://www.ihrb.org/uploads/reports/IHRB_UNEP_Human_Rights_Sustainable_Finance_Feb2016.pdf

Johannsdottir L, Cook D (2019) Systemic risk of maritime-related oil spills viewed from an Arctic and insurance perspective. Ocean Coast Manage 179(1):104853. https://doi.org/10.1016/j.ocecoaman.2019.104853

Jóhannsdóttir L, Wallace J, Jones A (2012) The primary insurance industry's role in managing climate change risks and opportunities. In: Stoner JAF, Wankel C (eds) Managing climate change

business risks and consequenses: leadership for global sustainability. Palgrave Macmillan, New York
Kassouri Y, Altıntaş H (2020) Human well-being versus ecological footprint in MENA countries: a trade-off? J Environ Manage 263:110405. https://doi.org/10.1016/j.jenvman.2020.110405
Kennedy A-M, Kapitan S, Bajaj N, Bakonyi A, Sands S (2017) Uncovering wicked problem's system structure: seeing the forest for the trees. J Soc Market 7(1):51–73. https://doi.org/10.1108/JSOCM-05-2016-0029
Kölschbach J (2020) What are the specific accounting implications for insurers? Retrieved from https://home.kpmg/xx/en/home/insights/2020/03/covid-19-insurers-11a.html
Lachenmeier SM, Dahl E, Juellund K (2020) Minority investments on the rise in the short-run as private companies seek funding to overcome the COVID-19 crisis. The COVID-19 liquidity gap. Retrieved from https://capitalmind.com/minority-equity-as-solution-to-covid-19-liquidity-gap/
Leal Filho W, Brandli LL, Lange Salvia A, Rayman-Bacchus L, Platje J (2020) COVID-19 and the UN sustainable development goals: threat to solidarity or an opportunity? Sustainability 12:5343
Liddy J (2020a) Five key priorities post COVID-19. Anticipate tomorrow, but deliver today. Retrieved from https://home.kpmg/xx/en/blogs/home/posts/2020/06/financial-service-priorities-post-covid-19.html
Liddy J (2020b) Six considerations in dealing with the impact of COVID-19. A view on the impact for financial institutions. Retrieved from https://home.kpmg/xx/en/blogs/home/posts/2020/03/six-considerations-for-financial-institutions-in-dealing-with-the-impact-of-covid-19.html
Lloyds of London, & University of Oxford (2017) Stranded assets: the transition to a low carbon economy: overview for the insurance industry. Retrieved from https://www.lloyds.com/news-and-insight/risk-insight/library/society-and-security/stranded-assets
Menghi J, Abrol B, Savoy E (2020) Opportunities for private equity post-COVID-19. How can private equity firms help reverse the economic damage? Retrieved from https://www2.deloitte.com/us/en/insights/economy/covid-19/private-equity-m-and-a-deal-activity-post-covid-tax-implications.html?id=us:2em:3pa:financial-services:eng:di:050420
Normann R (2001) Reframing business: when the map changes the landscape. Wiley, Chichester
Ohrenstein RI (n.d.) Differentiated diligence post COVID-19. Deal making just got a whole lot more complex for Private Equity players. Retrieved from https://home.kpmg/xx/en/home/insights/2020/05/differentiated-diligence-after-covid-19.html
Pan SL, Zhang S (2020) From fighting COVID-19 pandemic to tackling sustainable development goals: an opportunity for responsible information systems research. Int J Inf Manage 102196 (in press). https://doi.org/10.1016/j.ijinfomgt.2020.102196
Pinner D, Rogers M, Samandari H (2020) Addressing climate change in a post pandemic world. McKinsey Quarterly, April. Retrieved from https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Addressing%20climate%20change%20in%20a%20post%20pandemic%20world/Addressing-climate-change-in-a-post-pandemic-world-v3.pdf
Pizzi S, Rosati F, Venturelli A (2020) The determinants of business contribution to the 2030 Agenda: introducing the SDG reporting score. Bus Strategy Environ 1–18 (in press)
Poddar A, Narula SA, Zutshi A (2019) A study of corporate social responsibility practices of the top Bombay Stock Exchange 500 companies in India and their alignment with the Sustainable Development Goals. Corp Soc Responsib Environ Manag 26:1184–1205
PRI (2020a) How responsible investors should respond to the COVID-19 coronavirus crisis. Retrieved from https://www.unpri.org/covid-19-resources/how-responsible-investors-should-respond-to-the-covid-19-coronavirus-crisis/5627.article
PRI (2020b) A pandemic was near inevitable—so too is climate-driven disruption. Retrieved from https://www.unpri.org/pri-blog/a-pandemic-was-near-inevitable-so-too-is-climate-driven-disruption/5830.article
PRI (2020c) What is the Inevitably Policy response. Retrieved from https://www.unpri.org/inevitable-policy-response/what-is-the-inevitable-policy-response/4787.article
PRI (n.d.) Principles for responsible investment. Retrieved from https://www.unpri.org/

Schramade W (2017) Investing in the UN sustainable development goals: opportunities for companies and investors. J Appl Corp Financ 29:87–99
Schwarcz SL (2008) Systemic risk. Georgetown Law J 97(1):193–249
Standard & Poor's Financial Services LLC (2017) S&P Global Ratings Green Evaluation: Time to turn over a new leaf? Retrieved from New York
Sullivan R, Martindale W, Feller E, Bordon A (2015) Fiduciary duty in the 21st century. Retrieved from http://www.unepfi.org/fileadmin/documents/fiduciary_duty_21st_century.pdf
Swiss Sustainable Finance (n.d.) What is Sustainable Finance. Retrieved from https://www.sustainablefinance.ch/en/what-is-sustainable-finance-_content—1–1055.html
The Investment Integration Project (2020) TIIP and Moving the Market announce project to advance investor action on addressing systemic social risks in the wake of Covid-19. Retrieved from https://www.tiiproject.com/tiip-and-moving-the-market-announce-project-to-advance-investor-action-on-addressing-systemic-social-risks-in-the-wake-of-covid-19/
Thurm R, Baue B, Lugt CVD (2018) Blueprint 5. A Step-By-Step Approach to Organizational Thriveability and System Value Creation. Retrieved from Berlin
UN News (2020) Fall in COVID linked carbon emissions won't halt climate change UN weather agency chief. Retrieved from https://news.un.org/en/story/2020/04/1062332
UNEP (2020) COVID-19: four sustainable development goals that help future-proof global recovery. Retrieved from https://www.unenvironment.org/news-and-stories/story/covid-19-four-sustainable-development-goals-help-future-proof-global
UNGC (2020) Uniting business and governments to recover better. Retrieved from https://ungc-communications-assets.s3.amazonaws.com/docs/publications/recover-better-statement.pdf
United Nations (2015) The Paris Agreement. Retrieved from https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf
United Nations (2019) Sustainable development goal 13. Retrieved from https://sustainabledevelopment.un.org/sdg13
United Nations (2020a) Sustainable development goals. Retrieved from https://www.un.org/sustainabledevelopment/biodiversity/
United Nations (2020b) COVID-19 response. Retrieved from https://www.un.org/en/un-coronavirus-communications-team/calibrating-covid-19-crisis-response-sdgs
United Nations Development Programme (2020) Goal 13: climate action. Retrieved from https://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-13-climate-action.html#:~:text=The%20goal%20aims%20to%20mobilize,also%20to%20the%20other%20SDGs
United Nations Environment Programme (2009) Global green new deal: policy brief. Retrieved from Geneva
Woetzel J, Pinner D, Samandari H, Engel H, Krishnan M, Boland B, Powis C (2020) Climate risk and response: physical hazards and socioeconomic impacts. Retrieved from Washington, DC
UNEP Finance Initiative (n.d.-a) Principles and tools for positive impact finance. Retrieved from https://www.unepfi.org/positive-impact/principles-for-positive-impact-finance/
UNEP Finance Initiative (n.d.-b) Principles for responsible banking. Retrieved from https://www.unepfi.org/banking/bankingprinciples/
UNEP Finance Initiative (n.d.-c) PSI principles for sustainable insurance. Retrieved from https://www.unepfi.org/psi/
WWF Italy (2020) Pandemie, l'effetto boomerang della distruzione degli ecosistemi. Tutelare la salute umana conservando la biodiversità (Pandemics, the boomerang effect of the destruction of ecosystems. Protecting human health by preserving biodiversity). https://d24qi7hsckwe9l.cloudfront.net/downloads/pandemie_e_distruzione_degli_ecosistemi.pdf
Yoshino N, Taghizadeh-Hesary F, Otsuka M (2020) Covid-19 and optimal portfolio selection for investment in sustainable development goals, Finance Research Letters, 101695, in press. Retrieved from https://doi.org/10.1016/j.frl.2020.101695

Federica Doni, PhD is a professor in Associate Professor in Business Administration and Accounting at the Department of Business and Law University of Milano-Bicocca. She is the scientific Co-Director Master's Degree First Level Sustainability in law Finance and Management (SiLFiM). She obtained the national qualification for full professor on the field 13 B/1 Business Administration session 2018. Her main research topics are Intangibles and Intellectual Capital, Business Valuation, Corporate and Integrated Reporting, Sustainability and CSR, Gender issues, Corporate Governance, Climate change and SDGs. Her papers have been published on Journal of Intellectual Capital, Social Responsibility Journal, Sustainability, Sustainability Science, Journal of Environmental Management, Journal of Cleaner Production, Environment, Development and Sustainability. She is the Associate Editor of W. Leal Filho, A. Azul, B., & P. Özuyar (eds.), Climate Action. Encyclopedia of the UN Sustainable Development Goals Springer, Cham. She published a book on SDG 13 in the Concise Guides to the United Nations Sustainable Development Goals, Emerald Publishing (2020). She is a member of the Research Group on Sustainable Development Goals (SDGs) organized by Manchester Metropolitan University, UK, coordinated by Prof. Walter Leal, MMU, UK and a member of the Executive Committee of the Special Interest Group on Corporate Governance della British Accounting and Finance Association (BAFASIGCG) coordinated by Prof. Jill Atkins. She is the Principal Investigator of the European project Jean Monnet Module in the Erasmus Plus Application No 611698-EPP-1-2019-1-IT-EPPJMO-MODULE entitled "Sustainability Disclosure in Corporate Reporting. Improvement and harmonization of best practices in European Union" that has been selected (acceptance rate 20%) for the support by EU of 30.000 euros covering the period 1/09/2019-30/08/2022.

Lara Johannsdottir, MBA, PhD is a professor of environment and natural resources at the University of Iceland (UIce) and a former academic director of the Environment and Natural Resources graduate programme (2019) and a Fulbright Arctic Initiative Scholar (2018–2019). She sits within the Faculty of Business Administration, University of Iceland (UIce). Her research focus is the business sector, in particular the insurance sector, and corporate social responsibility, corporate sustainability, sustainable business models, responsible investments, sustainability reporting, and Arctic business affairs. Her papers have been published by the Journal of Cleaner Production, Environmental Science and Policy, Ecological Indiscators, Renewable and Sustainable Energy Reviews, Polar Record, Local Economy, Ocean & Coastal Management, Sustainability, and others. Book chapters have been published by published by Jon Wiley & sons, Palgrave Macmillan and Springer. Dr. Johannsdottir has 14 years of working experience from the Icelandic insurance sector and was a board member of LSBÍ, an Icelandic occupational pension fund, for 8 years.