LUISS GUIDO CARLI UNIVERSITY

Department of Business & Management – Master's Degree in Corporate Finance

Chair in International Finance

RESPONSIBLE INVESTMENT AND ESG FACTORS: EMPIRICAL AND QUALITATIVE ANALYSIS OF IFC'S METHODOLOGY

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"Only when the last tree has died,

and the las river been poisoned,

and the last fish been caught,

will we realize we cannot eat money."

-Cree Indian Proverb.

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Executive Summary

•*Subject*

The technological development that the world has been experiencing since the last century has certainly contributed to more than positive economic growth, but at what price? More and more enterprises located in both industrialized and developing countries leverage tools and business models that have an extremely negative impact on environmental balances. Climate change, air pollution, seas pollution, and deforestation are just some major consequences caused by human activities. These issues have negative effects not only on the health of Earth and people, but also on the economic system; indeed, natural disasters caused by the global warming, like tropical storms, heavy rains, and earthquakes are positioned at the top of the pyramid of risks as regards corporations and financial projects, since that they have the highest negative economic impact on them. The immoderate exploitation of non-renewable natural resources, the excessive emission of green-house gases, and the production of tons of non-recyclable waste are leading the planet to collapse. Some estimates forecast that from 2030 the world will suffer a macroeconomic damage derived from climate warming that will range from $640.16 billion to $695.27 billion per year and nearly two-thirds of this amount refer to losses that will impact developing countries, which may not be prepared to face such a challenge due to the limited size of their economies[1]. In recent years, the need for a concrete action from financial institutions has taken place in order to reduce this threatening trend. Moreover, the environmental one is not the unique issue on which finance has switched its focus on, since that even more investors look for financing opportunities in agencies or initiatives that work to improve people's living standards and guarantee the respect of human rights both in workplaces and external communities. Unfortunately, although there is the tendency to define the world as an interconnected community where all have the same rights and are equal, it still seems that, as Orwell said, "*some are more equal than others*". Topics like gender inequality, unfair compensation, different treatments for customers and employees, and shortage of safety measures on work are issues, as much as climate-related ones, that remarkably mine companies' profitability because they contribute to the increase in the magnitude of the reputational risk[2].

Year after year, given that stricter requirements on these subjects must be respected even for investment activities, the concept of sustainable finance has gained a relevant importance, driving a radical change in the financial markets worldwide. Sustainable finance comprises any form of investment service that integrates environmental, social, and governance criteria into business decisions to benefit both clients and society. A sustainable investment should guarantee economic returns and prosperity not only immediately, but also in the long-term, by contributing to restore ecosystems and improving the living conditions of people. This

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[1] Baarsch, F., Lissner, T., Schleussner, C.F., Granadillos, J., de Bruin, K., Perrette, M., Schaeffer, M., & Hare, B. (2015, November 25). *Impacts of low aggregate INDCs ambition: Research commissioned by Oxfam*. Oxfam International. https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/rr-impacts-low-aggregate-indcs-ambition-251115-en.pdf

[2] Reputational risk refers to the potential loss resulting from the enterprise's bad reputation. It can be measured as lost revenues, destruction of shareholders' value, and decrease in the company's wealth. This risk is linked to the adopted business model and can be a consequence of moral violations, low quality, and lack of security, safety, and sustainability.

branch of finance, that to date has registered the total volume of $1.17 trillion in debt issued[3], is based upon the concept of sustainability, that is the ability of a system to exist by meeting the needs of the present generation without compromising the ability of future ones to meet their own. Nowadays, most of the new financial instruments that are provided in the international markets are structured to face these requirements, such products like sustainable loans, green bonds, and social insurances, as well as many global initiatives focus on sustainable development issues. The milestone on which most of the modern responsible investment programs are based is the *United Nations Global Compact*, that is a non-binding agreement launched in 2000 and today recognized as the largest corporate sustainability pact (more than 12,000 signatories in over 160 countries to date). It was formed to pursue the mission of encouraging the adoption of sustainable and responsible policies by companies, supporting them to both take strategic decisions that contribute positively to the achievement of broader societal goals and do business by applying the *Ten Principles*. The latter are requirements that should be incorporated by firms in their business models in order to link good financial results and a positive social and environmental impacts. Their aim is to support financial institutions develop responsible investments by addressing in the best way the principal issues related to Human Rights (Principles 1, 2), Labour (Principles 3, 4, 5, 6), Environment (Principles 7, 8, 9), and Anti-Corruption policies (Principle 10). They are structured in the following way[4]:

1. *Businesses should support and respect the protection of internationally proclaimed human rights*.
2. *Businesses should make sure that they are not complicit in human rights abuses*.
3. *Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining*.
4. *Businesses should uphold the elimination of all forms of forced and compulsory labour*.
5. *Businesses should uphold the effective abolition of child labour*.
6. *Businesses should uphold the elimination of discrimination in respect of employment and occupation*.
7. *Businesses should support a precautionary approach to environmental challenges*.
8. *Businesses should undertake initiatives to promote greater environmental responsibility*.
9. *Businesses should encourage the development and diffusion of environmentally friendly technologies*.
10. *Businesses should work against corruption in all forms, including extortion and bribery*.

These ten principles have been a benchmark over the years for the creation of all programs and initiatives structured with the purpose of taking care of environmental, social, and governance criteria for business strategies. To reinforce the action of the Global Compact, the United Nations launched in 2006 the *Principles for Responsible Investment*, a set of six standards to which investors may voluntarily decide to adhere in order

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[3] Henze, V. (2020, January 8). *Sustainable debt sees record issuance at $465 bn in 2019, up 78% from 2018*. BloombergNEF. https://about.bnef.com/blog/sustainable-debt-sees-record-issuance-at-465bn-in-2019-up-78-from-2018/

[4] United Nations Global Compact. (2020). *The Ten Principles of the UN Global Compact*. https://www.unglobalcompact.org/what-is-gc/mission/principles

to adopt and implement sustainable solutions into the economic-financial strategies. The organizations which respect them have the opportunity to perform an active role in the development process of a common financial framework as regards international responsible investments, that is a primary necessity for the expansion of the sustainable finance's channel. Today, these Principles are globally recognized as the principal guidelines that link responsible investment decisions to strong financial results, by contributing at the creation of an economic system that has no negative impacts on the world and its population. The application of the *Principles for Responsible Investment* stands at the baseline of all the different business strategies adopted by responsible investors as well as the most important international agreements and programs implemented in recent years for the expansion of sustainable finance at large scale. Thanks to their correct adoption, both the public entities (e.g. governments and sovereign wealth funds) and especially the private ones (e.g. institutional investors and individual lenders) should be able to structure sustainable financial operations taking a long-term view to address in the best way the long-term liabilities, which can arise not only under the economic shape, but also under the socio-environmental one. All financial subjects are, indeed, called to invest responsibly today to gain sustainable positive results tomorrow, thus making the world a better place to live in.

In this context, a fundamental role is played by multilateral development organizations. They are international financial institutions that obtain their funding from two or more lenders (typically sovereign governments) and spend it on projects for both the social and economic development of low-income countries. Their principal goals are the elimination of poverty and the reduction of economic inequalities. In order to achieve these objectives, they usually lend at low or zero interest rates, even in countries with a high political risk[5]. One of the most important is the World Bank Group. This is a global partnership of five development institutions that work together to find sustainable solutions and green-friendly products with the aim of boosting development worldwide by ending extreme poverty by decreasing the percentage of people living with less than $1.90 per day under the 3% and fostering a shared prosperity by increasing the income growth of the bottom 40%. Its private lending arm, the International Finance Corporation, is globally recognized as a leading firm in the field of sustainable finance. Through its financial products and advisory services, the corporation is actively engaged in providing both environmental-friendly and socially sound business models and financing strategies. Many of its sustainable programs have been adopted by several companies around the world, achieving great results in both the economic and sustainable development fields.

•*Objectives and Methodologies Adopted*

This Master Thesis is an in-depth analysis of the methods internationally adopted by financial organizations to incorporate the environmental, social, and governance criteria into their business models by

[5] Political risk refers to a wide variety of risks that an investment in a foreign country faces. Projects and corporations could experience high losses due to events related to the political instability of the host nation. Most of these, like expropriations, political violence, transfer and convertibility adverse conditions, and breach of contracts by the counterpart have an extremely negative impact on financial results, so they need to be covered by the purchase of political risk insurances.

structuring products and developing strategies that have positive impacts not only from a financial perspective, but also from an environmental and social one. The research question at the basis of this dissertation is how the financial world has evolved during recent years in response to both social and environmental sustainability issues, starting from the launch and spread of the six *Principles for Responsible Investments*. The text will be presented as a systematic review, providing financial data, statistics, official documents, press releases, and personal elaborations. The work required a heavy documentation through international institutions' websites and datasets, textbooks, recorded oral interviews, statistical and financial analyses, official documents, brochures, programs' presentations, and archive holdings. Moreover, in addition to desk research activities, an empirical analysis has been conducted through of different financial institutions and their environmental, social, and governance approaches. The last chapter, indeed, is dedicated to the elaboration of qualitative data collected through a series of semi-structured interviews submitted to three sustainability managers, each representing a different organization (International Finance Corporation, Arpinge, and Rina). These three organizations were selected because, in addition to work together on sustainable projects, they belong the three different institutional categories that commonly represent the subjects involved in sustainable investment processes ("Debt Investor", "Equity Investor", and "Consulting Firm").

The idea on which this Master Thesis was structured is the creation of a document through that the reader can be accompanied along a cognitive path of the sustainable finance subject, a topic of extreme importance that is receiving more and more media attention but which still needs the implementation of a proper educational process at the global level. The research will begin with a description of the macro context in which this topic is commonly placed, analysing the causes, such as the problem of climate change, which in recent years have brought to the forefront the fundamental importance of a correct application of the *Principles for Responsible Investment* by every financial entity, from institutional investors to international organizations, from governments to individual private investors, and so on. In order to provide as complete a picture as possible and help the reader to understand the magnitude of responsible investments into global financial markets today, the initial section will also present the major international agreements signed since 2015, aimed at achieving important sustainability objectives and encourage the incorporation of environmental and social considerations into business models. Another important aspect to understand is how these requirements are really incorporated into practice. Thus, the second chapter will be dedicated to the illustration of the seven strategies for sustainable investing applied by the economic-financial realities at global level, providing indications on the more technical aspects concerning this topic. At this point, the reader will have assimilated both theoretical and practical concepts regarding the application of responsible strategies to better address environmental and social issues through sustainable business models, by which companies can achieve optimal financial results and have a positive impact on society and the planet. The third chapter will explain how the topics analysed in the previous parts are effectively addressed in the real world, presenting the case of the International Finance Corporation and the positive results that it has been able to achieve worldwide by structuring investments oriented not only to significant economic returns, but also to both environment and human rights protection. The last section will analyse how financial professionals deal with investment issues related to environmental, social, and governance factors, by presenting the results of a research process carried out personally through the conduct of three interviews with as many managers, each representing a different type of economic-financial entity commonly involved in the management of sustainable investments. The whole work would also contribute to raise awareness of the importance of a wider global expansion for the sustainable finance.

•*Chapters' Description*

The first chapter both outlines the importance of sustainable finance development, which is needed to address in the best way the problems that affect humanity and the world at large, such as extreme poverty, economic and social inequality, and climate change, and provides a review of the international framework where this topic is inserted today. Starting a path towards the transition of the world of finance to sustainability not only brings benefits in the short-term, but also helps to lay the foundations for a better future for all. The most diffused way to perform initiatives of sustainable finance is through the practice of responsible investing, through which environmental, social, and governance issues are integrated into the decision-making processes and economic-financial analyses. The United Nations launched in 2006 a set of guidelines, called *Principles for Responsible Investment*, to support investors and, more in general, economic entities in developing more sustainable and responsible financial activities through which combine the search for a positive return with the need to avoid negative impacts on both the environment and society. These Principles represent nowadays the most diffused sustainable program within the world of finance, accounting more than 3,000 financial organizations. They encourage institutional investors, such as commercial banks, pension funds, hedge funds, mutual funds, endowment funds, and insurance companies to design their strategic decisions and investments in a more responsible way, thus making easier to take advantage from all the opportunities offered by more transparent and green activities. Many responsible initiatives yet have been implemented by groups of institutional investors, such as the 30% Club (i.e. an initiative whose mission is the promotion of gender diversity on listed enterprises by achieving a minimum of 30% female representation on both boards of directors and senior management teams), the Investor Stewardship Group (i.e. a program whose is the creation of a framework for investors and corporations based on both investment administration and corporate governance principles), and the Sustainability Accounting Standards Board (i.e. an international non-profit organization which sets sustainability standards for financial reporting). The need for a common action by financial institutions to tackle the problems of this century is not only limited to private sector entities, but also includes the revitalization of a Global Partnership between governments around the world, bringing together both industrialized and developing countries. Such action, as well as bringing great social benefits, can direct the world's nations towards significant economic growth. To tackle climate change and to encourage a wider expansion of more sustainable finance, in 2015 member states of the United Nations signed three agreements: the *2030 Agenda for Sustainable Development*, which sets 17 global objectives to foster a sustainable development around the world, the so-called the Sustainable Development Goals, that need to be achieved by 2030 in order to create a better future for all; the *Addis Ababa Action Agenda*, which is an agreement between governments that belongs to the same action plan for development that comprises the *2030 Agenda for Sustainable Development* and while this one defines the targets, the Action Agenda offers a comprehensive set of policy actions that are useful to achieve important results for development; and the *Paris Agreement*, which is recognized as the first comprehensive global action plan on climate and represents an international framework to strengthen the world's response against global warming. The latter issue, indeed, is considered the first cause of climate change, currently recognized as the worst threat that the world is called to face. The disproportionate rise in average temperatures caused by the excessive greenhouse gas emissions, the deforestation, the increase in oceans' acidity, melting glaciers, and the more and more frequent and violent extreme weather events (e.g. storms, heavy rains, earthquakes, heat waves, and floods) are just examples of how humans, through misbehaviour, are destroying the planet (according to the Intergovernmental Panel on Climate Change's *Special Report: Global warming of 1.5 °C*, Earth becomes 0.2 °C hotter every decade due to human activities). Unfortunately, this is not a problem confined to the world's ecosystem, since that these constant environmental changes cause incalculable damage to humanity itself, putting its long-term survival at risk. It has been estimated that there is an extreme urgency to develop common actions to limit the damages caused to Earth and, consequently, to better address the issues arising from climate change. This phenomenon, whose effects are already clearly visible (the world has experienced 19 of the 20 warmest years ever registered during the last two decades), has not only physical consequences (extinction of flora and fauna's species and reduction of the inhabitable lands) but also economic ones (loss of working hours, damages to infrastructure, and reduction in the level of countries' Gross Domestic Product), threatening the world's financial stability. Limiting global warming to the maximum level of 2 °C and trying to stop it below 1.5 °C requires that heat-trapping gas emissions of anthropogenic nature (i.e. originating by human activities) should be brought to zero around 2050. This only can happen if countries worldwide start an in-depth process of sustainable development for the whole industrial system through the implementation of new eco-friendly policies and new emission-free technologies and processes in sectors as energy supply, infrastructure, transportation, and water supply. For this reason, central banks must also play their part in fostering resilience against climate change by developing sustainable international policies and expanding financial markets where green solutions are traded. Thus, this chapter shows how all financial entities (private sector, public sector, and central banks) must adopt responsible strategies, for example through the guidance of the *Principles for Responsible Investment*, thus boosting the expansion of a more sustainable finance, necessary to address all the problems, especially environmental ones, that humanity is facing today.

The second chapter describes the technical dimension of sustainable finance, both presenting the different investment strategies that companies and institutional investors implement with the aim of understanding opportunities and managing better risks correlated to environmental, social, and governance issues and providing a review of the state of the art as regards the performance evaluation techniques and tools for these types of investment. To date more and more economic organizations, banks, funds, and governments perform their financial activities responsibly, trying to avoid harmful consequences for people and the planet while looking for economic returns. This rise was dictated not only by a real need to align the individual interest with that of the collective community in order to limit further environmental and social damages, but also by the growing importance of the *Principles for Responsible Investment* from year to year. With the aim of integrating environmental, social, and governance issues into the financial analysis to structure sustainable and responsible investments, even more stakeholders worldwide develop their investments through seven different business strategies, that are: the exclusion, which is a practice based on negative screening implemented by investors to align the content of their financial portfolios with their personal ethical values; the integration of external environmental and social factors into the decision-making processes, through that financial institutions include information and issues related to external issues into the financial analysis with the aim of avoiding related risks and identify business opportunities; the engagement and voting, which means that through active ownership shareholder can leverage their rights in order to influence the investment behaviour of the whole corporation and implement more responsible practices; the norm-based screening, through which investors are able to identify the companies with the best sustainable performances in order to include in their portfolio only financial assets structured with the aim of creating a positive value in the long-term; the best-in-class, which targets at identifying financial opportunities in those companies which have the best ESG score within a particular industry, sector, or country; the sustainability-themed investing, that is a direct way to financing sustainable assets and initiatives with the aim of linking the research for a positive financial return with the broader goal of addressing the principal needs for both the environment and society; and the impact investing, that is a practice slightly different from that of responsible investing because, if the latter is oriented towards the incorporation of environmental and social issues aiming at avoiding harmful results for humanity and nature, this one is intentionally oriented to leave a remarkable positive impact on society and the environment without the necessity for an economic-financial return. The latter approach, since that it has only come to the forefront during recent years, still needs to be defined in the best possible way. According to the Global Impact Investing Network's *Roadmap for Future of Impact Investing*, there are six categories of actions that should be implemented in the near future to build an efficient impact investing framework, namely the establishment of principles for impact investments, the development of more initiatives aimed at encouraging the intervention of governments and public organizations, the production of new financial products and services for impact strategies, the establishment of key performance indicators and tools useful for really understanding the extent of the social and environmental returns, the implementation of educational and training courses about impact investing practices for financial professionals and business managers, and the development of new policies to regulate global financial markets about this practice. The performance of both responsible and impact investments need to be constantly assessed in order to understand if the implemented strategy is working well or if there are some adjustments that are required to correct the wrong behaviours. To date, there are many evaluation tools and methodologies for these financial activities, such as the scoring systems and performance measurement instruments offered by the international rating agencies (e.g. the *ESG Evaluation* and the *SAM Corporate Sustainability Assessment* of Standard and Poor's Global Rating, the *ESG Risk Ratings* offered by Sustainalytics, the *ESG Ratings Methodology* provided by MSCI, and the State Street Global Advisors' *R-Factor*^{TM}) and the different impact measurement techniques that can be implemented to measure investments' benefits on communities and ecosystems (e.g. expected return methods, approaches based on the theory of change, mission alignment methods, experimental and quasi-experimental methods, and the life cycle impact assessment). Thus, this chapter describes how all financial entities can structure their investments by incorporating environmental, social, and governance factors into decision-making processes and financial analyses by choosing among a wide range of responsible business strategies, and how they should assess the performance of their financial activities during the whole process, from the due diligence phase to the measurement of the final outcomes.

The third chapter provides a demonstration of how the environmental, social, and governance issues are effectively addressed by a real financial institution, presenting the example of the International Finance Corporation, one of the five organizations comprising the World Bank Group, that is most important multilateral financial organization worldwide and whose goal is to end extreme poverty and boost shared prosperity developing investments in line with the Sustainable Development Goals. The International Finance Corporation, which focuses exclusively on the private sector, has a key role in the promotion of the world's economic and social development, especially targeting least-developed countries, where it finances initiatives and projects by using its own capital, mobilizing international financial markets, and providing consultancy and technical assistance to governments and companies. Trying to provide a remarkable impact in emerging markets with the help of its more than 2,000 clients, the International Finance Corporation is globally involved in different industries that have a great potential for a broad sustainable development, offering both direct and indirect investments in projects launched in sectors as agribusiness, infrastructure, services, employment, manufacturing, and financial markets. Strongly motivated to leave its footprint in the battle for the alleviation of poverty, the corporation addresses the financial issues related to these business sectors maintaining a special focus on the hardest social challenges of this century that also have an important economic impact, like climate change and gender inequality, by responsibly developing socio-environmental programs (e.g. the *Creating markets for climate business* and the *Women Entrepreneurs Finance Initiative*). The corporation operates through a wide range of financial products and services, investing in many sustainable projects through direct loans, equity investments, debt securities, risk management products, and offering syndication programs, advisory services, and asset management. Recognized as the leader in sustainable finance, the corporation has developed many programs oriented at the creation of a common global framework for both responsible and impact investments, providing examples of how these types of financial activities should be structured. Among the most important initiatives launched in this regard, those that have been so successful that they are still adopted by many companies worldwide are: the *Performance Standards on Environmental and Social Sustainability*, that are guidelines to facilitate the identification, measurement, management, and mitigation of social and environmental risks associated with financial activities; the *Green and Social Bond Programs*, through which the IFC offers sustainable instruments, structured through responsible standards, to finance eco-friendly projects, climate-smart initiatives, and social interventions; the *Equator Principles*, that constitute a voluntary international framework to enable financial institutions to identify, measure, and continuously monitor ESG risks through the observation of some guidelines for the decision-making process; and the *Operating Principles for Impact Management*, that are useful standards for structuring investment activities oriented at the production of tangible social and environmental returns. In addition to using the key performance indicators set by the *Harmonized Indicators for Private Sector Operations*, the International Finance Corporation has also developed its own system for environmental, social, and governance performance assessment and impact measurement, called *Anticipated Impact Measuring and Monitoring* system, which ensures greater transparency and objectivity in the evaluation of its sustainable investments. This chapter shows how all the topics described in the previous two sections are effectively addressed by a real financial entity, presenting the example of how other institutions should behave to boost a sustainable development and achieve the Sustainable Development Goals by 2030 to make the world a better place to live in.

The last chapter, through a qualitative analysis conducted through semi-structured interviews with three sustainability specialists belonging to as many organizations, shows how all the topics dealt with in the previous sections are concretely addressed by professionals in the field. Indeed, it was considered consistent with the objective of this Master Thesis to conclude the dissertation by trying to make the reader understand what are the most common problems that arise in dealing with environmental, social, and governance factors, presenting the testimonies of professionals who measure themselves with non-financial factors on a daily basis. The final analysis of the research's results reveals clear and precise evidence: we are living in a historical period in which every institution, regardless of the size of the company, its investment style, and the sector in which it operates, finds itself having to integrate in its business model some processes of assessment, management, and measurement of non-financial factors. Every organization, whether more developed or less, is now using part of its economic and human resources to carefully weigh up the environmental, social, and governance risks associated with each financial transaction and not, by exploiting the tools currently available on the market (still not quite sufficient in terms of quantity) or by creating appropriate in-house technologies. This renewed focus on non-quantitative factors, as well as being encouraged by the international agreements developed during recent years, is the result of a growth process of the global awareness of the role that the financial world can perform as regards the preservation of the planet and community. It is finally being realized that the problems we are facing today, without targeted intervention, will certainly increase their magnitude, thus leading to catastrophic consequences. There is, so far, a growing need to implement sustainable investments that actually have a positive impact on the external environment, rather than simply taking care not to cause damage. While there is a clear intention for the international community to tackle the issues related to these dimensions (i.e. to stop the damage caused by serious issues such as climate change, social inequality, or corruption) in the most sustainable way possible, it is also quite clear that we are only at the beginning of this challenge. Many professionals agree, indeed, that it is necessary to establish an analytical framework as cohesive as possible, through which to provide organizations all around the world with predefined standards and instruments useful to effectively manage both the risks and the opportunities related to these issues and translate qualitative factors into quantitative data. It is considered, as suggested by the Sustainable Development Goal 17, that the formation of a Global Partnership led by governments and multinational development organizations (e.g. the World Bank) is the basis from which to achieve positive results in the immediate future. Specifically, there is an absolute need to implement concrete actions at the international level aimed at:

- Starting a process of standardization of rating systems to ensure greater transparency in disclosure and avoid the greenwashing practice or legal claims.
- Ensuring greater flexibility with regard to the requests issued by international agreements by taking into account the geographical context, so that even small realities from less-developed countries can effectively contribute to the fight against the biggest challenges of this century, such as those related to climate change and extreme weather events.
- Structuring an international standardized analytical framework for environmental, social, and governance criteria by amalgamating the existing standards.
- Placing more emphasis on academia to share, through scientific basis, an even greater awareness of the importance of environmental, social, and governance topics today.
- Starting a process for the development of new sustainable technologies and technical tools, especially those useful for impact assessment.

Probably, together with the development of many other remarkable sustainable initiatives, also through the satisfaction of these needs the Sustainable Development Goals will be able to be achieved by time, thus allowing humanity to improve living conditions worldwide.

In conclusion, even if it can be observed that great strides have been made over the last years, especially as regards vocational and non-vocational education in relation to environmental, social, and governance issues, it is clear that there is still a lot of work to be done and definitely no more time to lose. The world must act quickly for humanity’s good and for the good of future generations, otherwise there might not be a future.

CHAPTER I

Principles for Responsible Investment and the Contribution of Financial Institutions to Sustainability

As the first step, the reader is initiated to this cognitive path within the world of sustainable finance through the description of the general theoretical framework in which, to date, this subject is commonly inserted. From the outset, this section aims to show how important it is to correctly apply the Principles for Responsible Investment, which are a set of six fundamental requirements for carrying out all economic-financial activities to both create value in the long-term and positively impact the environment and society as a whole.

Sustainable finance is a highly debated topic nowadays, but it is definitively not a subject born in recent years. The implementation of decision-making processes in order to invest in certain economic activities and driven by choices that focus the attention on non-financial concerns have always been widespread in communities around the world, even if today they are characterized by a much greater influence than in the past. Just think about the practice of philanthropy, which literally means "*love for humanity*", diffused since the times of Ancient Greece, and that in an institutional sense indicates the support for socially useful activities through the provision of resources resulting from the generosity of people and businesses. It is generally believed that any financial activity that is carried out with transparency and whose objective is the pursuit of a sustainable development falls within this topic.

The most diffused way to perform initiatives of sustainable finance is through the practice of responsible investment. Financial institutions develop this kind of financing activity pursuing two principal purposes: they seek to optimize the risk/yield ratio through a correct resource allocation and management, and they also try to create a value-added in the long-term by contributing to the development of a sustainable global financial system, taking care of environmental, social, and governance (ESG) issues in designing the investment's structure. Since that ESG concerns are non-financial information, but they have a remarkable influence on the investment's economic result, it can be difficult to address them in the best possible way without having a great knowledge and expertise as regards these topics. To support financial organizations and institutional investors in structuring functional solutions for incorporating this kind of issues into decision-making processes for financial activities, the United Nations launched in April 2006 the *Principles for Responsible Investment* (PRI), which are a set of six standards that an enterprise may decide to adopt into its business activities to implement sustainable strategies and to contribute to the economic transition towards a more sustainable model. The six Principles, which are not mandatories, can be signed by investment managers[6], asset owners[7], and service providers[8]. To acquire the signatory status, a company must respect two mandatory requirements: it must pay an annual membership fee, that is proportionate to the assets under management and depends on the type of the organization itself, and it must develop every year a public report about its responsible investment decisions that is considered as an evaluation tool to monitor the ESG integration and sustainable investments' progresses. The firms that sign the PRI commit to the following requirements[9]:

1. *We will incorporate ESG issues into investment analysis and decision-making processes*.
2. *We will be active owners and incorporate ESG issues into our ownership policies and practices*.
3. *We will seek appropriate disclosure on ESG issues by the entities in which we invest*.
4. *We will promote acceptance and implementation of the Principles within the investment industry*.
5. *We will work together to enhance our effectiveness in implementing the Principles*.
6. *We will each report on our activities and progress towards implementing the Principles*.

When the United Nations launched this initiative 14 years ago on the New York Stock Exchange, less than 100 signatories were accounted, while today the PRI have been officially adopted by more than 3,000 financial organizations. Nowadays, they are recognized as the most important rules to be applied as regards the field of responsible investment, and their adoption is strongly recommended to address in the best way as possible ESG issues in decision-making processes and active ownership. They are of fundamental importance in the development of a more sustainable economy.

The first chapter of this Master Thesis is an overview of the theoretical framework in which, to date, the subject of sustainable finance is commonly inserted. Through this section, the reader can understand how strong the magnitude of the analysed topic is, since that there will be provided information about both the main risks and consequences that ESG problems, like climate change, can cause and the principal international agreements that have been signed to address them by pursuing predetermined broad objectives, which can only be achieved through a process of transition in the world of finance towards an increasing focus on negative environmental and social externalities. It is considered necessary to stress that it was decided to refer

[6] Investment managers are people or organizations that manage investment funds following the parameters, objectives, and directions given by their clients. They handle all the activities linked to the investment, from the business planning to the portfolio management. Their fees are typically based on a percentage of client's assets under management. Advisors and stockbrokers are classic types of investment managers.

[7] Asset owners are people or organizations that represent the holder of an asset and take advantage of all the benefits and rights of the ownership. Examples of this type of institutional investors are pension funds, foundations, endowments, insurance companies, and sovereign wealth funds.

[8] Service providers are people or organizations that offer their products and services to other institutional investors. The ones who are signatories of the *Principles for Responsible Investment* have a fundamental importance in the development of sustainable strategies because they help their clients to address environmental, social, and governance issues by providing them responsible solutions.

[9] Principles for Responsible Investment. (2019). *Principles for Responsible Investment: An investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact*. https://www.unpri.org/download?ac=6303

to the PRI at the very beginning of this dissertation as they are the milestone on the road to develop the framework for a sustainable finance that this Master Thesis intends to investigate.

The first paragraph describes how institutional investors have reacted to the introduction of the PRI. In this section, there will be scrutinized the main different types of this kind of entity, analysing their responsibilities and the benefits that they can gain through a correct inclusion of ESG criteria into their decision-making processes. There will be provided information and data about the results that these kinds of financial institutions have been able to achieve thanks to the development of responsible investments and sustainable business models.

In the second paragraph, there will be analysed all the main international agreements signed since 2015 to encourage the development of sustainable finance with the aim of tackling climate change and social inequalities on the one hand and fostering a sustainable development on the other. The programs presented in this section are of a fundamental relevance for fostering a global sustainable development, since that they have set goals that need to be achieved with the contribution of every organization.

The last two paragraphs of this first chapter will focus on the topic of climate change, which is actually recognized as the most threatening problem that the world is experiencing nowadays and which, if not addressed immediately and with everyone's contribution, can lead to more than catastrophic consequences.

In the third paragraph, there will be provided data and forecasts that will help the reader better understand how dangerous this issue is for the human survival and why there is an extreme need to immediately implement actions aimed at limiting other environmental damages. This first part of the last section of this chapter will present the problem of climate change socially standpoint by presenting the causes, evidence, and possible effects as regards this topic.

The fourth paragraph will also present the consequences of global warming and extreme weather events, but this time from a financial point of view. This last section exposes, indeed, the main economic-financial risks related to these wicked problems, presenting a review of the work done to date by the central banks in order to address the threat of climate change.

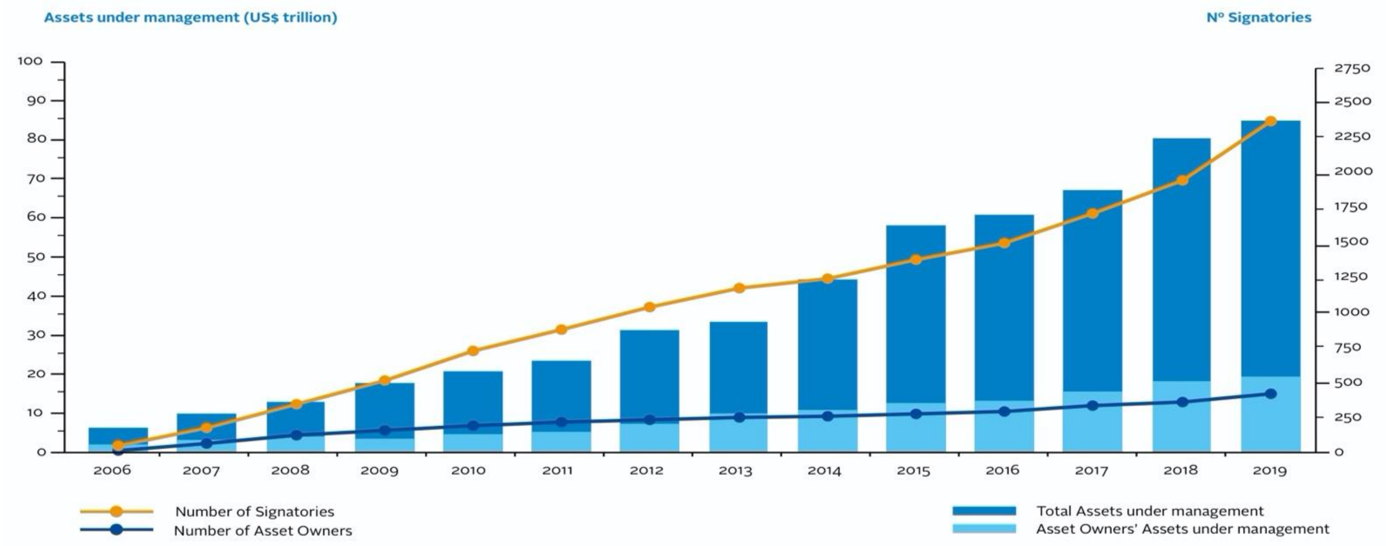
1.1 The Role of Institutional Investors in the Development of Sustainable Finance

Sustainability is no longer a subject that sets apart from the world of finance. Year after year, the need for a correct inclusion of ESG criteria into investment considerations is rapidly increasing worldwide and many corporations work closely with those financial organizations and institutional investors that are signatories of the PRI. Since their launch in 2006, indeed, the global coverage of the Principles has grown consistently, as shown in Graph 1.1, accounting nearly $90 trillion of assets under management (i.e. the total market value of the investments that an organization manages in the interest of its clients) so far[10].

[10] Saa, L. (2020, January 30). *PRI milestone: 500 asset owner members*. Top1000Funds. https://www.top1000funds.com/2020/01/pri-milestone-500-asset-owner-members/

•Graph 1.1.

PRI's signatories and AUM since their launch



Note. Retrieved from https://www.unpri.org/download?ac=6303. Copyright (2020) by Principles for Responsible Investment.

The PRI, in order to be attractive for many enterprises as possible and encourage a wider expansion of the channel of responsible investment, are designed to be in line with different types of financial institutions that operate within a traditional fiduciary context. They have contributed to the establishment of an international collaboration climate between investors, which today work together to develop a sustainable global financial system that has the potential to benefit both the present and future generations by creating value even in the long-term.

Most PRI signatories are classified as institutional investors. They are financial organizations or companies which, thanks to their expertise and knowledge of international financial markets, invest money on behalf of third persons or firms. Institutional investors have a significant influence on the global economy because they are often recognized as market makers (i.e. legal entities that can move capital markets by trading large volumes of investment instruments, creating supply and demand imbalances which are translated into price changes). Their business is to buy, sell, and manage all kinds of investment assets like equity, debt, bonds, derivatives, real properties, and commercial papers in the best interest of their clients. The principal types of firms for this category are: commercial banks, pension funds, hedge funds, mutual funds, endowment funds, and insurance companies.

Commercial banks are financial corporations that offer banking services and products to people and businesses. Regulated by central banks (See Ch. 1, para. 1.4), they provide deposits, investment services, loans, and credit to their clients to help them both gain profits and protect their savings. Their principal functions are: accept deposits from their customers and return them whenever they request it or on a predetermined data, deliver loans typically structured with fixed terms and interest rates, and perform agency functions for the benefit of their clients. Their compensation is in the form of interests over the product or service provided. The more than positive response of the banking sector to responsible investment in recent years has led the United Nations to create an ad-hoc set of sustainable principles for this category of financial institution, created on the PRI strand, called *Principles for Responsible Banking*. Launched in September 2019, these six principles have been signed by 130 banks around the world, which have committed $47 trillion in assets to develop sustainable actions to pursue the Sustainable Development Goals (See Ch. 1, para. 1.2) and combat climate change[11].

Pension funds are asset owners, managed by professional fund managers and sponsored by companies, that collect large amounts of money from people during their working lives and invest them in capital markets and third listed and private enterprises to produce returns that will be added to the client's pension. A pension fund, which so offers income for employees in retirement, can take the form of a *Defined Benefit Plan* or a *Defined Contribution Plan*. The first provides payments guaranteed by employers without taking the investment results into account, while the second provides pay-outs based only on the investment performance. The main goal of this type of institutional investors is to be sure that all employees will be paid anyway after the end of their careers. They are usually characterized by a trust arrangement, which allows them to control and administer the investment operations in the interests of their members. This kind of funds can be classified as open or closed and as public or private. Open pension funds work for more than one category of employees, while closed ones support only certain types of workers. Public pension funds are regulated under public sector laws, while private ones are regulated under private sector laws. They own the largest number of assets under management in global markets, accounting $46.7 trillion to date, a statistic that is expected to rapidly grow next years[12].

Hedge funds are alternative investment vehicles that collect pooled money from certain accredited investors (qualified investors with an annual income that exceeds $200,000 in the last two years or have total owned assets valued more than $1 million) and use this to generate high returns through speculative strategies and sophisticated techniques. They invest in liquid assets and offer to their members the possibility to withdraw capital periodically based on the investment performance. There is no standard definition for this kind of institutional investors, since that each hedge fund is created to gain profits from different market opportunities and can decide its own strategy, business model, policy, and expected return profile without being aligned with any other fund. They are commonly recognized as high risk and high return private investment limited partnerships and they face less regulation than the other types of funds. The hedge fund industry had assets under management accounted for $3.14 trillion last year, having over doubled their market size during this decade[13].

Mutual funds are open-end funds (i.e. an investment vehicle that offers its members the possibility to redeem their shares whenever they want to) formed by pooled money raised from multiple investors, mainly small

[11] UNEP Finance Initiative. (2019, September 19). *130 banks holding USD 47 trillion in assets commit to climate action and sustainability*. https://www.unepfi.org/news/industries/banking/130-banks-holding-usd-47-trillion-in-assets-commit-to-climate-action-and-sustainability/

[12] Rolandi, A. (2020, February 11). *Global pension fund assets surge in 2019*. Funds Europe. https://www.funds-europe.com/news/global-pension-fund-assets-surge-in-2019

[13] Barclay Hedge. (2020). *Hedge fund industry*. https://www.barclayhedge.com/solutions/assets-under-management/hedge-fund-assets-under-management/hedge-fund-industry

enterprises and individuals. They are controlled and organized by professional managers who use the fund's assets for investing in a wide range of financial securities in order to create portfolios of different instruments which have the potential to produce profits for members and reduce risks thanks to a large diversification. There are two main advantages that customers can get from investing in mutual funds: they yearly earn income from both dividends and interests generated from the portfolio's securities and, in addition, they receive capital gains if some fund's financial instruments are sold. Each mutual fund is classified and regulated as regards the kind of security in which it invests. In 2019, the mutual fund industry accounted for nearly $19.93 billion in assets under management[14].

Endowment funds are investment portfolios established by foundations that pool donor financing in a single business vehicle with the aim of making capital resources available for third organizations. They are typically regulated as non-profit corporations, often managed by academic institutions, religious organizations, cultural foundations, and service enterprises. This kind of institutional investors is based on the so-called donor intent, that is a philanthropic practice by which some socially sound goals are set, and their achievement is pursued by using grants. Each endowment fund is based on its own investment, withdrawal, and usage policies: the first indicates what types of investments can be made by managers, the second establishes the total amount that can be borrowed from the fund by a single customer, and the last states what are the effective purposes for which foundations can take out funds. Endowment funds globally manage large amounts of money, and the biggest ones can account for about $50 billion in assets under management.

Insurance companies are institutional investors that sell insurances and reinvest the premiums paid by their clients to make a profit. They are often classified as corporations that sell life, property, or health insurance. These companies often invest in low-risk assets, providing granted returns. Their role in capital markets is of fundamental importance, since that insurance companies are one of the most present participants in international financial trades. The insurance sector is gaining importance year after year, as these instruments provide many advantages to their owners, as well as insurance companies manage nearly $16 trillion in global investment assets so far[15].

The principal issue that customers can experience when they invest funds in one of the institutions mentioned above is that the professionals who manage them take in place acts in ways that are not beneficial for their interests. This inconvenient, that is defined as the *Agency Problem*, can arise when there are important information asymmetries in financial markets and so the manager's potential return from detrimental actions can be more substantial than the commission paid by the asset owner. This issue is even more complicated to be addressed if ESG factors need to be incorporated into management decisions because the vision about this topic can be not aligned between the parties involved. To strongly limit the possibility that this problem occurs, institutional investors are called upon to respect a series of fiduciary duties imposed by local legislation, acting

[14] Cussen, M. P. (2019, October 8). *How big is the mutual fund industry?* MutualFunds. https://mutualfunds.com/education/how-big-is-the-mutual-fund-industry/

[15] BlackRock. (2019). *Re-engineering for resilience: Global insurance report 2019*. https://www.blackrock.com/institutions/en-us/literature/whitepaper/global-insurance-report-2019.pdf

as honestly as possible. While these principles can be different from country to country, there are four main duties that need to be respected in every jurisdiction: the *Duty of Prudence*, the *Duty of Loyalty*, the *Duty of Impartiality*, and the *Duty of Obedience*[16].

The *Duty of Prudence* implicates that the institutional investor should manage the assets of its clients with reasonable care, following the *Prudent Person Rule*, which states that the fiduciary must act with the same skill and care that a person of ordinary prudence and intelligence would use in conducting any investment. The trustee should take decisions that will benefit the asset owner, without incurring costs, risks, and objectives that are deemed inappropriate. Since that a prudent investor may consider all factors that have the potential of influencing the risk and return of a financial product, this fiduciary duty encompasses that ESG criteria should always be integrated in the definition of the right investment strategy.

The *Duty of Loyalty* states that the institutional investor must consider only the interests of the beneficiary in making strategic decisions. The fiduciary cannot take in places acts for its personal or third part's interest, excepts as otherwise provided in the terms of the representative mandate. The respect of this duty is necessary to avoid conflict of interest.

The *Duty of Impartiality* implicates that the trustee must act without preferences as regards the different beneficiaries that an investment may have. This duty encompasses that institutional investors should manage financial products with the purpose of creating value for both current and future generations, which implies that ESG factors need to be considered as financial ones.

The *Duty of Obedience* simply indicates that institutional investors must respect the authority of their clients, following all the terms established by them. The trustee must comply with all requests, directions, and instructions provided by the asset owner.

The wide adoption of the PRI by institutional investors (1700 investment managers worldwide are signatories[17]) means that there is a real consciousness that ESG problems may affect the profitability of investments and financial activities. The focus of managerial practices has shifted on these kinds of external factors as well as institutional investors have recognized the interconnection between their fiduciary duties and the application of the Principles. Implementing a sustainability management and reporting framework can offer many advantages to both the agents and their clients, helping them create a value-added through the assessment of non-financial risks and opportunities. The value creation linked to sustainable finance actions can be translated not only with the achievement of extra returns, but also with the development of a wider information flow between organizations and investors, the diffusion of a better understanding for ESG issues at large, the enhancement of companies' reputation, and the contribution to broader sustainable objectives. There can be individuated four main advantages that investment organizations can gain if they correctly

[16] Johnson, K. L. (2014, February). *IISD report: Introduction to institutional investor fiduciary duties*. International Institute for Sustainable Development. https://www.iisd.org/sites/default/files/publications/fiduciary_duties_en.pdf
[17] Hill, J. (2020). *Environmental, social, and governance (ESG) investing: A balanced analysis of the theory and practice of a sustainable portfolio*. Elsevier.

manage ESG concerns and report how they address them, as summarized in Table 1.1, which shows also the different opportunities that a sustainable business model offers to stakeholders.

•**Table 1.1.**

Matrix of sustainability management and reporting drivers

STAKEHOLDERS→ **↓BENEFITS**	**Suppliers**	**Employees**	**Clients and Shareholders**	**Society and Environment**
Revenue Growth	Opportunities for new business developments	Improve competitiveness and businesses	New products and services	Boost local economic growth
Risk Management	Reduce risk of supply chain reputational damage	Improve compliance and transparency	Manage environmental risk	Manage reputational risks
Access To Capital	-	-	Improve access to finance	Meet stock exchange listing requirements
Cost Savings And Efficiency	Build better relationships	Reduce waste and motivate workforce	Build better relationships	-

Note. Adapted from https://www.unepfi.org/fileadmin/documents/smr_benefits_dec2006_01.pdf. Copyright (2006) by UNEP Finance Initiative.

Thus, the adoption of sustainable strategies can help an institutional investor within both international and domestic contexts in: drive revenue growth by boosting its reputation, market share, and competitiveness; improve risk management by reducing environmental, credit, and reputational risks; improve access to both public and private sectors by managing regulatory compliance developments in corporate governance; and make cost savings and efficiency improvements by building a better relationship with its suppliers and customers.

The global expansion of the PRI should not just be seen as a way to improve financial and operational performances, but as well as a response for the need of an institutional investors' collective action that aims at the development and expansion of the responsible investment channel. This alliance can take place only if these organizations pool their theoretical and practical expertise to boost their influence in international financial markets to promote the diffusion of ESG practices worldwide. Doing so, they will start a process by which they can improve three aspects that are of fundamental importance for the developmental plan's success: their power, the legitimacy of their actions, and the urgency of the latter[18].

The concept of power refers to the method whereby institutional investors utilize their competitive positions to influence the market. There are three sources of financial organization's power[19]: coercive power, utilitarian power, and normative power. The first is based on the threat of physical sanction, and in the context of the collective action can be seen as the use of governance powers by which institutional investors can exercise their voting rights in the targeted companies' shareholders assembly to ask for the adoption of PRI or, broadly

[18] Principles for Responsible Investment. (2015, February 12). *Enabling institutional investors' collective action: The role of PRI.* https://www.unpri.org/academic-research/enabling-institutional-investors-collective-action-the-role-of-pri/3095.article

[19] Etzioni, A. (1964). *Modern organizations*. Englewood Cliffs, N.J., & Prentice-Hall.

talking, business models that take care of ESG factors. The second is based on the collection of material resources. Investment companies are called to improve this power typology by developing new ecological instruments and socially sound initiatives and sharing them with other organizations to create a collaboration climate. The last type of power is based on all the resources that can be used by enterprises to define their ethical dimension. Institutional investors can use this power to take in place actions that denounce the missed adoption of moral strategies, damaging so the reputation of those enterprises which do not incorporate ESG concerns in their business models.

The concept of legitimacy refers to the general perception that the business actions implemented by a firm are appropriate within a social dimension, being in line with all the norms and requirements that regulate it. In the context of the collective action, institutional investors develop sustainable and responsible products and services according to the ethical dimension in which are commonly inserted ESG topics.

The concept of urgency refers to the degree of attention that is requested by shareholders as regards the attention on a specific issue. Typically, business use to conduct their works in relation to their own or their clients' interest, but in the field of sustainable finance, the urgency linked to the need for a fast expansion of responsible actions and for the safeguard of the planet and people comes first.

The response of companies to the need to form an alliance to align their goals and have more power in the global promotion of more sustainable and responsible finance has not been long in coming. More and more institutional investors are supporters or founding members of many initiatives that have in common the attention about ESG concerns. Some of the most important sustainable groups created by investors for investors are the 30% Club, the Investor Stewardship Group, and the Sustainability Accounting Standards Board.

The 30% Club is an initiative launched in London in 2016 and which now is present in 14 countries worldwide. It was founded with the mission of promoting gender diversity on listed enterprises by achieving a minimum of 30% female representation on both boards of directors and senior management teams. Since this objective has been reached in some countries so far, the new goal of the initiative is to boost diversity at large, so including people of different ethnicity, sexual orientation, religion, and so on. Diversity has the potential for improving a firm's financial performances by attracting talents, enhance reputation, and encouraging a better leadership and inclusion climate. Investors that join this group commit to work together to develop actions that encourage Chairs and Chief Executive Officers to hire more women and improve diversity at the managerial level, give more visibility to the campaign by using social media, and achieve the 30% target. To date, there is still a lot of work to be done to achieve a gender balance within the world of finance, but great results have already been obtained thanks to the institutional investors that took part in this initiative, such as in the United Kingdom and in Australia, where respectively 32.3% and 30% of the boards of directors of more than 500 listed companies are represented by women[20].

[20] 30% Club. (2020). *Home*. https://30percentclub.org/

The Investor Stewardship Group is a program launched in the United States in 2017. The goal of this initiative is to create a framework for investors and corporations based on both investment administration and corporate governance principles. These principles are, as well the PRI, not prescriptive and represent only guidelines for companies which have the possibility to perform good governance practices in the way that best fit them. Today more than 60 of the largest U.S. listed institutional investors are members of this group, accounting for $31 trillion in financial assets[21].

The Sustainability Accounting Standard Board is an international non-profit organization founded in San Francisco in 2011 which sets sustainability standards for financial reporting. This initiative is one of the most relevant for the inclusion of ESG topics into business decisions, since that its standards are now being even more applied alongside those set by the Financial Accounting Standards Board[22]. The principal goal of this alliance is to develop different accounting standards for different industries, helping investors better compare companies within a specific sector. It established a set of 77 reporting standards, divided by industries and covering 11 business sectors. Its standards are adopted by institutional investors from more than 200 countries all around the world, accounting over than $48 trillion of assets under management[23].

Sustainable finance, thanks to the adoption of the PRI by even more financial entities and the collaborative programs implemented by investment companies, is continuing to climb globally. Responsible investments strongly increased their market size during recent years. According to the *2018 Global Sustainable Investment Review*[24] (all data mentioned in this final part of the paragraph are based on this document), which is a report created by the Global Sustainable Investment Alliance[25], economic-financial organizations leveraged $30.68 trillion in sustainable investing assets, as shown in Figure 1.1.

•Figure 1.1.

Snapshot of global sustainable investing assets, 2016-2018

Region	2016	2018
Europe	$ 12,040	$ 14,075
United States	$ 8,723	$ 11,995
Japan	$ 474	$ 2,180
Canada	$ 1,086	$ 1,699
Australia/New Zealand	$ 516	$ 734
TOTAL	**$ 22,838**	**$ 30,683**

Note: Asset values are expressed in billions of US dollars. All 2016 assets are converted to US dollars at the exchange rates as of year-end 2015. All 2018 assets are converted to US dollars at the exchange rates at the time of reporting.

Note. Retrieved from http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf. Copyright (2019) by Global Sustainable Investment Alliance.

[21] Investor Stewardship Group. (2020). *About ISG*. https://isgframework.org/

[22] The Financial Accounting Standards Board is an independent non-profit organization founded in 1972 which established the currently used standards for financial reporting by companies within the United States.

[23] Sustainability Accounting Standards Board. (2020). *Home*. https://www.sasb.org/

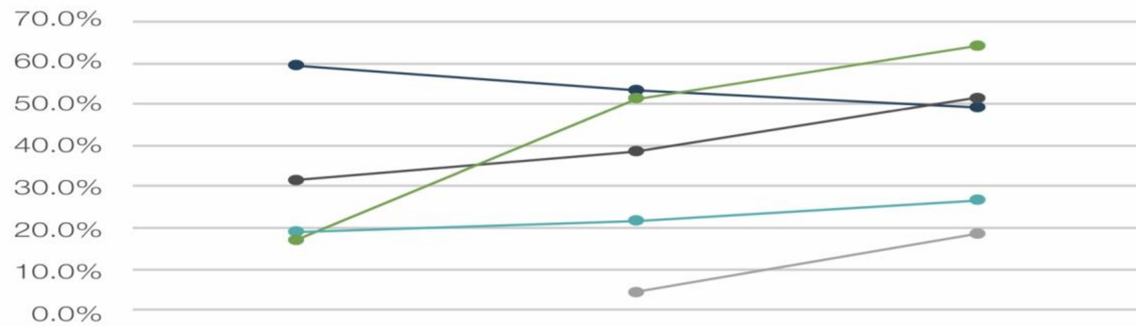
[24] Global Sustainable Investment Alliance. (2019). *2018 Global sustainable investment review*. http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf

[25] The Global Sustainable Investment Alliance is an international collaboration between responsible investment organizations. Its mission is to expand and improve the channel of sustainable finance.

These data reflect how much ESG topics have gained importance day by day, having registered a growth of 34% in the volume of responsible investments over just two years. Within the five major financial markets of the world, Europe is the leader in this field, holding the highest portion of sustainable assets (46%), followed by the United States (39%), Japan (7%), Canada (6%), and Australia (2%). Institutional investors are nowadays managing more and more products structured to address in the best way ESG issues, as shown in Figure 1.2, which compares the volume of sustainable assets under management with the volume of the total assets under management in a time horizon of four years.

•Figure 1.2.

Proportion of sustainable investing relative to total managed assets, 2014-2018



	2014	2016	2018
Europe	58.8%	52.6%	48.8%
United States	17.9%	21.6%	25.7%
Canada	31.3%	37.8%	50.6%
Australia/New Zealand	16.6%	50.6%	63.2%
Japan		3.4%	18.3%

Note: In 2014, data for Japan was combined with the rest of Asia, so this information is not available.

Note. Retrieved from http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf. Copyright (2019) by Global Sustainable Investment Alliance.

These activities are correlated with different classes of financial instruments, such investments in public equity (51%), fixed income (36%), hedge funds, cash vehicles, commodities, and infrastructure (7%), properties (3%), and private equity (3%).

Through a wider utilization of responsible strategies and management of products structured to address ESG issues that are nowadays at the mainstream of business concerns, institutional investors are able to play their role of promoters for the development of a more sustainable finance, providing long-term opportunities to reduce external risks and increasing benefits for both shareholders and the world at large. Indeed, with a huge amount of capital in assets under management ($74.3 trillion in 2018[26]), institutional investors have a huge potential to catalyse money and resources to develop more and more responsible and impact investments by the private sector, thus promoting the transition towards a more sustainable financial world through which to combine the search for economic return with social and environmental dimensions. The exponential growth

[26] Fages, R., Hereida, L., Carrubba, J., Eyal, O., Frankle, D., Kurihara, K., Macé, B., Palmisani, E., Pardasani, N., Schulte, T., Sheridan, B., & Xu, Q. (2019, July 31). *Global asset management 2019: Will these '20s roar?* Boston Consulting Group. https://www.bcg.com/it-it/publications/2019/global-asset-management-will-these-20s-roar.aspx

of institutional investors observed in recent years is, therefore, the result of an ideological evolution that has led to the designation of these financial entities as the main vehicle through which the greatest environmental and social challenges of the present can best be tackled using financial operations. Corporations with trillions under management have become too important to let the world collapse, and this is why large asset owners, such as pension funds (they actually hold a great number of assets under management on a global scale, just observe the data related to pension funds in the area of the Organization for Economic Co-operation and Development[27] alone for the past year, when they held a number of assets comparable to 69% of the total GDP of the whole zone[28]), should take a long-term view to address in the best way the long-term liabilities that can arise not only under the economic shape, but also under the socio-environmental one. To conclude, they are called to invest responsibly today to gain sustainable positive results tomorrow.

1.2 International Framework: What has Been Done at the Institutional Level to Reinforce the Impact of PRI?

When the PRI were launched in 2006, the importance of their correct application into business models, the specific weight that ESG problems have in relation to financial strategies, and the correlated potential of responsible investments were not fully understood. After almost a decade of life spent concealed and without having really achieved any noteworthy results, 2015 was the turning point that started the limelight of the Principles in international financial markets. Since that year, governments all over the world have signed several agreements and set several objectives aimed at developing a sustainable and responsible economic system. A cleaner finance with a greater focus on social and environmental issues is commonly identified as how the main challenges the world is facing this century can be tackled nowadays. The different risks associated with climate change, environmental deterioration, extreme poverty which is still too widespread in the world, and both social and economic inequality can very quickly result in catastrophic consequences for both humanity and the planet at large. Among the various global agreements signed in recent years, the most relevant are the *2030 Agenda for Sustainable Development*, the *Addis Ababa Action Agenda*, and the *Paris Agreement*.

a. 2030 Agenda for Sustainable Development

On 25th September 2015, all the 193 member governments of the United Nations signed an action plan for people and the planet called the *2030 Agenda for Sustainable Development*[29], which is a collection of 17

[27] The Organization for Economic Co-operation and Development is an intergovernmental financial institution founded in 1961 and composed of 37 member states, whose objective is the promotion of economic development worldwide through the channel of international trade.
[28] Willis Towers Watson. (2020). *Global pension assets study-2020*. https://www.thinkingaheadinstitute.org/en/Library/Public/Research-and-Ideas/2020/01/Global-Pension-Asset-Study-2020
[29] United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. https://sustainabledevelopment.un.org/content/documents/21252030 Agenda for Sustainable Development web.pdf

global goals that need to be achieved by 2030 in order to create a better future for all. These broad objectives, called Sustainable Development Goals (SDGs), are associated with a list of 169 targets and 232 indicators that help states measuring the sustainable performances and the progress that have been performed for the fulfilment of each goal in their countries. SDGs are closely interconnected and have equal priority and importance. They must be addressed with the contribution of each single entity, even less-developed countries, to establish the foundation for sustainable development worldwide. The Goals are directly derived from the Millennium Development Goals (See Anx. I for more details) and should be seen as another opportunity for achieving sustainable results in the most responsible way as possible, without continuing to destroy our planet and consequentially disrespecting human rights. The implementation of SDGs strictly depends on a correct teamwork between all the actors involved in the process, and for this reason the 2030 Agenda adopted the Technology Facilitation Mechanism launched by the *Addis Ababa Action Agenda*, which is a tool used to facilitate the sharing of information between stakeholders. The rationale at the baseline of the 2030 Agenda is, indeed, that the revitalization of a Global Partnership (SDG 17) is necessary to tackle the main issues interlinked with all the different SDGs. Since that the share of information is at the core of the collaboration between countries, each state has the responsibility to follow-up and review in the most transparent and accurate way as possible the progress made in addressing the Goals by using the set of global indicators provided by the 2030 Agenda. The SDGs, whose official icons designed by the United Nations are represented in Figure 1.3, are the following (all information and data about the results achieved for each Goal are retrieved from *The Sustainable Development Goals Report 2019*[30]):

•Figure 1.3.

United Nations Sustainable Development Goals

Note. Retrieved by https://sustainabledevelopment.un.org/?menu=1300. Copyright (2020) by United Nations.

[30] United Nations. (2019). *The sustainable development goals report 2019*. https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf

1. *End poverty in all its forms everywhere*.

Extreme poverty, currently measured as people living on less than $1.90 per day, afflicts the 8.6% of the world today, being more concentrated between rural populations from low-income countries (Sub-Saharan Africa accounts for more than the half of poor people on the planet), which are also the most affected by natural disasters. Globally, there are billions of men, women, and especially children that lack of income, resources, basic services as healthcare and education, and social protection (in 2018 55% of the world's population had no possibility to access social protection programs). The United Nations aims at supporting development strategies to end extreme poverty by 2030, but projections suggest that this rate will remain at the 6% level at that time if there will not be significant changes in governments' policies during this decade.

2. *End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*.

Differently to the poverty one, hunger rate is increasing. About 821 million people worldwide are undernourished (two-thirds of them are living in developing countries from Sub-Saharan Africa and Southern Asia). Hunger and malnutrition are the causes of 45% of deaths for children under five years of age. By 2030, the United Nations aims at ending hunger and offer access to safe nutrition for everyone, by doubling the agricultural production through the support for sustainable initiatives in this sector. To date, this goal seems unlikely to be achieved by that time.

3. *Ensure healthy lives and promote well-being for all at all ages*.

Despite great results in the healthcare sector have been achieved so far (tuberculosis incident rate declined by 21%, measles death dropped by 80%, and both maternal and under five years child mortality rates declined significantly), there is much more to be done. The United Nations aims at enhancing the living standards of everyone by offering access to clean water, vaccines, good sanitation systems, and medicines. The implementation of this Goal is driven by both sustainable initiatives whose core business is the improvement of healthcare and sanitation services and research and development activities for medical remedies against HIV, malaria, tuberculosis, and other communicable and non-communicable diseases.

4. *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*.

Today one in five children are not enrolled in primary school and more than half of the total number of children out of school (617 million to date) are boys and especially girls from least-developed regions. The United Nations aims at both ensuring that every single child worldwide has access to schools characterized by trained teachers and adequate facilities (more than half of Sub-Saharan schools lack drinking water and Internet connection) and promoting equal possibilities for women and men to attend tertiary education.

5. *Achieve gender equality and empower all women and girls*.

The main problems that affect people, such as lack of education, no job, and economic inequality, exercise a major influence on women. This trend, which is a direct consequence of gender discrimination, has a direct effect on economy and development at large, producing great financial and human losses. To date, 143 countries have guaranteed gender equality including topic-related laws into their Constitutions as of the launch of the 2030 Agenda. To end all forms of violence and discrimination on females by 2030, the United Nations promotes sustainable actions whose core business is the empowerment of girls and the development of new policies and norms that ensure equal rights for women and men in every sector.

6. *Ensure availability and sustainable management of water and sanitation for all*.

Worldwide, millions of people lack access to drinking water and nearly two in five people do not have a handwashing facility with water and soap in their home. The demand for water is increasing and, to date, half of the world's population is experiencing water scarcity. Despite the level of people using clean water increased by 71% in the global population, countries should improve their water management policies to avoid an increasing scarcity of the resource in the near future (forecasts suggest that by 2030 more than 700 million people will be displaced due to lack of water in their regions). The United Nations aims at ensuring access to clean water for everyone by implementing better water management techniques and protect water-related ecosystems.

7. *Ensure access to affordable, reliable, sustainable, and modern energy for all*.

Today one out of ten people (13% of the global population) live without having access to electricity and almost all of them are inhabitants of rural areas. The worst problem behind this topic is that only the 17.5% of the total final energy consumptions is related to renewable resources, and this creates damages not only on the ecosystem, but even on human health. The United Nations aims at doubling the consumption of sustainable energy, offering wider access to renewable electricity to people.

8. *Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all*.

Sustainable economic growth can benefit the world by driving development and improving living conditions. To date, the global unemployment rate is about 5%, being recovered from the financial crisis of 2009, but still too high, especially in least-developed countries (nearly 10% in Northern Africa and Western Asia). The first target of this Goal is, indeed, achieve at least a 7% Gross Domestic Product[31] growth per year in those regions (nowadays, this measure is stable on a 5.7%). To improve the job sector, the United Nations promotes initiative whose core business is the fight against informal work, gender disparities (on average, men's hourly retribution is 12.5% higher than the woman's one), and lack of job opportunities for young people.

9. *Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation*.

A cleaner industry is of a fundamental importance for boosting shared prosperity and promoting sustainable development all around the world. This Goal can be achieved only if less-developed countries accelerate their industrialization process and improve their manufacturing sector, which is their first source of job and income. The United Nations, through investments for the research and development of more sustainable technologies ($2 trillion are spent yearly for this purpose), aims at raising industry's share of employment and Gross Domestic Product.

[31] Gross Domestic Product is a measure of the overall domestic production for a nation. It is calculated as the market value of all finished goods and services produced in a country in a specific time period.

10. *Reduce inequality within and among countries*.

To revitalize a Global Partnership, all the barriers and inequalities between countries need to be eliminated. Income inequality is the major difference from one region to another since that is raising in many areas of the world. To promote equality and share prosperity, the United Nations aims at fostering the income growth of the poorest people in a specific country at a rate higher than the national average and improving the regulation of global financial markets to eliminate fiscal barriers that are unsustainable for less-developed states (for this purpose more and more duty-free treatments are developed nowadays to encourage exports from the poorest areas).

11. *Make cities and human settlements inclusive, safe, resilient, and sustainable*.

Half of the world's population lives in urban contexts, but still one out of four residents live in slums (1 billion, whose major part is attributable to Sub-Saharan Africa and Asia). The need for the construction of safer, more sustainable, and affordable houses is rapidly increasing together with both the human population and urbanization growth. The United Nations supports sustainable infrastructure construction in order to ensure access to safe and eco-friendly houses and facilities for all by 2030. So far, 150 countries have structured national urban plans.

12. *Ensure sustainable consumption and production patterns*.

Industrialization and technological development have been linked with waste increment and environmental degradation during the last century. Natural resources are overused, and the pollution level is too high. The need for the development of sustainable technologies is of primary importance, since that improvements in resources use's efficiency is still too slow (only 100 countries worldwide have adopted policies and measures to foster sustainable consumption and production). The United Nations implemented a 10-year framework of programs to achieve this Goal and boost an efficient use of natural resources without negatively impacting the planet.

13. *Take urgent action to combat climate change and its impact*.

A direct action against the threat of global warming must be started immediately. The consequences of climate change can be devastating (See Ch. 1, para 1.3), and this is the worst issue that the world is currently facing. The concentration of carbon dioxide (CO_2) in the atmosphere is more than doubled (146% increment) during the industrialization process. Green-house emissions and air pollution are nowadays at excessive levels. The United Nations fosters a development in climate finance, by promoting the integration of climate change measures into international policies and business strategies.

14. *Conserve and sustainably use the oceans, seas, and marine resources for sustainable development*.

Oceans cover more than two-thirds of the planet's surface, and they are the engine of the world, since that about half of the oxygen comes from them. They also absorb great quantities of CO_2 (about 30% of total emissions), cleaning the air. Years and years of toxic emissions have changed their chemical composition and ocean acidity has increased by 26% since the industrialization process started. This phenomenon is strictly linked with climate change and, as well as this, it produces horrible consequences for humanity. Pursuing this

Goal, more than 100 countries improved their coastal water quality and many governments adopted laws against poaching, which provides huge damage to sea's ecosystem.

15. *Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*.

Millions of animal and plant species risk extinction due to human behaviour. About 20% of the land on the planet are degraded. Hectares of forests have been devastated by fires or by human usage. To date, many international agreements were signed to stop this trend. By 2030, the United Nations aims at ensuring the conservation of both the ecosystem and biodiversity, by the implementation of sustainable management techniques for forests, mountains, and natural habitats.

16. *Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels*.

At the very baseline of the re-establishment of the Global Partnership, there is the pursuit of peace. Corruption, homicides, abuses, and all the illegal practices that deny the respect of human rights constitute a big obstacle for the expansion of sustainable development. This issue, despite being daily faced by governments, is increasing its influence. In recent years, many national human rights institutions were established, but the creation of other ones in different countries is strictly requested to achieve the Goal. The United Nations is actively involved in both the fight against all forms of violence and exploitation and the promotion of new norms and regulation as regards the respect for human rights and transparency.

17. *Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development*.

All the SDGs described above cannot be achieved if countries do not collaborate. The success of the 2030 Agenda completely depends on the revitalization of a Global Partnership, through which stakeholders (governments, private sector, and society at large) can share information, techniques, instruments, and advises about how they address the goal and what could be the best way to implement them. The United Nations aims at supporting this common action by strengthen resource mobilization between countries, boosting international trades, mobilizing additional financial resources from the private sector for developing states, implementing sustainable technologies, and enhancing global macroeconomic stability.

b. Addis Ababa Action Agenda

On 15th July 2015, at the end of the Third International Conference on Financing for Development held in Addis Ababa (Ethiopia), the member states of the United Nations adopted the *Addis Ababa Action Agenda*[32], which is an agreement between governments that belongs to the same action plan for development that comprises the *2030 Agenda for Sustainable Development* described above. While the latter defines the SDGs and offers a wide number of targets and indicators to measure the progress made in the field of sustainability

[32] United Nations. (2015). *Addis Ababa Action Agenda of the Third International Conference in Financing for Development (Addis Ababa Action Agenda)*. https://sustainabledevelopment.un.org/content/documents/2051AAAA_Outcome.pdf

worldwide, the Action Agenda offers a comprehensive set of policy actions that are useful to achieve important results for development. If the 2030 Agenda sets the primary objectives, the Action Agenda suggests more than 100 concrete initiatives that should be implemented to pursue their achievement and create a better future for all. So, these two international agreements are complementary in nature. The Action Agenda provides advises for the establishment of a new international framework where everyone has the possibility to perform financing activities in a more stable and responsible way, with the aim of addressing environmental and social issues in each decision-making process and creating a climate of collaboration among all the different economic realities actively involved in the development of the sustainable finance sector.
This treaty, as well as the 2030 Agenda, requires governments to agree on the revitalization of a new Global Partnership, that is essential to align financial flows and structure cross-border initiatives in order to promote development in several critical areas of interest. Under the guide framework designed by the Action Agenda, signatory countries committed to:

- Offering national social protection systems, including facilitation for minorities and vulnerable categories, and encouraging investments oriented at the quality improvement of the essential public services, such as health, education, water, energy, and sanitation, especially in less-developed regions.
- Strengthening efforts to revitalize the agricultural sector, promoting a wider industrialization process even in rural communities, and enhancing the quality and distribution of food worldwide in order to stop hunger and malnutrition.
- Establishing a Global Infrastructure Forum, whose goal is the enhancement of the infrastructure sector by both covering the excessive costs for the construction of good quality essential facilities (just in developing countries the level of financial investments required by activities in this sector ranges from $1 trillion to $1.5 trillion annually) and improving the coordination between all the actors actively involved in projects as regards this field.
- Boosting inclusive and sustainable industrial development, through which more jobs can be offered to people and growth opportunities can be taken even by poorest countries.
- Improving the employment sector, by ensuring equal participation of women and men in workplaces and providing easier access to credit for the smallest realities.
- Developing sustainable programs whose core business is the protection and preservation of ecosystems and biodiversity, avoiding harmful actions for people, animals, and the planet at large.
- Promote peace and inclusion all around the world.

The Action Agenda provides recommendations and suggestions about the policies and methods that should be adopted to reach successful results for sustainable development in seven principal action areas, that are: domestic and public resources, domestic and international private business and finance, international development cooperation, international trade as an engine for development, debt sustainability, addressing systemic issues, and science, technology, innovation, and capacity building. In each of these areas, both an adequate follow-up and an accurate data monitoring by countries are required to verify the progress that they were able to collect through the correct implementation of the Action Agenda's initiatives.

Public finance is essential for countries to implement in the best way the actions suggested in this document and in the 2030 Agenda. The governments which have signed the Action Agenda committed to ensure transparency, fairness, efficiency and effectiveness of their taxation systems, by both instituting new national regulatory frameworks and strengthening an international tax cooperation to reduce illegal financial flows by 2030, trying to eliminate corruption and tax evasion. Direct actions aimed at the enhancement of the use of national public resources, as the creation of partnerships with national banks or the improvement of national control mechanisms, can strongly help even the least-developed countries in collecting great results as regards the achievement of the SDGs.

Also, the private sector is essential for fostering a sustainable development. The Action Agenda encourages enterprises to adopt business models that incorporate the evaluation of ESG criteria into decision-making processes, as well as the PRIs do. Signatory countries are committed to establishing strong regulatory and policy frameworks to align economic incentives for the private sector with SDGs, ensuring both more sustainable and responsible investment activities and a wider financial inclusion. The different practices suggested by this document are all structured in order to offer even to small companies the possibility to access growth opportunities through the improvement of capital markets.

Countries are called to scale up the international development cooperation to effectively support one each other and revitalize the Global Partnership, by increasing the volume of their official development assistance[33]. Having signed the Action Agenda, industrialized countries' governments are committed to achieve at least the minimum target of 0.7% of their Gross National Income[34] provided as official development assistance for other countries, whose portion between 0.15% and 0.2% must be allocated to least-developed countries by 2030. In this context, the support of multilateral development banks is essential. The Action Agenda encourages them to play an active role in the evolution of sustainable finance, by offering to countries access to affordable financing.

The lack of financing is an extreme limitation for the country's trading potential. The Action Agenda suggests that a universal, regulated, transparent, open, and inclusive trading system is necessary to address the SDGs in the best way. Member countries are committed to structure appropriate safeguards in international trade to expand this channel and capturing more financial opportunities. Industrialized states are called to allocate more financing and resources to less-developed countries and support them as regards their participation in international negotiations.

[33] Official development assistance is an advisory service from the government, by which both the economic development and welfare of developing countries are promoted. It is always correlated with some targets that are needed to measure the results achieved.

[34] Gross National Income is the measure of total domestic product plus foreign output in charge of people from a specific country. It consists in the Gross Domestic Product plus the income attributed to foreign residents, minus the income attributed to non-residents.

Debt is a fundamental instrument for economic-financial realities to take part in the action for the pursuit of a sustainable development worldwide and the sharing of a common prosperity. Every country, even the poorest one, should be assisted in attaining long-term debt sustainability. The Action Agenda recognizes that there is a real necessity for the implementation of a global regulatory framework in this context, crafting incentives and rules in order to foster debt financing, debt repayment, and debt management. Signatory countries are called to take actions oriented at ending uncooperative behaviours, helping those regions afflicted by natural disaster and social shocks, and trading debt instruments at more accessible conditions for all.

The Action Agenda, as mentioned above, recognizes the importance of an international financial stability and a better international financial cooperation to take actions against excessive volatilities of commodity prices in global financial markets, that are products of the systemic risk[35], which negatively impact the whole financial system and especially the developing countries. Governments are, indeed, called to implement initiatives for this purpose, such as improving the quality of credit ratings, strengthening the global financial safety net, and provide an adequate level of economic support to developing countries, in order to reduce the risk of a new crisis that can waste all the results achieved so far as regards the SDGs.

As mentioned in the previous section, to facilitate the coordination between governments, multilateral organizations, private enterprises, and other stakeholders, improvements in the fields of science, technology, and innovation are important. For this purpose, the Action Agenda launched the Technology Facilitation Mechanism, which is a system developed to help economic-financial entities in sharing information, experiences, policies, solutions, best practices, and results as regards the implementation of business actions that have the purpose of pursuing the SDGs. The Technology Facilitation Mechanism is composed by three elements: a collaborative Multi-Stakeholder Forum of two days on science, technology, and innovation convened once per year, where there are discussed the methods to address in the best way the issues related to the SDGs; an online platform where are summarized all the information about the sustainable initiatives launched all around the world and the results collected by these; and a United Nations Interagency Task Team composed of 10 members appointed by the Secretary-General, whose principal job is promoting the coordination between stakeholders and also taking care of both the collaborative forum and the online platform.

c. Paris Agreement

On 12th December 2015, during the 21st Conference of Parties of the United Nations Framework Convention on Climate Change, 196 member states' representatives adopted an international treaty about climate change mitigation, called the *Paris Agreement*[36]. It is recognized as the first comprehensive global action plan on climate and it constitutes an international framework to strengthen the world's response against

[35] Systemic risk is the possibility that an entire financial system will collapse. It has catastrophic consequences since that is derived by the shortfall of one big entity present in the market, which can cause a cascade effect by that several agencies can fail as a consequence of the first event. It potentially can bring down an entire market.

[36] United Nations. (2015). *Paris Agreement*.
https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

global warming. Signing this accord, each country must take action against this issue, regularly reporting on the results achieved and the progress made to stop the excessive emissions of greenhouse gases and the threatening increase in temperature, which are both linked to several financial and healthy risks. The Agreement has the purpose of encouraging sustainable initiatives whose core business is to fight the threat of climate change, by pursuing three principal goals, which are: maintain the average level of temperature increase below 2 °C and try to limit this measurement to a maximum of 1.5 °C, improve countries' adaptability as regards global warming consequences and strengthen climate resilience of communities, and develop financial investments that have no negative impacts on the environment.

The Agreement does not provide concrete actions for achieving these objectives but suggests that each country should decide about its own targets, indicated in the treaty as the nationally determined contributions, looking at its potential and capacity. Signatory states are called to immediately communicate one or more nationally determined contributions which they intend to achieve, revising them at least every five years. Each subsequent target should be more ambitious than the previous one, according to the progression process that is at the core of the entire Agreement. Signatory governments can voluntarily adjust their nationally determined contributions at any moment, tailoring them alongside their needs, but they must to report on them in the most transparent way as possible. Each country should provide information about both the national level of green-house gas emissions, by using the measurement methodologies accepted by the Intergovernmental Panel on Climate Change[37] (IPCC), and the progress made in implementing its nationally determined contributions, by tracking the results of every action implemented to address climate change. Starting from 2023, every five years the signatories must participate in a global stocktake of these portions of information to assess the collective progress made in achieving the purpose of the Agreement.

Countries can pool their nationally determined contributions, establishing voluntary international partnerships and helping each other to achieve noteworthy results for more ambitious targets, but every single region is responsible for its own emission levels. Industrialized countries should assist developing ones, since that these can have more difficult in addressing the problem of global warming and bearing the correlated impacts. To facilitate the exchange and transfer of technologies and resources from one country to another and to boost the development of instruments that are useful to face climate-related issues in financial activities, the Agreement adopted the Technology Mechanism. It consists in two bodies: the Technology Executive Committee, that is a group of 20 technology experts who work together with the purpose of providing policy recommendations for countries as regards the development and transfer of climate tools, and the Climate Technology Centre and Network, which directly helps countries in crafting new technologies and transfer them to foreign regions.

The Agreement also recognizes the fundamental importance of covering possible unsustainable losses and excessive costs related to the adverse impacts of climate change, especially taking care of less-developed

[37] The Intergovernmental Panel on Climate Change is an international institution founded in 1988 by the United Nations Environment Programme together with the World Meteorological Organization, whose activity is to provide periodically scientific assessments and detailed reports that analyse the problem of climate change. It determines the state of knowledge about global warming, implementing studies and researches about the causes, consequences, and mitigation actions that are linked with this issue.

countries. For this reason, it adopted the Warsaw International Mechanism for Loss and Damage. Through this tool, which was created in 2013, countries improve the coordination and dialogue between them and promote the implementation of new support actions to address loss and damage associated with adverse events generated by global warming, that can be even more devastating for vulnerable communities from rural areas. Developed countries' governments have decided to support the developing ones by investing $100 billion per year for the enhancement of their public and private financing channels.

1.3 The Wicked Problem of Climate Change: A General Overview

The planet's environmental conditions have changed many times throughout history, but during recent years both the public opinion and the scientific community switched their focus on the concerns about climate change, which is currently recognized as a wicked problem that needs to be addressed immediately with everyone's contribution to avoid devastating consequences in future years. A wicked problem is typically recognized as an issue that is extremely difficult to solve because of an incomplete knowledge about the possible solutions that should be implemented to handle with it in the best way, or as a phenomenon characterized by such a high level of social complexity that it is impossible to determine its end. Both these definitions perfectly fit with the topic of climate change, which reflects the long-term variations in the average conditions that characterize Earth's environment during the time.

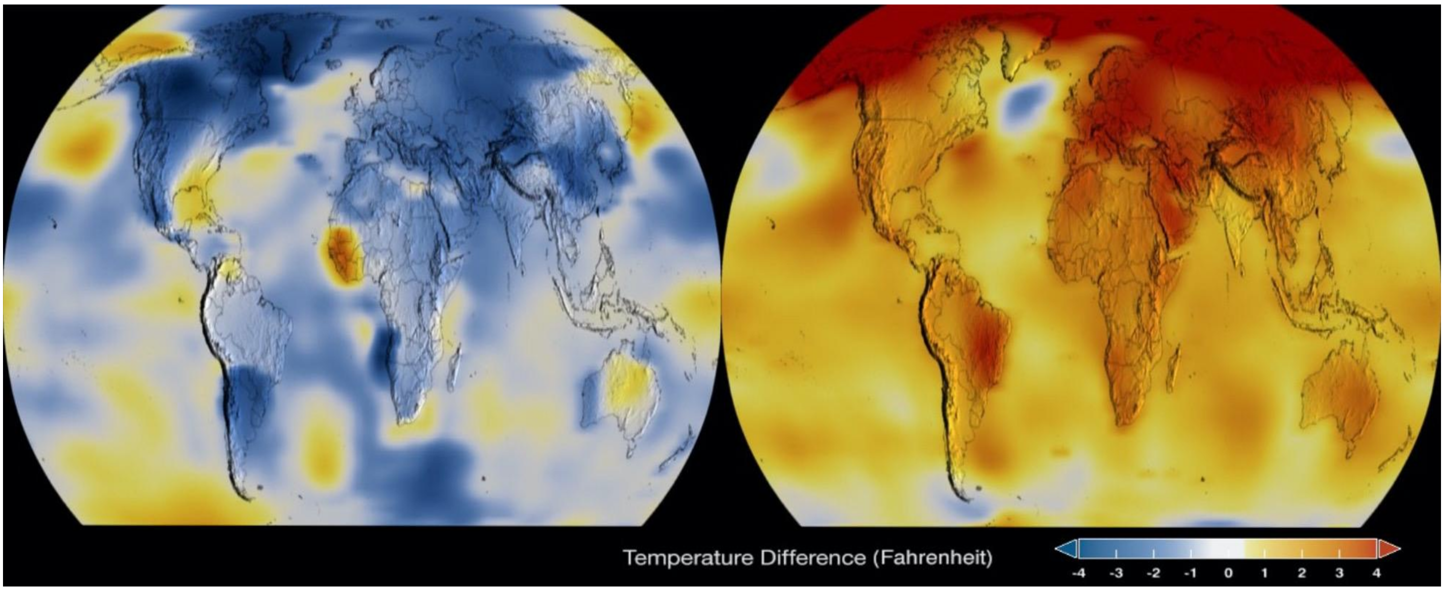
Among all the different events that exercise a remarkable influence over the world's ecosystems and people's living conditions, such as deforestation (forests are useful for Earth's health because they absorb CO_2 and return oxygen to the atmosphere, but nearly 420 million hectares have been lost due to human activities and fires since the 1990s, under the rate of 10 million hectares lost per year[38]), destruction of the marine environment (oceans are able to capture a great quantity of CO_2, but the extreme greenhouse gas emission decreased seas' potential for hydrogen[39] under 8.1, increasing the acidification effect and damaging marine flora and fauna[40]), and the population growth (global population is nowadays increasing at 1.05% per year, accounting for nearly 7.79 billion, and a higher number of people needs more resources, increasing pollution[41]), global warming is scientifically indicated as the most threatening one. The average temperatures are continuously changing worldwide because of a natural process called the *Greenhouse Effect*, which represents the method by which some thermic energy from the Sun is trapped by the planet's atmosphere. Without delving too deeply into the scientific aspect, this phenomenon can be described as the way through that part of the Sun's rays which pass through the atmosphere is reflected into space in order to allow Earth to

[38] Food and Agriculture Organizations of the United Nations. (2020). *The state of the world's forests 2020*. http://www.fao.org/state-of-forests/2020/en/
[39] Potential for hydrogen, in chemistry pH, is a measure to determine how acid or basic is a water-based fluid. A lower potential for hydrogen corresponds to more acidity, while a higher pH corresponds to more basicity.
[40] European Environmental Agency. (2020, May 27). *Ocean acidification*. https://www.eea.europa.eu/data-and-maps/indicators/ocean-acidification-2/assessment
[41] Worldometer. (2020). *World population*. https://www.worldometers.info/world-population/

cool, while the remaining part is trapped by the greenhouse gases[42]. The amount of energy channelled by the planet so depends by the quantity of these elements present on the Earth's surface, but a high level of these gases, especially CO_2, can retain too much heat and consequentially increase temperatures worldwide. Industries are adding force to this effect by releasing chemical gases and burning fossil fuels like oil and coal (around 33 gigatons of CO_2 emissions in 2019 only from the energy sector[43]), and so it is evident that human behaviour may be considered as one of the principal causes that drove the intense rise in temperature that the world is still experiencing since the start of the industrialization process. In less than 140 years, according to the 2018 IPCC *Special Report: Global Warming of 1.5 °C*[44], the planet is nearly 1 °C warmer and both temperatures of lands and oceans increased significantly, as shown in the Figure 1.4 below, which compares the climate condition in 1884 (on the left) with that of 2019 (on the right).

•Figure 1.4.

Temperature difference, 1884-2019



Note. Personal elaboration based on images from https://climate.nasa.gov/vital-signs/global-temperature/. Data collected (2020) by National Aeronautics and Space Administration. In public domain.

This significant change in the average temperature, translated into global warming that in turn is the first driver of climate change, is the cause of different evidences that contribute to the understanding of the magnitude and riskiness of this phenomenon. In the last two decades, the world has experienced 19 of the 20 warmest years ever registered, except 1998[45]. The most alarming consideration is that each year is warmer

[42] There are recognized five principal chemical elements classified as greenhouse gases, which are: water vapour, that is the most widespread and also the most important tool to measure the effects of climate change, since it increases as a consequence of the warm rise in the planet's atmosphere; carbon dioxide, which is produced by both natural processes and human activities and that has the highest influence about global warming; methane, that is a hydrocarbon gas produced by nature and human behaviour as well as carbon dioxide, but it is less widespread than this one; nitrous oxide, produced by activities that are linked to agriculture; and chlorofluorocarbons, which are produced by activities that are linked to industrial processes.

[43] International Energy Agency. (2020, February 11). *Global CO_2 emissions in 2019*. https://www.iea.org/articles/global-co2-emissions-in-2019

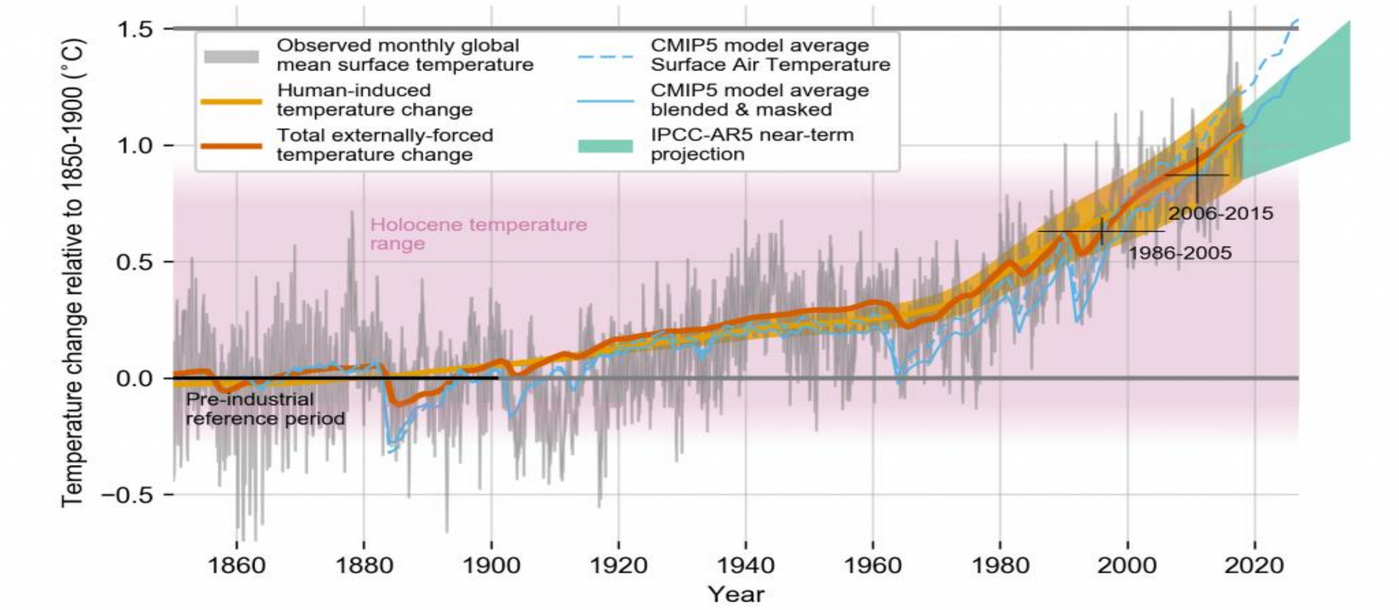
[44] Intergovernmental Panel on Climate Change. (2018). *Special report: Global warming of 1.5 °C*. https://www.ipcc.ch/sr15/

[45] British Broadcasting Corporation. (2020, May 5). *What is climate change? A really simple guide*. https://www.bbc.com/news/science-environment-24021772?utm_term=0_990f8eae78-1555bb7f70-118534833&

than the previous one, except for 2016, which is recognized as the warmest year on record (eight months of that year, from January through September with June excluded, are registered as the warmest on record). This trend, which can be observed in all its dimensions in Graph 1.2 (green plum reflects the prediction made by the IPCC about the temperature rise in next years), caused many issues on the planet's balance having irremediably changed its structure, but it can lead to even more devastating consequences in future if humanity does not act in time.

•Graph 1.2.

Evolution of global mean surface temperature



Note. Retrieved from https://www.ipcc.ch/sr15/graphics/ - cid_455. Copyright (2018) by Intergovernmental Panel on Climate Change.

The world is already suffering serious damages resulting from this climate imbalance, such as desertification, extinction of flora and fauna species, melting of the Arctic Sea ice and glaciers, rising in sea levels, higher frequency and violence of extreme climate events, and massive migration and displacement of climate refugees.

Desertification is defined as the degradation process by which a dryland (i.e. an area that typically lack of water and rainfalls) lose its fertility due to natural reasons (droughts and climatic variations) or human activities (inappropriate agriculture and deforestation) and becomes a desert. Drylands nowadays cover more than 40% of the planet terrestrial surface and are inhabited by nearly 2 billion people, and many of these are under the real threat to becoming deserts within not so many years [46]. Just in the last decade, 12 million hectares per year were lost due to this phenomenon and 167 countries from the United Nations affirmed that their lands are affected by desertification[47].

[46] Nunez, C. (2019, May 31). *Desertification, explained*. National Geographic. https://www.nationalgeographic.com/environment/habitats/desertification/

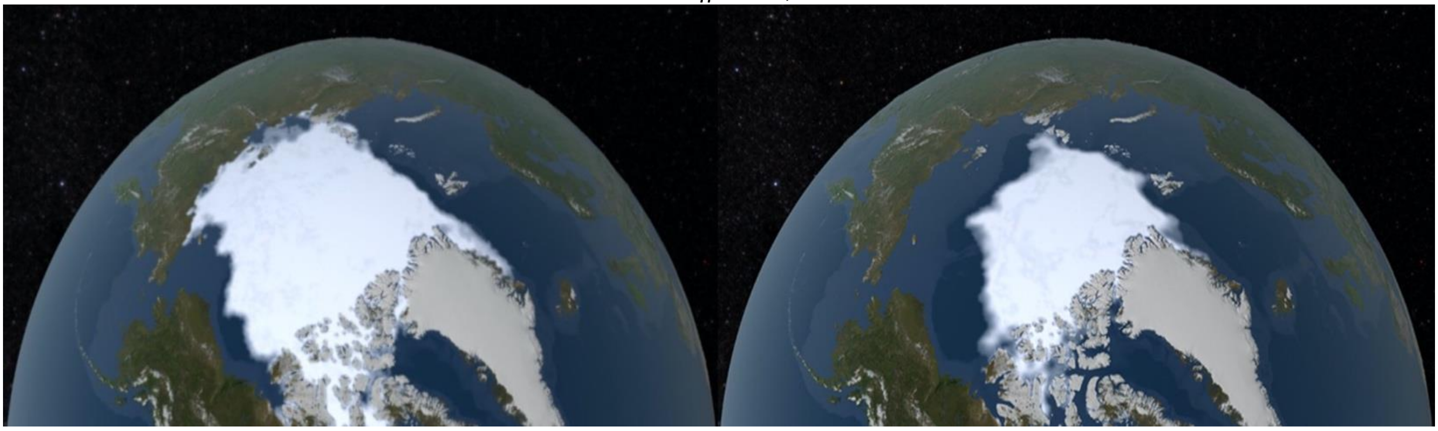
[47] United Nations Convention to Combat Desertification. (2020). *Quick facts on drylands, deserts, desertification and land degradation*. https://www.unccd.int/sites/default/files/inline-files/Quick_Facts_on_drylands,_deserts,_desertification_and_land_degradation_0.pdf

Biodiversity is strongly affected by climate change. One out of three varieties of plants and animals may face extinction soon if their habitats' temperature continues to increase and the goal set by the Paris Agreement is not meet. Just in 2016, there were accounted nearly 560 breeds of mammals extinct due to global warming and changes in ecosystems. Yearly, this phenomenon causes the death of between 10,000 and 50,000 animals and plants, exposing more than 1 million species to extinction if temperatures continue to rise and natural habitats, such as forests, rivers, and glaciers continue to be affected by extreme events that change their structures. If the goal of maintaining the maximum increment in temperature below 2 °C imposed by the Paris Agreement will be met, only one out six species will be endangered, otherwise, the world will see nearly half of its flora and fauna species disappear[48].

Global warming is melting glaciers and ice worldwide. This fact has extreme consequences on world's natural balance, threatening animals, plants, and humans because cold lands are habitats of many species and communities and the melted ice which flows into near oceans and water basins cause floods and raise both the level and temperature of seas. The scariest example of this phenomenon is provided by what is happening to the Arctic Sea ice, which is declining at the frightening rate of 12.85% per decade[49]. Arctic Sea ice, which helps Earth in regulating its temperature, it is now quite smaller than 40 years ago, as shown in Figure 1.5, which compares the ice level in Antarctica in 1979 (on the left) with that in 2019 (on the right).

•Figure 1.5.

Arctic Sea ice difference, 1979-2019



Note. Personal elaboration based on images from https://climate.nasa.gov/vital-signs/arctic-sea-ice/. Data collected (2020) by National Aeronautics and Space Administration. In public domain.

The evidence described above about melting ice, together with the thermal expansion of water induced by oceans warming, is strictly linked with the increment in seas level. To date, oceans' waters are rising at the rate of 3.3 millimetres per year[50]. The increment in the mean level of seas has the potential of devastating coastal communities in the long-term providing more frequent inundations, tropical storms, destruction of the

[48] United Nations. (2019, May 6). *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*.
[49] National Aeronautics and Space Administration. (2020). *Artic Sea ice minimum*. https://climate.nasa.gov/vital-signs/arctic-sea-ice/
[50] National Aeronautics and Space Administration. (2020). *Sea level*. https://climate.nasa.gov/vital-signs/sea-level/

barrier reef, and recession of inhabitable lands due to the erosion of coastal territories. Many studies evidenced that a 1-centimetre rise in sea level corresponds to a movement of the water of 1 metre to the landward, so, if there will not be implemented actions to limit this phenomenon, the inhabitable lands will be remarkably reduced in the future[51].

Extreme climate events are defined as unexpected and severe natural disasters associated with unseasonal weather. Global warming has induced many extreme weather events in recent years, such as cyclones, heat and cold waves, heavy rains, wildfires, earthquakes, and droughts characterized by higher violence and frequency than in the past. Recent studies have demonstrated that about 69% of these events are directly caused by climate change and that heatwaves (i.e. periods of extremely hot weather in a country, often accompanied by a high level of humidity) account for nearly half of such events, showing up how human activities induced most of them over the past 20 years[52].

Climate change effects, through all the evidence described above, forced many families and individuals, especially from indigenous communities which live in rural areas of least-developed countries, to move away from their houses in search of a new place where live under better conditions, both in the same country and in a foreign one. The Global Compact on Refugees of the United Nations, which is an agreement adopted in 2018 by member states to share equal responsibilities among governments as regards the topic of refugee movements, recognizes that both global climate imbalance and changes in the world's environment interact with the drivers of human migrations and displacement. Just in 2019, around 5.1 million people were living in displacement as the result of extreme climate events and natural disasters, such as tropical storms and monsoon rains caused by global warming, especially in developing countries[53]. The most people that are forced to migrate due to climate change are those who depend on agriculture.

According to the IPCC Special Report, Earth becomes 0.2 °C hotter every decade due to human activity. If this rate continues, global warming will reach 1.5 °C between 2030 and 2052, getting to an increase in the average temperature of about 3 °C (likely ranging between 2.8 °C and 3.2 °C) by 2100 if the international policies adopted as regards environmental issues will remain as they are today. This means that the world's governments are definitively not on track in meeting the Paris Agreement's requirements, but surprisingly there is still hope. Countries should start as soon as possible a double process of adaptation and mitigation by reinforcing the Global Partnership mentioned in the various international agreements signed in recent years, aiming at respectively decreasing populations' vulnerability to extreme warming-related events and stopping the growth of this phenomenon.

Limiting global warming to the maximum level of 2 °C and trying to stop it below 1.5 °C requires that heat-trapping gas emissions of anthropogenic nature (i.e. originating by human activities) should be brought to zero around 2050. This only can happen if countries worldwide start an in-depth process of sustainable development

[51] City of Greater Geraldton. (2014). *Why is seal level rise important?* https://www.cgg.wa.gov.au/live/my-environment/coastal-hazard-risk-management-and-adaptation-planning/the-importance-of-sea-level-rise.aspx
[52] Carbon Brief. (2020, April 15). *Mapped: How climate change affects extreme weather around the world*. https://www.carbonbrief.org/mapped-how-climate-change-affects-extreme-weather-around-the-world
[53] Migration Data Portal. (2020, May 8). *Environmental migration*. https://migrationdataportal.org/themes/environmental_migration

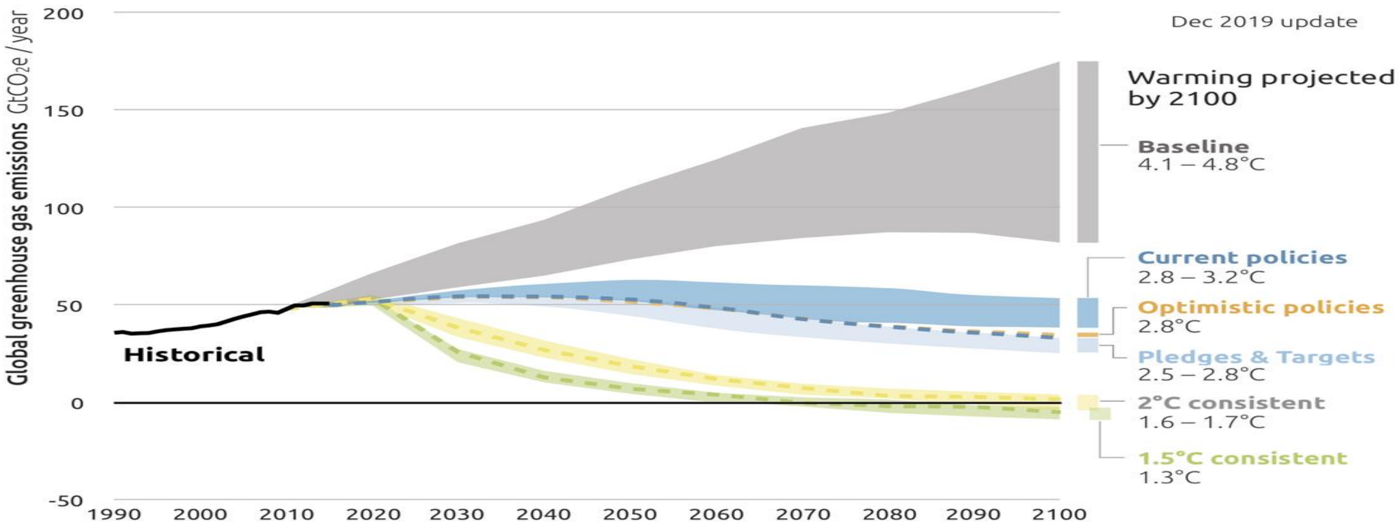
for the whole industrial system through the implementation of new eco-friendly policies and new emission-free technologies and processes in sectors as energy supply, infrastructure, transportation, and water supply. The IPCC Special Report designs also a wide range of pathways that should be followed in order to address in the best way the problem of climate change according to both the objectives of maintaining the increase in the mean temperature below 1.5 °C and 2 °C. To meet the first goal, which is the one that should be achieved because an increase of 2 °C could still be unsustainable for the world at large, IPCC scientists suggest that, as well as completely ending the greenhouse gas emission by the half of this century, there are other key initiatives that must be implemented. First, global CO_2 emissions need to be decreased by 45% (likely ranging between 40% and 60%) from 2010 levels, which were accounted for about 30.6 billion tons[54], by 2030. To be able to meet this requirement, industries may intensify the use of renewable energy and reduce the utilization of fossil fuels, by implementing sustainable and responsible practices such as the production through the exploitation of sustainable bio-based feedstocks (wood, sugar, mixed biomass, and natural oils) and carbon capture, utilization, and storage (i.e. a technique through which CO_2 emissions produced by an industrial process, instead of dispersing in the air, are captured and reused or stored). Directly linked with this strategy, the IPCC Special Report indicates that renewable resources should provide between 70% and 85% of global electricity by 2050, while the use of coal should be eliminated. Another initiative that should be implemented to achieve the 1.5 °C goal is the enhancement of land use, since that harmful agricultural activities are too widespread nowadays and this is translated into a huge loss of arable territories all around the world. By the half of this century, about 6 million km^2 of pasture lands may be converted in agricultural lands for energy crops and biological cultivation. There is also a real need for reforestation, and so by 2050 nearly 9.5 million km^2 of forest should be revitalized. In order to mitigate the effect of climate change and prevent Earth's temperature from continuing to increase, the solution of carbon pricing is extremely useful, since that this can be seen as a tax over greenhouse gas emissions. This method is globally recognized as the most efficient one to reduce heat-trapping gas emissions and works as an international taxation tool. The technique of carbon pricing consists of applying a cost to CO_2 emissions, thus encouraging organizations to cut the use of fossil fuels.

Graph 1.3 below shows all the possible scenarios about global warming by 2100, presenting four forecasts with different results: the grey plum represents the projection in the case of absence of common actions to avoid climate change effects; the blue plum represents the projection in the case that the international policies adopted will remain the same as they are today; the yellow plum represents the projection in the case that countries' governments worldwide will follow the pathways designed by the IPCC Special Report about stopping global warming below the 2 °C level; and the green plum represents the projection in the case that countries' governments worldwide will follow the pathways designed by the IPCC Special Report about stopping global warming below the 1.5 °C level.

[54] Boselli, M. (2011, May 30). *IEA sees record CO_2 emissions in 2010*. Reuters. https://www.reuters.com/article/us-iea-co2/iea-sees-record-co2-emissions-in-2010-idUSTRE74T4K220110530

•**Graph 1.3.**

2100 warming projections



Note. Adapted from https://climateactiontracker.org/global/temperatures/. Copyright (2019) by Climate Action Tracker.

The world is heating very fast and, despite this trend seems unstoppable so far, humanity still has the possibility of limiting the damage caused by climate change and avoiding even more unsustainable consequences, by cutting greenhouse gas emissions, adopting more sustainable lifestyles, and building more eco-friendly infrastructures. Climate change is recognized as a common threat and the world's communities are experiencing its effects in a more intense way since the start of this century. Everyone should make their contribution in stopping the increase in mean temperatures because, as said by Dr. Hans-Otto Pörtner (2018), the actual Co-Chair of the IPCC Working Group II, "*every bit of extra warming matters*"[55]. Although half a degree does not seem such an influential quantity, this small difference incorporates completely different risks and effects for both people and the planet. These resulting threats, which depend on the rate, duration, and maximum level of global warming in future years, are higher for an increment in temperature of 2 °C than those for an increase of 1.5 °C.

In Table 1.2 are summarized and compared the principal consequences derived from a rise in temperature of both 1.5 °C and 2 °C, showing how even such a small change in global warming can drive to completely different results and risks.

[55] Pörtner, H.O. [@IPCC_CH]. (2018, October 8*). Every extra bit of warming matters, especially since warming of 1.5 ºC or higher increases the risk associated with long-lasting or irreversible changes, such as the loss of the Greenland ice sheet or warm water coral reefs* [Imagine attached] [Tweet]. Twitter. https://twitter.com/ipcc_ch/status/1049115914476478464

•**Table 1.2.**

Consequences of global warming, 1.5 °C vs 2 °C

PHENOMENON DESCRIPTION	1.5 °C WARMING	2 °C WARMING
Extreme Hot Days Warming (in mid-latitudes)	+ 3 °C	+ 4 °C
Extreme Cold Nights Warming (in high-latitudes)	+ 4.5 °C	+ 6 °C
Lands' Ecosystems Transformation (Over the Total Terrestrial Surface)	2% – 7%	8% - 20%
Sea Level Rise (by 2100)	+ 0.26 m - 0.77 m	+ 0.3 m – 0.94 m
Ocean Acidity (by 2100)	+ 9%	+ 24%
Fishery Loss (per year)	1.5 million tons	> 3 million tons
Coral Reef Loss	70% - 90%	> 99%
Frequency Of Extreme Weather Events	+ 129%	+ 343%
Heatwaves Length (in months)	+ 1.1	+ 1.5
Droughts Length (in months)	+ 2	+ 4
Rainfalls Intensity	+ 2%	+ 4%
Glaciers Loss (per year)	76 mm	89 mm
Ice-Free Arctic Summer Probability	+ 3%	+ 16%
Population Exposed To Lack of Water	+ 271 million	+ 388 million
Global Gross Domestic Product Loss (by 2100)	8%	13%

Note. Personal elaboration based on data from https://www.ipcc.ch/sr15/chapter/spm/. Data collected (2018) by Intergovernmental Panel on Climate Change. In public domain.

1.4 Financial Risks and Macroeconomic Impacts of Climate Change: The Role of Central Banks

Climate change and the correlated events have tremendous consequences on the natural environment and people, as debated in the previous section, but they also represent concrete threats for the financial world and the global economy. The most worrying aspect of this issue is that it is scientifically certain that humanity will soon be on the brink of extinction due to the increasing number of extreme natural disasters caused by climate change unless policymakers around the world immediately begin to launch stricter policies of action to stop temperature rises. Indeed, the last report of the World Economic Forum indicates that the first three financial risks in terms of likelihood in the near future will be of environmental nature (extreme weather events, failure of climate change mitigation and adaptation, and natural disasters)[56]. Global warming and extreme weather phenomena are now globally recognized as the components of a possible green swan, which indicates an event or a set of natural events (hence the use of the adjective "*green*") that, bringing devastating effects and impacts on both society and the environment, is so heavy on the stability of international financial markets that it could cause a new global economic crisis. This belief is closely linked to the *Black Swan Theory*[57], a concept developed in 2007 by the Lebanese-American essayist Nassim Nicholas Taleb. According to the latter, a black swan indicates an unexpected and rare event that causes extreme consequences and can only be analysed and explained after it has occurred, so it is impossible to predict based on historical data (e.g. terrorist attacks). Even though they share many features, a green swan is more dangerous because climate catastrophes not only incorporate the threat of a crisis in the financial system, but also endanger the survival of both the whole humanity and natural ecosystems.

Thus, climate change exposes operators to three main risks, that are:

- The *physical risk*, which is the risk to incur in losses as a result of climate and weather-related events, such as floods and storms that damage property or disrupt trade.
- The *transition risk*, which is the financial risk that could result from the process of adjustment towards a lower-carbon economy, since that changes in policy, technology, and physical risks could prompt a reassessment of the value of a large range of assets, especially reserves of fossil fuels underground (defined as "stranded assets" because they cannot be used to produce economic returns), as costs and opportunities become apparent.
- The *liability risk*, which refers to the impacts that could arise in the future if all the parties which have suffered losses from the effects of climate change seek compensation for those, by acting towards insurances.

Physical risks' consequences are generally easier to measure because there are many measurement indicators of economic-financial losses derived from extreme weather events while both transition and liability risks' impacts depend on many non-linear factors that differ from market to market. Financing delivered to projects placed in coastal areas, for example, can be exposed to physical damages induced by floods and territories' erosion, while investments linked to initiatives launched in dry locations can be affected by droughts and heatwaves. The possibility to incur in significant losses due to the destruction of the equipment and industrial plants because of natural disasters is a more than concrete risk nowadays, as demonstrated by the case of the

[56] World Economic Forum. (2019). *The global risk report 2019: 14th edition*. http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf
[57] Taleb, N.N. (2007, January 1). *The black swan: The impact of the highly improbable*. Random House & Allen Lane.

Pacific Gas and Electric Company. This is a Californian firm, former leader in the gas and electricity supply sector, which in January 2019 had to declare bankruptcy due to the huge financial (destruction of equipment and claims for about $30 billion) and reputational damages (86 persons died in the tragedy, which was driven by the negligence of the company) suffered as the result of some wildfires caused by a technical malfunction and strongly intensified by both the extreme heatwave and drought that California was experiencing that year[58]. This event was described by the Wall Street Journal as the first case of bankruptcy induced by climate change, but certainly not the last one. On the other side, there is also the risk that some sectors and enterprises can be undervalued due to the integration in international markets of new exclusion policies (See Ch. 2, para 2.1) oriented to avoid investments in certain financial activities that contribute to global warming (e.g. tobacco production, intensive breeding, and carbon-intensive activities) or which will become obsolete. These economic activities are named "stranded assets" and are accounted for nearly $1.6 trillion[59]. In the case no new international sustainable policies addressing climate change-related issues will be implemented, the amount of unused natural resource will be about $7 trillion by 2030, while an accelerated transition towards a low-carbon finance will limit this to $3 trillion by that year[60]. The establishment of a regulatory framework where financial entities are incentivized for investing in eco-friendly products and green initiatives has the potential of changing markets' structure and consumers' preferences and habits, in addition to decline losses related to stranded assets.

Physical and transition risks take the form of economic shocks within the financial markets where they occur, influencing the balance of the latter and bringing about major changes in both the supply-side, by affecting the productive capacity of the economy, and the demand-side, by shifting the consumption needs of public and private sectors.

The principal supply-side shocks caused by physical damages from natural catastrophes and global warming are: the possible shortage of imported commodities, such as technologies, food, and energy, caused by the destruction of productive infrastructures and damages to transportation lines; the consequential change in foreign trade prices and decline of cross-border investments, which lead to a lack of capital; and the reduction of workers' productivity caused by the extreme heat, since that hot temperatures affect the workability by reducing both physical and psychological capacities of people (by 2030, every year more than 2% of working hours all around the world are projected to be lost, translated in a cumulated financial loss of minimum $2.4 trillion[61]). On the demand-side, climate change effects have the potential to: reduce countries' domestic welfare and thus reducing the aggregate demand for consumer goods from the private sector; decline the

[58] Penn, I. (2019, January 29). *PG&E's bankruptcy filing creates 'a real mess' for rival interests. New York Times*. https://www.nytimes.com/2019/01/29/business/energy-environment/pge-file-bankruptcy.html
[59] Carbon Tracker. (2018, March 8). *Energy firms risk wasting $1.6 trillion by ignoring low-carbon transition* [Press release]. https://carbontracker.org/energy-firms-risk-wasting-1-6-trillion-ignoring-low-carbon-transition/
[60] Rifkin, J. (2019, October 9). *The green new deal: Why the fossil fuel civilization will collapse by 2028, and the bold economic plan to save life on earth*. St. Martin's Publisher Group.
[61] Internal Labour Organization. (2019). *Working on a warmer planet: The impact of heat stress on labour productivity and decent work.* https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_711919.pdf

requests for foreign financing and international trade due to the increased risks associated with both imports and exports; and bring about a change in investor preferences towards greener products and services.

The principal supply-side shocks caused by the transition risk to a global low-carbon economy can be indicated as: the increasing use of material and financial resources aimed more at reducing CO_2 emissions in order to protect the environment and avoid greater losses rather than just seeking positive financial returns, a practice that can drive to a reduction of a possible short-term growth; and the decline in cross-border investments due to more stringent constraints imposed by policymakers to avoid a further increase in temperatures. On the demand-side, the transition risk is translated in the *Crowding Out Effect*, which is an event that generally occurs when the public sector is so involved in a financial market that it discourages private investment. Since that governments ask for more emission-free tools, the demand for low-carbon technologies from privates could decrease very fast.

In Table 1.3 are shown what are the macroeconomic consequences that climate risks can bring if extreme weather events, an ulterior increase in global warming, and the introduction of new related policies occur.

•Table 1.3.

Macroeconomic risks from climate change

TYPE OF SCHOCK/IMPACT		**PHYSICAL RISK**		**TRANSITION RISK**
		From Extreme Weather Events	**From Gradual Global Warming**	
DEMAND	**Investment**	Uncertainty about climate events	-	'Crowding out' from climate policies
	Consumption	Increased risk of flooding to residential property	-	'Crowding out' from climate policies
	Trade	Disruption to import/export flows	-	Distortions from asymmetric climate policies
SUPPLY	**Labour Supply**	Loss of hours worked due to natural disasters	Loss of hours worked due to extreme heath	-
	Energy, Food, And Other Inputs	Food and other input shortages	-	Risks to energy supply
	Capital Stock	Damage due to extreme weather	Diversion of resources from productive investment to adaptation capital	Diversion of resources from productive investment to mitigation activities
	Technology	Diversion of resources from innovation to reconstruction and replacement	Diversion of resources from innovation to adaptation capital	Uncertainty about the rate of innovation and adoption of clean energy technologies

Note. Retrieved from https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2018/climate-change-and-the-macro-economy-a-critical-review.pdf?la=en&hash=D1A56DF33C50074F5D3383587A272BFD611CBA04. Copyright (2018) by Bank of England.

These two macro classes of climate-related risks affect the purest types of financial risks, since that they greatly increase the exposure to: credit risk[62], seeing that damages caused by extreme climate events can weigh so heavily on a company's financial position that its ability to repay its debts is significantly reduced; market risk[63], since that international policies increasingly oriented towards a greener economy can remarkably decrease the market value of certain assets; liquidity risk[64], as well as the demand for new financial products and more consistent amounts of capital will soon increase significantly to cover all climate-related risks and banks could be exposed to a shortage of liquidity; operational risk[65], because global warming can cause damage to the production chain; and insurance risk[66], since that more and more environmental insurance products will be issued to address the threat of climate change.

The effects of such a rapid rise in the planet's average temperature not only increase the risks associated with more intense and frequent extreme weather catastrophes, which in turn cause considerable damages and financial losses to communities around the world but also have a direct impact on the short-term level of the Gross Domestic Product of each individual country, especially for developing ones, typically less prepared to face such a dangerous threat. Therefore, climate change may represent mankind's main antagonist in the progress for a sustainable development aimed at encouraging the global economy's growth and the consequent possibility of eradicating extreme poverty once and for all, in particular in the case countries do not properly tackle contemporary challenges related to climate change transforming them into opportunities. The direct impact on the Gross Domestic Product from temperature changes can be easily calculated through a mathematical method. Starting from the base form of the Cobb-Douglas production function, and incorporating into the equation a loss function that reflects the way by which global warming affects the internal production of a country, there is:

$$Y_t = D(\Delta T_t) \cdot A_t \cdot L_t^{\beta} \cdot K_t^{\alpha}$$

where Y_t is the total output production at time t, so the measure of the Gross Domestic Product at a certain time (typically one year), A_t is the total factor productivity at time t (i.e. a measure of the technical efficiency, calculated as the ratio between total outputs and total inputs at a certain time), L_t is the quantity of labour provided at time t, K_t is the quantity of capital used for the production at time t, β and α are the output elasticities respectively of labour and capital (i.e. a measure that reflects returns to scale, calculated as the ratio between the percentage change of total outputs and the percentage change of one input), and $D(\Delta T_t)$ represents

[62] Credit risk refers to the chance that a lender incurs in a loss due to the borrower's failure to repay its obligations. Typically, it indicates that the debtor cannot be able to repay neither the principal nor the interests.
[63] Market risk refers to the chance that an investor that holds a financial instrument incurs in a loss due to factors that affect the value of the product. There are many subclasses of market risks, such as equity risk, interest rate risk, and currency risk.
[64] Liquidity risk refers to the possibility that an institution may be unable to provide enough liquidity in the short term. It typically arises from the difficulty in quickly trading a determined asset in the market due to the lack of interested counterparties.
[65] Operational risk refers to all the different issues that could arise from the execution of a day-to-day business activity. It can result from wrong internal procedures in the production chain or also from externalities that affect the operations, such as political or natural events.
[66] Insurance risk refers to the possibility that an insured event occurs and so the insurer is called to pay the claim.

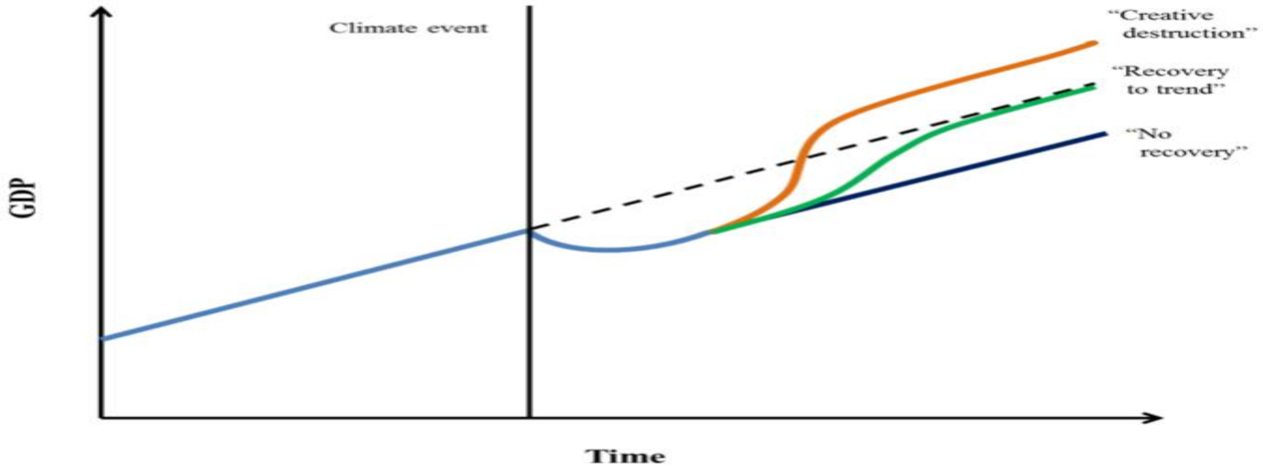
the loss function derived by a change in temperature *ΔT* at time *t*, such that $D(0) = 1$ and $D(x) < 0$. There can be observed that in absence of global warming there will be no damages and consequentially no change in Gross Domestic Product, while even a minimum movement *x* in mean temperatures will lead to a loss in the output production. The loss can be calculated through different methods, but the most appropriate one is, as noted by Weitzman in 2010, the use of an exponential function which reflects the damage in relation to the level of global warming[67]. The function, which allows measuring greater losses for greater temperature changes, takes the form of:

$$D(\Delta T_t) = e^{\gamma \cdot (\Delta Tt)^{\wedge}2}$$

where $\gamma < 0$ represents the elasticity of the loss in relation to the change in temperature.
If the damages caused by the consequences of global warming provide for sure a reduction in the level of Gross Domestic Product in the short-term, the investments delivered both for the restoration of production capacity and adaptation to a warmer climate need to be taken into account. These are accounted into the measurement of the real Gross Domestic Product of a nation and offering opportunities for economic growth over the medium to long-term. There is a set of three different scenarios that describes the possible output production's response to extreme weather events and rise in mean temperatures, shown in Graph 1.4.

•Graph 1.4.

Possible effects of climate catastrophes on Gross Domestic Product



Note. Retrieved from https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2018/climate-change-and-the-macro-economy-a-critical-review.pdf?la=en&hash=D1A56DF33C50074F5D3383587A272BFD611CBA04. Copyright (2020) by Bank of England.

The *creative destruction* scenario (orange line) indicates that a country, after suffering a considerable financial loss caused by the partial or total damage to infrastructure within the territory due to a natural catastrophe, may have the opportunity to embark on economic growth so fast as to bring the level of Gross Domestic Product above the one recorded before the event occurred. This could happen because the demand for products

[67] Weitzman, M.L. (2010). *What is the "damage function" for global warming – and what difference might it make?* World Scientific Publishing Company. https://scholar.harvard.edu/weitzman/files/damagesfunctionglobalwarming.pdf

and services could rise as soon the damages will be covered, the country could be helped by international incentives for the recovery process, and a technology innovation process to avoid other damages could start.
The *recovery to trend* scenario (green line) indicates that the economy of a country hit by a natural catastrophe, after going through a decline period, may return to pre-disaster levels through a recovery period characterized by faster than average growth of Gross Domestic Product due to a rapid reallocation of resources to the areas most affected by the extreme weather event.
The *no recovery* scenario (blue line) indicates that a country afflicted by great damages caused by climate-related disaster may be unable to bring back the level of the output production to the trend existing before the disaster, having to invest a lot of resources in activities aimed exclusively at recovering the damages and therefore missing the opportunity to undertake a process of economic growth.
So, although there is a real possibility that climate change may also lead to opportunities for economic growth, so far the socioeconomic consequences of global warming and the correlated extreme weather events have been devastating worldwide, as shown in Figure 1.6, which is useful to understand the magnitude of the phenomenon in recent years on communities, on the world economy, and on the planet's ecosystems too.

•Figure 1.6.

Manifested socioeconomic impacts of climate change

Impacted economic system		Area of direct risk	Socioeconomic impact	How climate change exacerbated hazard
Livability and workability	1	2003 European heat wave	$15 billion in losses	2x more likely
	2	2010 Russian heat wave	~55,000 deaths attributable	3x more likely
	3	2013–14 Australian heat wave	~$6 billion in productivity loss	Up to 3x more likely
	4	2017 East African drought	~800,000 people displaced in Somalia	2x more likely
	5	2019 European heat wave	~1,500 deaths in France	~10x more likely in France
Food systems	6	2015 Southern Africa drought	Agriculture outputs declined by 15%	3x more likely
	7	Ocean warming	Up to 35% decline in North Atlantic fish yields	Ocean surface temperatures have risen by 0.7°C globally
Physical assets	8	2012 Hurricane Sandy	$62 billion in damage	3x more likely
	9	2016 Fort McMurray Fire, Canada	$10 billion in damage, 1.5 million acres of forest burned	1.5 to 6x more likely
	10	2017 Hurricane Harvey	$125 billion in damage	8–20% more intense
Infrastructure services	11	2017 flooding in China	$3.55 billion of direct economic loss, including severe infrastructure damage	2x more likely
Natural capital	12	30-year record low Arctic sea ice in 2012	Reduced albedo effect, amplifying warming	70% to 95% attributable to human-induced climate change
	13	Decline of Himalayan glaciers	Potential reduction in water supply for more than 240 million people	~70% of global glacier mass lost in past 20 years is due to human-induced climate change

Note. Retrieved from https://www.mckinsey.com/~/media/mckinsey/business functions/sustainability/our insights/climate risk and response physical hazards and socioeconomic impacts/mgi-climate-risk-and-response-full-report-vf.ashx. Copyright (2020) by McKinsey Global Institute.

To avoid other devastating consequences of this kind, to encourage the expansion of a more sustainable finance, and to reassure the resilience of financial stability resulting from the global monetary policies implemented to date, a direct intervention of the central banks is needed. These are intergovernmental institutions that control both money supply and the capital distribution process within a single nation or a group of nations. They are responsible for the respect of the monetary policy's targets within a country and establish the dimension of interest rates over financial products and services. Unlike commercial banks, they are allowed to print and issue money, by maintaining the monopoly over the monetary assets' allocation in a specific state. Central banks have often been the last resort in avoiding or exiting a global financial crisis, and, for this reason, the problem of climate change, defined by Stern (2006) as "*the greatest market failure the world has ever seen*"[68], is an issue closely linked to these economic-financial entities. To address in the best way as possible this global challenge, central banks need to develop both green macro and micro prudential solutions oriented to encourage a transition to a low-carbon economy.

First of all, the modern regulatory framework should be adapted to integrate into financial activities climate-related stress tests, such as carbon or climate stress tests, which are of fundamental importance to acknowledge and measure the impacts and risks that climate change can exercise over financial decisions. Thus, central banks should work together with policymakers and regulators to achieve noteworthy results in this field. Macroprudential instruments designed to consider environmental issues can take the form of:

- Green reserve requirements (i.e. regulations as regards the minimum amount of fund imposed by central banks that need to be retained by commercial banks, thus ensuring that these will be able to meet all liabilities at every time and even under adverse conditions), which should be lower for those banks that lend to low-carbon initiatives, thus encouraging them to allocate more financing towards green investments.
- Green capital requirements (i.e. regulations to establish the minimum number of liquid assets that must be held by commercial banks in order to provide adequate banking services), which can take the form of countercyclical capital buffers[69], sectoral leverage ratios[70], and capital adequacy ratios[71] and should be designed to incentivize green investments and discourage brown ones (i.e. activities that produce a high concentration on greenhouse gas emissions).
- Lending limits, which represent the most popular solution implemented to boost the expansion of a more sustainable finance. Central banks should design different policies for different types of

[68] Stern, N. (2006, October 30). *Stern review: The economics of climate change*. Government of the United Kingdom. http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf

[69] Countercyclical capital buffers represent the weighted average of the mandatory liquid capital, in excess of the minimum level required, that must be retained by financial institutions commercial banks during predetermined time horizons to ensure a more resilient banking system worldwide.

[70] Sectoral leverage ratios are measures used to calculate the core capital of a bank. They are useful to understand the bank's leverage over its total assets, so the ratio between its financial assets and its total equity.

[71] Capital adequacy ratios are measures used to calculate the percentage of the available capital of a bank with regarding its risk-weighted assets. They are necessary to reassure the global financial stability because the respect of these ratios avoids the possibility that the systematic risk occurs.

investments, favouring commercial banks that deliver their loans to eco-friendly and zero-emission projects.

To date, more and more green instruments are being traded in global financial markets. Central banks can improve this trend by the unconventional tool of the *Green Quantitative Easing*. The classic Quantitative Easing is the program implemented by all central banks to face economic downturns or financial crisis. Through this solution, they produce new money and buy a great number of financial assets and securities to reactivate the circulation of liquidity and strengthen the resilience of global finance. As regards the green shape of this initiative, central banks should allocate their financing towards green bond (See Ch. 3, para 3.3) markets, providing a considerable long-term demand for this kind of financial instruments. Central banks should also incorporate sustainability criteria into their portfolio management policies, encouraging so other financial institutions to do the same[72].

Thus, central banks have a wide range of green solutions to help the world in addressing the biggest problem of this century, and they have to take immediate actions to provide an example for all the other actors from the world of finance. They are called at the implementation of new cross-border initiatives to face climate change, such as already done with the Network for Greening the Financial System[73], which is an alliance established in 2017 and actually composed by 66 banks, whose main purpose is to promote sustainable actions aimed at meeting the *Paris Agreement*'s objectives through the enhancement of the green finance channel. As stated by Carney (2015), the former director of the Bank of England before Andrew Bailey, "*climate change is the tragedy of the horizon*"[74] and so the world at large should take action against this threat.

Conclusion

This first chapter both highlighted the importance of sustainable finance development, which is needed to address in the best way the problems that affect humanity and the world at large, such as extreme poverty, inequality, and climate change, and provided a review of the international framework where this topic is inserted today.

Starting a path towards the transition of the world of finance to sustainability not only brings benefits in the short-term, but also helps to lay the foundations for a better future for all. The most diffused way to perform initiatives of sustainable finance is through the practice of responsible investment, through which environmental, social, and governance issues are integrated into the decision-making processes and economic-financial analyses. The United Nations launched in 2006 a set of guidelines, called *Principles for Responsible*

[72] Kyriakopoulou, D. (2019). *Central banks and climate change*. Official Monetary and Financial Institutions Forum. https://www.omfif.org/wp-content/uploads/2020/02/ESG.pdf

[73] Network for Greening the Financial System. (2019, September 13). *Origin and purpose*. https://www.ngfs.net/en/about-us/governance/origin-and-purpose

[74] Carney, M. (2015, September 29). *Breaking the tragedy of the horizon - climate change and financial stability*. Bank for International Settlements. https://www.bis.org/review/r151009a.pdf

Investment, to support investors and, more in general, economic entities in developing more sustainable and responsible financial activities through which combine the search for a positive return with the need to avoid negative impacts on both the environment and society. These Principles represent nowadays the most diffused sustainable program within the world of finance, accounting more than 3,000 financial organizations. They encourage institutional investors, such as commercial banks, pension funds, hedge funds, mutual funds, endowment funds, and insurance companies to design their strategic decisions and investments in a more responsible way thus making easier to take advantage from all the opportunities offered by more transparent and green activities. Many responsible initiatives yet have been implemented by groups of institutional investors, such as the 30% Club, the Investor Stewardship Group, and the Sustainability Accounting Standards Board. The need for a common action by financial institutions to tackle the problems of this century is not only limited to private sector entities, but also includes the revitalization of a Global Partnership between governments around the world, bringing together both industrialized and developing countries. Such action, as well as bringing great social benefits, can direct the world's nations towards significant economic growth. To tackle climate change and to encourage a wider expansion of more sustainable finance, in 2015 member states of the United Nations signed three agreements: the *2030 Agenda for Sustainable Development,* which sets 17 global objectives to foster a sustainable development around the world, the so-called the Sustainable Development Goals, that need to be achieved by 2030 in order to create a better future for all; the *Addis Ababa Action Agenda*, which is an agreement between governments that belongs to the same action plan for development that comprises the *2030 Agenda for Sustainable Development* and while this one defines the targets, the Action Agenda offers a comprehensive set of policy actions that are useful to achieve important results for development; and the *Paris Agreement*, which is recognized as the first comprehensive global action plan on climate and constitutes an international framework to strengthen the world's response against global warming. The latter issue, indeed, represents the first cause of climate change, currently recognized as the worst threat that the world is called to face. The disproportionate rise in average temperatures due to excessive greenhouse gas emissions, deforestation, the increase in oceans' acidity, melting glaciers, and the more and more frequent and violent extreme weather events are just examples of how humans, through misbehaviour, are destroying the planet. Unfortunately, this is not a problem confined to the world's ecosystem, since that these constant environmental changes cause incalculable damage to humanity itself, putting its long-term survival at risk. It has been estimated that there is an extreme urgency to develop common actions to limit the damages caused to Earth and, consequently, to better address the issues arising from climate change. This phenomenon, whose effects are already clearly visible, has not only physical consequences (extinction of flora and fauna's species, reduction of the inhabitable lands) but also economic ones (loss of working hours, damages to infrastructure), threatening the world's financial stability. For this reason, central banks must also play their part in fostering resilience against climate change by developing sustainable international policies and expanding financial markets where green solutions are traded.

In conclusion, this chapter has shown how all financial entities (private sector, public sector, and central banks) must adopt responsible strategies, for example through the guidance of the *Principles for Responsible Investment*, in order to expand the world of sustainable finance, indicated as the best means to address all the problems, especially environmental ones, that humanity is facing today. Despite the many efforts made to date by nations all around the world, there is still much work to be done to improve the level of global sustainability through more responsible investments. Indeed, many of the *Sustainable Development Goals*, although still incredible achievable, need immediate actions to be met by 2030, thus improving the living conditions of even less-developed communities.

CHAPTER II

The Integration of Environmental, Social, and Governance Criteria Into the Financial Analysis

After having identified in the previous section the theoretical framework where sustainable finance is inserted, through the second step of this route the reader is confronted with the practical aspect of this subject. This part explains how the Principles for Responsible Investment are actually incorporated into business strategies by companies in the international financial markets, showing how the need for a positive economic result can be easily linked to the attention for environmental, social, and governance issues.

Finance has changed drastically during recent years; if previously investors sought initiatives for the sole purpose of obtaining economic returns, nowadays more and more financings are delivered to companies and projects that address ESG issues in the best sustainable way as possible. This trend follows the growing demand to meet increasingly rigid standards regarding the protection of the planet and people, in order to ensure a positive impact of the investments also in the long-term. Within modern financial markets, many sustainable firms and green initiatives have registered better financial performances than enterprises which do not take into consideration ESG topics in their business analysis. ESG, indeed, is an acronym that refers to the three key dimensions which should be analysed by an enterprise to better understand and manage the risks and opportunities linked to its activities. An accurate study about these factors offers the possibility to incorporate in the decision-making process all those non-financial information that have the potential to drastically influence both investments' returns, by providing unexpected losses, and the reputation of the company itself.
Environmental criteria consider how financial institutions conduct their actions in connection with the respect of the environment in which they operate. As described in the previous chapter, negative externalities could affect investments' performance just like market shocks. Firms should concern about many issues related to the environment, such as greenhouse gas emissions, natural catastrophic events, water pollution, biodiversity conservation, and energy waste. Through a correct assessment of the risks related to this aspect, companies can be able to reduce operational costs by saving kilowatts of energy, preserving gallons of water, cutting waste, and reaching strong financial results without leaving a negative impact on the world's ecosystems.
Social criteria are related to the business relationships' management of firms and how stakeholders involved are engaged. As also child labour and slavery are part of the social dimension indeed, a sustainable company must ensure the respect for human rights, safe working conditions, and equality as regards the treatment of both its customers and employees. Through the assessment of these topics, the enterprises can enhance their reputation and attract more potential clients and partners, since that even more investors, especially pension funds, insurance companies, and mutual funds, want to reflect their social commitment through funding in

companies that pay attention to issues such as diversity within the firm itself and the protection of workers' rights.

Governance criteria refer to issues such as bribery and corruption, executive pay, board diversity, legal controversies, and conflicts of interest. An enterprise must ensure transparency through the adoption of anti-corruption policies, assuring diversity in the composition of the board of directors to avoid possible conflict of interests, fair remuneration, and respect for shareholders' rights. The assessment of these issues is necessary for a firm to avoid illegal practices and legal problems. Governance factors refer to the full set of rules and processes designed by corporations, through which an investor can screen for appropriate practices as they do for the other two dimensions of ESG criteria.

From the introduction of the PRI into business models and of the 17 SDGs, in 2015 the concept of sustainability within the world of finance has become central and more debated, leading to the introduction of investment strategies that integrate the concept of sustainability and aimed at evaluating and monitoring the performance related to the responsible objectives pre-set through the use of green evaluation tools and appropriate indicators and scores, both at the macroeconomic and individual investment level. To date, many financial institutions in both the private and public sectors model their investment decision-making processes based on opportunities, impacts, and ratings related to ESG considerations. Different types of investment strategies with regarding this topic can be observed and defined in international financial markets, incorporating ESG criteria with the aim of creating value in the long-term not just for investors, but also for the society and the entire community. Never as today, the attention to these issues has become essential for most enterprises actively engaged in performing their tasks in compliance with the requirements set out in the international agreements described in the previous section.

The second chapter of this Master Thesis will analyse how financial institutions worldwide have integrated ESG factors into their decision-making processes and financial analysis, describing all the different responsible strategies that these entities perform nowadays to create value from the short-term to the long-term in both shapes of economic profit and non-negative impact on society and the world at large. Through this section, the reader can understand the influence that the new awareness of these issues and the introduction of the PRI has had within the world of finance under a technical point of view, since that all the topics highlighted in this section represent a direct application of the Principles into both financial analysis and activities. In this chapter, also the state of the art as regards the measurement of sustainable strategies' results will be analysed, in order to offer the reader a better understanding of the aims of responsible investment and the objectives that can be achieved by those companies that perform them.

The first paragraph provides information and financial data about the current categorization of the principal sustainable business strategies developed by stakeholders, referring to the official classification developed by the European Sustainable Investment Forum[75] in its *European Sri Study 2018*[76]. From the periodic analysis carried out on the socially responsible investing market, the Forum has recognized seven investing approaches to ESG, indicated as:

- Best-in-class investment selection.
- Sustainability-themed investment.
- Norms-based screening.
- Engagement and voting on sustainable matters.
- Exclusion of holdings from investment universe.
- ESG integration factors into financial analysis.
- Impact investing.

The second paragraph is an in-depth analysis of the future of impact investing strategy. It was deemed necessary to dedicate a special paragraph to this solution given the increasing attention that it, originally overshadowed by the others, is receiving in recent times, especially among institutional investors. The principal difference between this activity and the other six is that only this one is intentionally oriented to leave a remarkable positive impact on society or environment while the others just incorporate ESG concerns into financial decisions to avoid negative effects. Impact investing represents the principal solution to act against issues such as climate change, extreme poverty, and growing inequality, aiming more to have a positive result for the whole community than for the individual investor.

In the third paragraph, there is presented a general overview of the state of the art as regards the evaluation of ESG companies' performance. There will be analysed the main different technical tools and solutions used by the companies worldwide to measure the effective trend followed by their responsible financing and if these bring to positive results both under a social and financial point of view. Through this section, the reader is helped to understand what are the factors that firms should assess to evaluate if they are working sustainably.

The last paragraph of the second chapter focuses the attention on the evaluation techniques used nowadays by companies for the measurement of impact investments' performance. As this subject is constantly evolving, the state of the art in measuring the impact of sustainable investments is still immature, so much so that there is a particular need to develop more efficient tools in the near future to assess the tangible benefits of financial activities both on society and the environment.

[75] The European Sustainable Investment Forum is the leading international institution for the promotion of sustainable and responsible investment in Europe. This organization is a member of the Global Sustainable Investment Alliance, which is a global partnership between all those international organizations that aim at fostering development worldwide through the channel of sustainable finance.

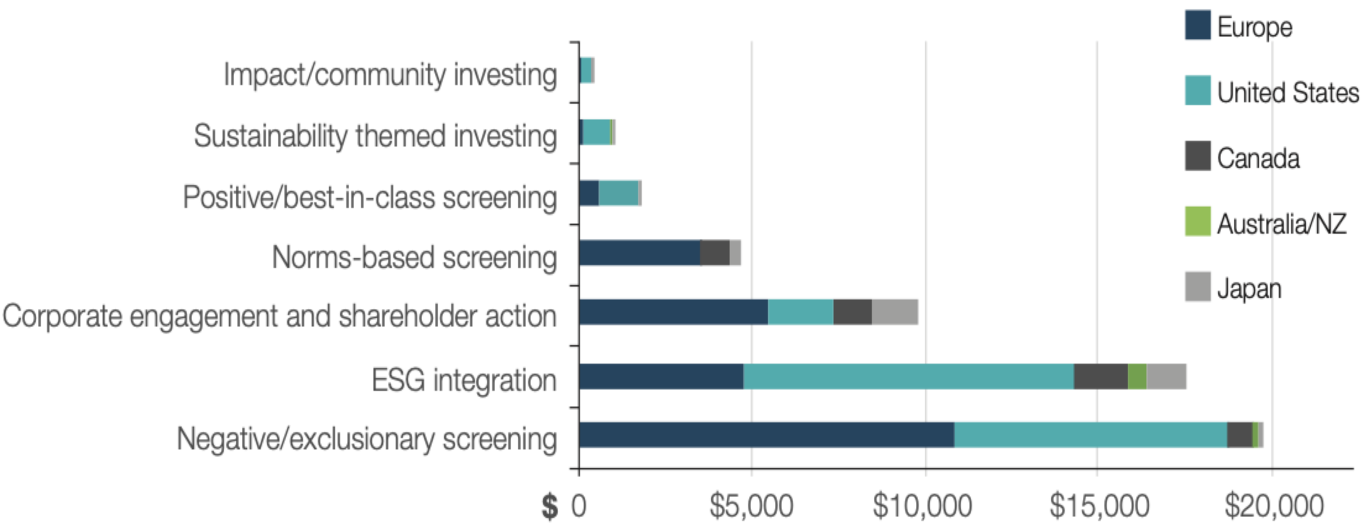
[76] European Sustainable Investment Forum. (2018). *European sri studies 2018*. http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline

2.1 The Seven ESG Strategies

As noted in the previous chapter, global financial markets have seen a significant increase both in the number of sustainable and responsible investments and in the amount of correlated assets under management during recent years. This rise was dictated not only by a real need to align the individual interest with that of the collective community in order to limit further environmental and social damages, but also by the growing importance of the PRI from year to year. Although these ones serve as guidelines for the proper integration of ESG criteria into business models and suggest some possible steps to be taken to meet each individual Principle, the signing of the PRI does not constitute a certification of compliance with ESG criteria by the signatories but represents only their commitment to act in a sustainable and responsible way. PRI's signatories are therefore left free to structure their investment decisions in the way they see fit to develop the concept of sustainability[77]. Seven different business strategies are currently recognized through which stakeholders (especially institutional investors, which are the main promoters of more sustainable finance worldwide and hold the 75% of ESG investing assets[78]) integrate ESG issues into the financial analysis with the aim of structuring responsible investments. Each strategy differs from the others in terms of specific practice and financial performance. Moreover, the adoption of one specific strategy does not exclude the adoption of the others. Graph 2.1 shows the relative amount of assets under management (expressed in billions of US dollars) for each of them within the five principal international markets in 2018.

•Graph 2.1.

Sustainable investing assets by strategy and region, 2018



Note. Retrieved from http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf. Copyright (2019) by Global Sustainable Investment Alliance.

[77] The signatories are, however, periodically submitted to Due Diligence Questionnaires by the United Nations to verify the adequacy of their work with respect to the Principles. There are only three minimum requirements that must be met in order to not be delisted by the program, namely, to create corporate policies on sustainable investment decisions, to establish a staff specifically geared to the implementation of these policies, and to adopt appropriate accounting mechanisms for responsible investment. Retrieved from: Principles for Responsible Investment. (2020). *Minimum requirements for membership*. https://www.unpri.org/signatories/minimum-requirements

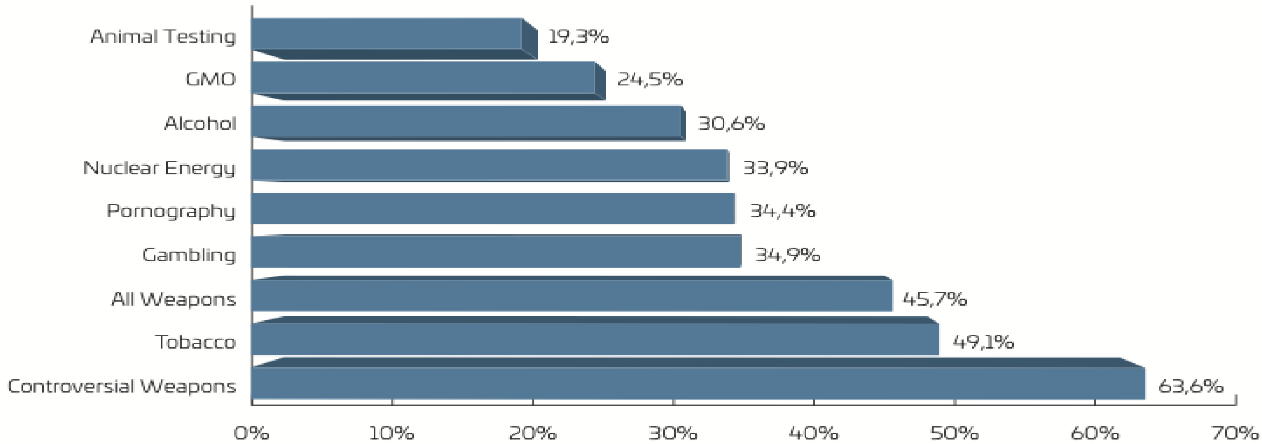
[78] Global Sustainable Investment Alliance. (2019). *2018 Global sustainable investment review*. http://www.gsi-alliance.org/wp-content/uploads/2019/06/GSIR_Review2018F.pdf

a. Exclusion

Investments structured through the strategic process of exclusion, in addition to being the first type of socially responsible solution ever put in place (the first big waves of social investment's decisions were recorded during the last century through a mass divestment from the financial assets of South African companies that supported Apartheid, without considering the already present practice that prevented financing in certain markets, companies, and products due to faith-based reasons), is also the most widespread sustainable decision-making practice adopted today among institutional investors, even though it is gradually slowing down its expansion. This practice is based on negative screening, which is a valuation approach used by investors to align the content of their financial portfolios with their personal ethical values. Doing so, lenders decide to exclude certain companies, industries, or even countries from their investment universe, with the intention of avoiding the association of their name with activities considered morally negative or which could potentially cause damages to the environment or society. Typical examples of industries excluded by institutional investors around the world are those related to the so-called controversial activities, such as the production of tobacco, fossil fuels, weapons, alcohol, nuclear energy, and genetically modified organisms, animal testing, gambling, and the distribution of pornographic material. Graph 2.2 shows the exclusion levels for each industry in relation to the investors' decisions in Europe in 2018.

•Graph 2.2.

Top exclusions criteria in Europe, 2018



Note. Retrieved from http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline. Copyright (2018) by European Sustainable Investment Forum.

In addition to these sectors, negative screening is commonly applied to companies with low ESG scores, thus excluding those enterprises not actively engaged in the development of sustainable and responsible practices. Finally, this business strategy may also exclude entire countries, not considering possible funding for firms or initiatives located in certain nations whose values are not shared by the investment company. Through this approach, indeed, many governments worldwide known as human rights abusers are excluded from foreign financing.

This practice, even if it is based on exclusion criteria, is incredibly inclusive because only the worst realities are not taken into consideration while all the others are considered acceptable, even if their ESG performances are not so noteworthy. Negative screening process is commonly structured through the following steps: first, investors decide what kind of activities will be avoided, by determining the full exclusion of these or setting some applicable materiality thresholds (typically 5% or 10% of revenues) to measure the relevance of these practices in the core business of companies, and then they use some databases to screen the whole investment universe and remove those enterprises which breach the thresholds. Investors can decide even if they want to exclude just those companies whose core business is the development of the controversial activities, thus only manufacturers, or also the ones that distribute the final products of the latter, thus also retailers. This ESG strategy can be implemented not only through the exclusion from the investment choices of the realities that do not fit with investors' ethics, but also through the practice of divestment, through which the capital already delivered to projects and firms that are not performing well in terms of sustainability is retired to be reinvested in other stocks, for example those of sustainable future enablers[79], engaged improvers[80], and companies with positive ESG scores. A special form of divestment, that has been growing exponentially in recent years, concerns the fossil fuel one. This is performed to exclude from investments the enterprises with large reserves of oil, coal, and gas in order to limit the funding for carbon companies and limit greenhouse gas emissions. To date, 22 banks worldwide have excluded coal mine projects from their loan programs and 28 banks have stopped direct financing to initiatives oriented at the construction of new coal plants[81].

Even if this ESG strategy does not constitute the best approach to leave a concrete positive impact on the environment and society, since that for one investor which divests from a stock there is another one that can immediately take its place, it potentially leads to a great improvement in sustainable portfolios' performances, as demonstrated by recent studies which have shown that excluding half of the companies with the lowest ESG scores in Europe improved financial returns for nearly 2.3% per year and removed 1.6% of volatility[82].

b. ESG Integration

The term ESG integration refers to a responsible investment strategy through which the financial institutions, by using various decision-making techniques and analytical tools, include information and issues related to the three ESG dimensions into the financial analysis. To date, more and more private companies, institutional investors, and even governments systematically incorporate the analysis of externalities arising from non-financial issues within the process for the development of more sustainable business models. Indeed, a recent research has shown that between all the companies rated under the Standard & Poor's 500 Index (i.e. the market capitalization-weighted index of the 500 largest listed companies in the United States) about 86%

[79] Sustainable future enablers are economic-financial entities that, bringing a positive contribution in reducing the impacts for both the environment and society, are actively involved in the development of sustainable finance for a better future for all. They typically represent renewable energy providers or medical companies.

[80] Engaged improvers are economic-financial entities that are actively involved in reducing ESG impacts in sectors that are not so developed as regards sustainable and responsible activities.

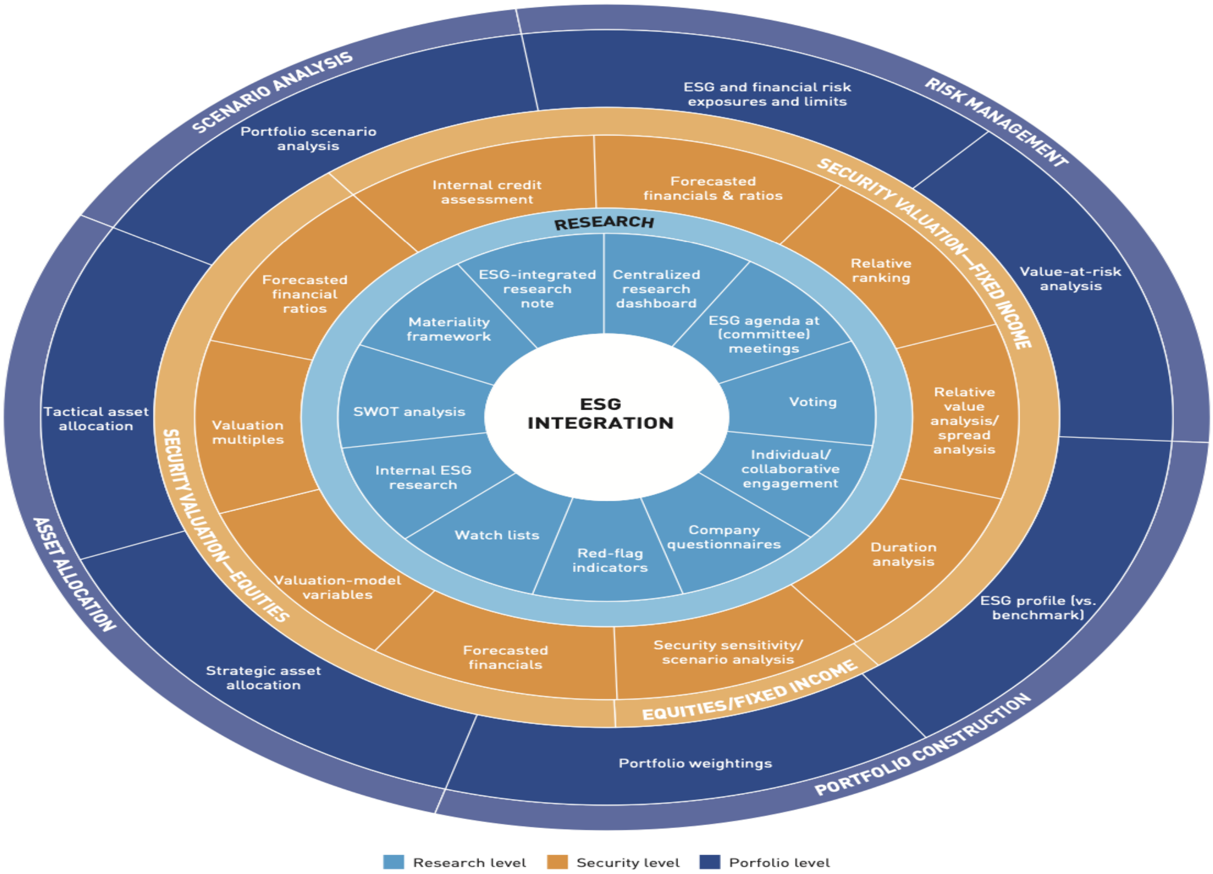
[81] Banktrack. (2020, February). *List of banks which have ended direct finance for new coal mines/plants*. https://www.banktrack.org/page/list_of_banks_which_have_ended_direct_finance_for_new_coal_minesplants

[82] Alex Rolandi. (2019, September 12). *ESG exclusion filter improves performance, study finds*. Funds Europe. https://www.funds-europe.com/news/esg-exclusion-filter-improves-performance-study-finds

of them have reported about sustainability issues related to ESG concerns in 2018[83]. ESG integration is a holistic approach to evaluate the influence of both financial and non-financial factors over the investment's performance and it represents the direct method to respect the first requirement of the PRI. Through this activity, investors worldwide have the possibility to link their business activities with the pursuit of the SDGs, trying to boost the development of cleaner and more transparent economic practices. An integrated approach has the potential of providing the optimal return for the investors, since that it is useful both to identify a wider range of investment opportunities in international financial markets, by recognizing favourable affairs during the selection process for portfolio's securities that otherwise might not have been noticed, and lower the magnitude of risks that could arise from externalities, by balancing the portfolio's risk/return profile in the most appropriate way. Figure 2.1 below, which is a direct elaboration of the PRI together with the Chartered Financial Analyst Institute[84], represents a framework of possible actions that can be implemented by firms and asset managers in order to include ESG factors into the analysis and decision-making process for the development of responsible investments.

•Figure 2.1.

ESG integration framework



Note. Retrieved from https://www.cfainstitute.org/-/media/documents/survey/guidance-case-studies-esg-integration.ashx. Copyright (2018) by Chartered Financial Analyst Institute.

[83] Governance and Accountability Institute. (2019, May 16). *Flash report: 86% of S&P 500 Index® companies publish sustainability/responsibility reports in 2018*. https://www.ga-institute.com/press-releases/article/flash-report-86-of-sp-500-indexR-companies-publish-sustainability-responsibility-reports-in-20.html

[84] The Chartered Financial Analyst Institute is the world's largest community of investment management professionals. Its goal is to develop and expand worldwide effective and ethical investment practices, by encouraging financial managers to address in the best way sustainability-related issues into their decision-making processes.

ESG integration is commonly structured through the following steps: first, investors perform a large research process, by which they collect from internal or third parties' reports both purely financial and ESG-related information and analyse them to capture all possible correlated positive and negative impacts that could actually have an influence on investment performance, and then they adjust their portfolios to make them more resilient to these factors, limiting the risk of unexpected losses or products' devaluation. However, even if every financial institution worldwide should develop a responsible business model by incorporating ESG factors into the financial analysis, a well-integrated approach may always be aligned with the core business of the enterprise, since that this valuation method aims at enhancing the company's performance without sacrificing returns. Through the application of this strategy, companies are also able to reduce operational costs and improve the production thanks to the creation of favourable workplaces.

c. Engagement and Voting

The second principle of the PRI encourages the active ownership practice by including ESG issues into corporate policies. Active ownership indicates the utilization of shareholder's rights in order to influence the investment behaviour of the whole corporation. This approach is implemented through the growing strategy of shareholders engagement and proxy voting, which are two interlinked activities taken in place by investors to create a dialogue with the investee companies and develop together responsible investment policies through that ESG concerns are taken into consideration and are addressed to reduce the relative risks and improve sustainable performances. Engagement indicates that investors and investee firms start a dialogue to decide how to incorporate ESG issues into business models while proxy voting refers to the act of voting in resolutions and general assemblies about the implementation of responsible strategies. This kind of ESG strategy has always been a great success, being seen by individual investors and fund managers as the most direct way to make their voice heard by the whole of an investment company that can also count thousands of owners. Through it, enterprise's sponsors can draw a direct link between their interests and those of the agency at large, working together to develop responsible practises aimed at improving the risk/return ratio of an investment. In 2017, investors developed this approach to manage about €4.8 trillion just in Europe[85].

Engagement practices, which can be developed proactively (when investors wish to establish a dialogue with the investee firm with the aim of providing suggestions on ESG analysis and financial activities) or reactively (when investors decide to communicate with the investee firm to structure actions that address financial and reputational risks arising from any misconduct), are commonly classified into different categories, which are:

- Individual engagement, used by a single investor which works alone to protect its personal interests and communicate with investee enterprise's managers by delivering phone calls, emails, and letters or by meeting them personally.

[85] European Sustainable Investment Forum. (2018). *European sri studies 2018*. http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline

- Collaborative engagement, developed by two or more investors to exercise a greater influence on the investee firm's top management and structure together new responsible investment strategies to address in the best way as possible ESG issues without sacrificing financial returns.
- Service provider engagement, through which investors give a mandate to third commercial organizations specialized in performing engagement practices on their clients' behalf.

The engagement process is commonly structured through the following steps: once the investors have decided what assets in their portfolios have the priority to be personally managed (engagement is a long-term practice that requires a great deal of time and attention to be carried out efficiently and it seems impossible that a single entity can deal directly with too many investments), they start a research process to collect information on data, market trends, risks, opportunities, possible scenarios, and activities regarding the influence of ESG criteria on the chosen products, and then they start a dialogue with the top management of the investee companies in order to structure new policies and business plans aimed at improving the resilience of investments to negative externalities so as to increase the likelihood of achieving positive results without negatively impacting the environment and society.
Investors can also exercise their voting rights to drive changes within the corporate governance of the investee enterprises, for example by making decisions on remuneration policies, dividend distribution, and the composition of the board of directors. The practice of proxy voting (i.e. the form of voting typical of funds, by which the investor delegates a third part to exercise its voting rights during shareholders' assemblies) is commonly used when there is a limited possibility that the engagement strategy will be performed in an efficient manner within a specific context. As well as engagement, there are different voting strategies that differ even based on the type of investor: individual asset owners can exercise directly or indirectly by delegating a manager their votes to decide about the policies that they want to be implemented, while investors involved in pooled funds can exclusively depend on the manager's behaviour, but they still have the possibility to provide advice and suggestions to promote decisions in their best interests. This ESG strategy is not only oriented to the creation of value for the investor but also brings many advantages to the investee companies themselves, as shown in Table 2.1.

•**Table 2.1.**

Mechanism of engagement value creation

VALUE CREATION DYNAMICS	CORPORATIONS	INVESTORS
COMMUNICATIVE **Exchanging Information**	Clarifying expectations and enhancing accountability	Signalling and defining ESG expectations
	Managing impressions and rebalancing misrepresentations	Seeking detailed and accurate corporate information
	Specifying the business context	Enhancing investor ESG communication and accountability
LEARNING **Producing And Diffusing Knowledge**	Anticipating and detecting new trends related to ESG	Building new ESG knowledge
	Gathering feedback, benchmarking and gap spotting	Contextualising investment decisions
	Developing knowledge of ESG issues	Identifying and diffusing industry best practice
POLITICAL **Deriving Political Benefits**	Enrolling internal experts	Advancing internal collaboration and ESG integration
	Evaluating sustainability and securing resources	Meeting client expectations
	Enhancing the loyalty of long-term investors	Building long-term relationships

Note. Retrieved from https://www.unpri.org/download?ac=4637. Copyright (2018) by Principles for Responsible Investment.

d. Norm-Based Screening

The screening methodology applied to the universe of responsible investments is not limited to the exclusion principle but is globally used to assess the compatibility of companies operating in financial markets with minimum standards of business practice based on the relevant international regulations. This particular type of ESG strategy, called norm-based screening, aims to identify those companies with the best sustainable performances and whose activities are perfectly balanced with both host country's regulation and international policies. Through this approach, investors carry out continuous researches and controls on the initiatives undertaken by companies in order to assess the level of sustainability of their financial performances, thus being able to identify also those enterprises already present in their financial portfolios but which operate in contrast with the standards imposed by the international agreements, and consequently being able to choose to implement the practice of engagement, with the aim of inducing firms to adapt to international requirements by changing their business models, or directly that of exclusion, by eliminating from the portfolios all the assets acquired by those companies not aligned with ESG global regulations.

The main reference standards used by investors to carry out norm-based screening within international financial markets are related to agreements concerning the reduction of greenhouse gas emissions to address the problem of global warming and subsequent climate change, the respect for human rights, the improvement of working conditions, and the implementation of anti-corruption policies. The regulations most commonly taken into consideration by financial institutions are: the PRI and the principles set by the United Nations Global Compact; the *Guidelines for Multinational Enterprises* set by the Organization for Economic Co-operation and Development, which are recommendations for institutions that trade internationally and should conduct their business in a responsible way by promoting positive contributions to economic, environmental, and social development all around the world; and the *United Nations Guiding Principles on Business and Human Rights*, which is a set of 31 principles that companies should respect in order to develop their business responsibly, by taking care about working conditions and ensuring the protection of human rights.

The norm-based screening approach is commonly structured through the following steps: first, investors start an in-depth research process to assess if companies are acting in line with the requirements set by the international regulations on ESG matters, by communicating with them and collecting information and data through databases and financials, and then, after having evaluated the correctness of the results, they decide if invest or not in those realities. However, this approach is geared towards constant long-term monitoring, periodically (usually at least every 2 years) verifying that the companies in which investments are made continue to comply with current environmental and social requirements. Therefore, lenders who adopt this ESG strategy take the opportunity to constantly monitor their investments, ensuring that their financial portfolio is always calibrated in accordance with the responsible standards dictated by the international development institutions.

e. Best-In-Class

If, as we have seen, the exclusion ESG strategy consists in a negative screening, the best-in-class practice is based on a positive screening approach. Adopting a best-in-class strategy means that investors look at financial opportunities in those companies which have the best ESG score within a particular industry, sector, or country. This sustainable investment strategy, which is one of the most widespread among financial institutions due to its simplicity and great potential for safe returns, allows lenders to put in their portfolios those companies which have achieved optimal results as regards all the three ESG dimensions. Since a company that is a leader in its sector with regarding the implementation of eco-friendly technologies and green initiatives is usually characterized by a positive financial performance, investors worldwide apply the best-in-class strategy to seek economic opportunities directly related to responsible activities even in sectors that are not commonly identified as sustainable (e.g. the controversial activities mentioned above). This approach can be divided into two categories, which are the best-in-universe and the best-in-effort. The former is used by investors to target the leader firm in terms of ESG score within a particular industry or country at large, making comparisons even among different sectors to choose the best of the best, according to the second one, instead, investors are allowed to invest in those enterprises which have made the greatest sustainable development effort during a specific time horizon (typically one fiscal year).

Best-in-class approach is commonly structured through the following steps: first, investors define the criteria that should be applied to choose the main feature to be considered in order to identify the best companies in the industry (an investor may decide to give more importance to the environmental performance rather than social or governance ones, since it can be difficult for a single firm to be a sector leader having the best results in all the three subjects), and then they can invest in the best institutions identified, constantly monitoring both the ESG and financial trend followed by them over time. Through this approach, indeed, lenders may look at both sustainable and economic aspects, trying to interlink the need for a more responsible way to structure investments with the principal need of gaining a financial return.

Through this approach, financial institutions worldwide can encourage firms in different industrial sectors to develop new policies and instruments to address in the best way ESG issues, since that the ones which perform better in terms of sustainability have a higher competitive advantage with respect to the other firms in the same context. They also have the potential to influence other financial entities, encouraging a wider expansion for the channel of sustainable finance. Investors which target best-in-class companies could face fewer financial risks because these firms, through the adoption of sector's best practices, can be able to cut environmental overhead expenses, incur in fewer penalties resulted from damages to ecosystems and territories, and also avoid many legal problems linked to ESG issues.

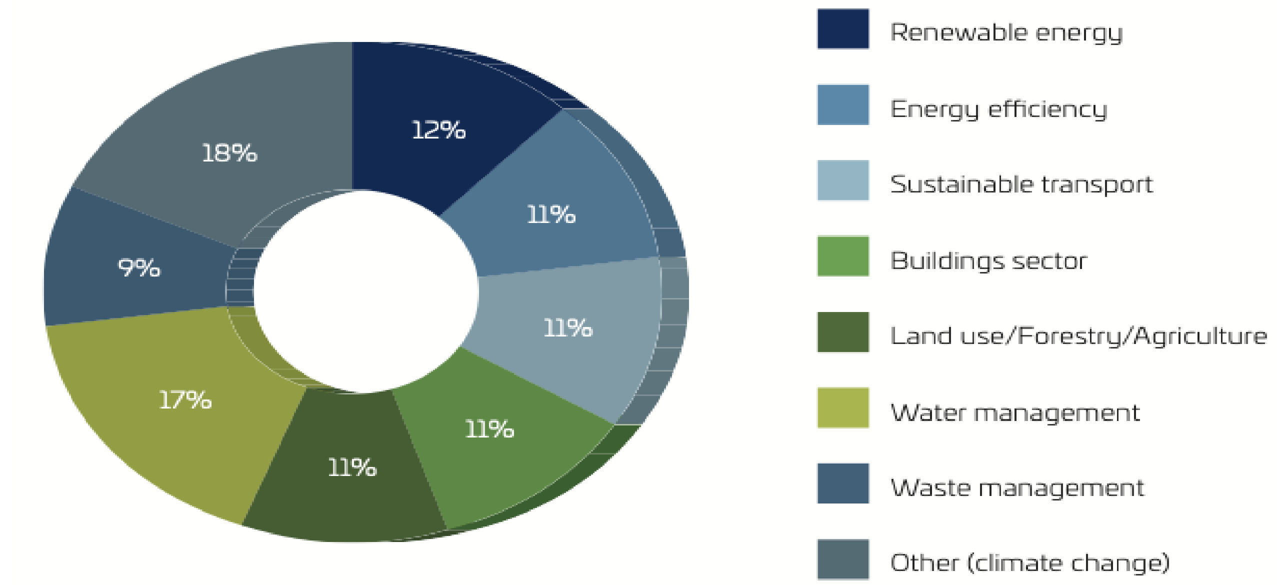
f. Sustainability-Themed

This ESG strategy consists in investments in themes or assets linked to the development of sustainability. Thematic funds, indeed, focus on specific or multiple issues related to ESG. Sustainability-themed investments inherently contribute to addressing social and environmental challenges such as climate change, eco-efficiency, and health. Through this approach, institutional investors, governments, and international organizations can directly face the biggest challenges of this century trying to gain a positive result under a financial point of view and also boosting the enhancement of living conditions worldwide by investing in sustainable projects. Sustainability-themed investments and funds are becoming an important and diffused solution nowadays to take a common action through the world of finance against problems as extreme poverty and climate change, so much that this ESG strategy showed the biggest growth during the last decade if compared with the other sustainable approaches (a 25% growth in assets under management in Europe from 2009 to 2017[86]). This is the perfect strategy for those financial entities that want to invest in companies whose work is useful for the growth of common welfare. Indeed, this kind of financial activity is necessary to establish the foundations for sustainable development worldwide. Graph 2.3 shows what are the main typologies of sustainability-themed investments in Europe.

[86] European Sustainable Investment Forum. (2018). *European sri studies 2018*. http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline

•Graph 2.3.

Sustainability-themed investments



Note. Retrieved from http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline. Copyright (2018) by European Sustainable Investment Forum.

Sustainability-themed approach is commonly structured through the following steps: first, investors select the area in which they want to invest choosing the benefits that they want to offer to the community, for example by deciding to deliver funds in the water supply sector or in the renewable energy research and development industry, and then they start a research process to target those companies that are aligned with their sustainable intents in order to invest in them, seeking for financial returns and trying to leave a positive contribution for society and the world at large. This strategy is often linked with that of the best-in-class described above, since that usually companies that have optimal ESG scores are the main developer of sustainable and responsible initiatives aimed at meeting the SDGs.

g. Impact Investing

Although the above practices are all structured through the inclusion of ESG criteria into the financial analysis in order to not negatively impact the environment and society, their main objective is to produce a positive long-term return, that is above the market level, for the investor. In recent years, however, more and more economic entities, especially institutional investors, have begun to structure financial activities specifically geared to offer both tangible and transparent social and environmental benefits first and foremost, trying to bring the concept of finance closer to that of sustainability with the aim of trying to more decisively reach the SDGs as soon as possible. Impact investing practice, which is therefore slightly different from that of the purest responsible investing, has grown enormously since the launch of the international agreements aimed at building a better world (a 52% growth from 2011 to 2017 just in Europe, with the biggest jump in the total amount of the correlated assets under management equal to an increment of 385% during the biennium

2013-2015[87]), accounting today nearly $502 billion in impact assets managed by more than 1,300 organizations worldwide, an sum representing almost double the amount of money allocated the previous year for the same type of financial activity[88]. The Global Impact Investing Network[89] indicates that an impact investment is structured through four main characteristics, which are:

- The intentionality of the investor to generate a positive and measurable environmental and/or social impact to address the biggest common challenges principally with the intention of creating a world that is healthier and easier to live in.
- The utilization of reliable data and observable evidence on the problems to be faced in order to better design the structure of the investment, so as to have more concrete possibilities to achieve results that are really useful to the community.
- The constant management of impact performance to reassure that the investment is always in line with the initial idea behind which the initiative was launched, thus to create an information network where investors can receive feedback and advice on how best to develop their impact activities.
- The contribution to the industries' growth, that is necessary to best pursue sustainable development around the world.

Impact investing, therefore, offers financial solutions with returns in line or below the market returns (only 67% of impact investors seek to gain financial returns that are not below the market level[90], a demonstration of the primary difference between this strategy and the other ones) but in any case at least equal to the initial capital invested, to social and environmental needs by measuring the impact as the change in the outcome caused by the initiative itself.

This strategy is strongly oriented to generate inclusive economic growth, having the potential both to strengthen and develop social entrepreneurship through a new flow of capital invested according to the impact logic, and to improve financial and social transparency standards. Impact investments can also lead to an improvement in the efficiency and effectiveness of public spending on welfare services, in particular for preventive interventions. The majority of investors which aim to make a truly measurable positive impact on society carry out a process of capital allocation in both companies and initiatives aimed at addressing topics such as job placement, housing distress, the fruition of educational services, the reintegration of prisoners, enhancement of culture services, child and elderly care, and many other areas of social interest especially in

[87] European Sustainable Investment Forum. (2018). *European sri studies 2018*. http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf?mod=article_inline

[88] Mudaliar, A., & Dithrich, H. (2019, April). *Sizing the impact investing market*. Global Impact Investing Network. https://thegiin.org/assets/Sizing the Impact Investing Market_webfile.pdf

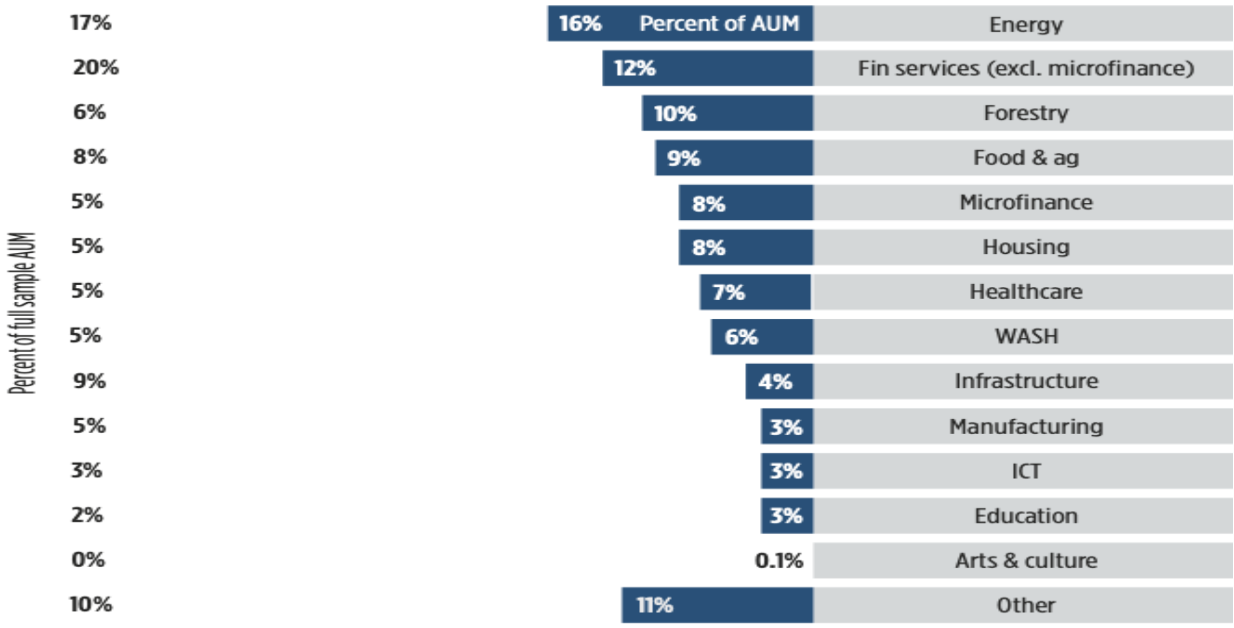
[89] The Global Impact Investing Network is the most important international organization in the field of impact investing. Its goal is the promotion of this ESG strategy all around the world by developing strategic alliances and encouraging new financial activities aimed at expanding the allocation of capital in initiatives and companies whose core business is principally the research for a positive result socially standpoint.

[90] Hand, D., Dithrich, H., Sunderji, S., & Nova, N. (2020, June). *Annual impact investor survey 2020*. Global Impact Investing Network. https://thegiin.org/assets/GIIN Annual Impact Investor Survey 2020.pdf

developing countries, while to provide a positive impact on the environmental dimension lenders finance projects and foundations whose core business is the improvement of renewable energies' production, access to water, recycling and waste management, sustainable agriculture, reforestation, and forest management. Graph 2.4 shows the percentage of impact assets under management by sector of investment, useful to understand how financial organizations actually try to make a positive contribution to society through the development of certain sectors.

•Graph 2.4.

Impact asset allocation by sector



Note. Adapted by https://thegiin.org/assets/GIIN_Annual_Impact_Investor_Survey_2020.pdf. Copyright (2020) by Global Impact Investing Network. "Other" includes sectors as real estate, tourism, community development, retail, and sector agnostic investments.

Based on the analysis of the sectors where more impact investing strategies are implemented, there are nowadays five main emerging industries through which financial entities seek to bring social and environmental benefits, namely renewable energy, welfare services, sustainable agriculture and forest management, microfinance, and social housing.

The renewable energy industry (i.e. the set of companies that produce inexhaustible energy shares from natural processes, such as the wind and sunlight) is the main sector through which impact investors put in place financial activities directly to address and limit the threat of climate change. Through investments aimed at exerting a measurable impact on this sector, it is possible to have decidedly favourable social-environmental benefits, such as the improvement of air quality due to a reduction in CO_2 emissions into the atmosphere, the creation of new jobs to increase production in the photovoltaic, wind, and hydroelectric sectors, and a growing distribution of low-cost energy, from which world economic growth can result.

Welfare services (i.e. the set of initiatives, goods, and services made available by governments and companies as income support to increase the spending power, health, and well-being of their citizens and employees) are a privileged channel to bring substantial benefits to the community. Through increasing cooperation between the public and private sectors, there have become many opportunities for investment in finance with an impact in this field, such as the possibility of making significant improvements to pension and social insurance systems in those countries where these services are not yet adequately developed, creating a long-term savings' system without excessive outlay, and encouraging the flow of capital in support of social programs.

Forest investments (i.e. the acquisition and management of a timber forest or a security underlying this activity) are an interesting scope of impact investing, as are agricultural ones. Initiatives whose main purpose is to promote a correct and cleaner management of forests and arable lands not only bring about a net cut of the operational coastlines linked to the above-mentioned activities, but also have a positive impact both on the food production and on the air quality of the planet, allowing a decline in CO_2 levels with a consequent decrease in the erosion effect and greater protection of biodiversity.

The microfinance sector, which brings together all the financial services and products specifically structured to be offered to companies with a socio-economic status that overwhelms their access to capital markets, is constantly being targeted by investors willing to bring about greater financial and social inclusion. Through investment in initiatives aimed at increasing the bargaining power of micro-enterprises (See Ch. 3, para 3.1) and craft workers, many small businesses, especially those located in developing countries and which could not have developed on their own, can have access to the tools and solutions needed to undertake a process of economic growth both within local and international markets.

In addition to be a global priority, improving the production and distribution of energy-efficient and affordable housing for the lower-middle classes is a great opportunity for impact investors, which have already started to take their first steps in the so-called social housing channel. This practice was created to help families that cannot afford to buy or rent a home on the housing market, not even by granting mortgages or entering the social housing league table. Through this service, investors are able to offer significantly better living conditions for the most fragile segment of the population by boosting the production of low-polluting houses, thus bringing concrete social and environmental benefits.

Through the implementation of this innovative ESG strategy and the correct application of the PRI, financial investors and asset managers have the concrete chance to leave their mark within the sustainable development process undertaken in recent years and that is necessary to address the current global challenges, by aligning moral and ethical values with economic purposes in order to change the investment culture and achieve a broader expansion of the impact finance channel as soon as possible. Traditionally, indeed, the common opinion has always been based on the idea that investments could lead exclusively to a financial return, creating economic value through a defined finance-first perspective (typical of for-profit entities), or to a return for the community and the environment, creating a social value through an impact-first perspective (typical of no-profit organizations and governments). Thanks both to the millennia generation, which is the most motivated to encourage a process of transition from responsible finance to impact finance, and to the change in demand for financial products and services, which must meet increasingly stringent sustainability standards, this concept of "*doing good or doing well*" is exponentially leaving room for "*doing good while doing well*".

2.2 A Special Focus on the Strategy of Impact Investing and Future Implications

Seeing that, among all seven ESG strategies defined by the European Sustainable Investment Forum, the impact investing practice is the one growing most during these years, besides being globally recognized as the financial approach with the highest potential to achieve noteworthy results aimed at satisfying both the SDGs and the objectives imposed by the *Paris Agreement*, it is useful to understand how this investment method will have to develop in this decade in order to achieve economic and social progress by 2030. According to the *Roadmap for Future of Impact Investing*[91] developed by the Global Impact Investing Network, the practice of impact investing represents the key solution to drive the world of finance towards those changes within international financial markets that are necessary to create a better world in the near future with the aim of avoiding harmful consequences derived by climate change, extreme poverty, and all other global challenges that humanity is facing today. First of all, each investment in financial markets worldwide should contribute to positive impacts both on society and the planet, always incorporating ESG concerns into decision-making processes by default and consequentially eliminating forever the consequences and risks that are correlated to these three dimensions. Then, a process of broader inclusiveness needs to be started in order to increase the accessibility to impact practices and tools for a wider group of financial entities, thus encouraging the launch of more financial activities aimed at providing both economic and social advantages. Finally, there is a special need for the creation of a common standardized framework where investors can share information about their activities and the correlated results achieved in order to establish a defined useful set of approaches for easier perform and understand the impact investing methodologies. The Roadmap indicates a set of actions, channelled in the six main categories shown in figure 2.2, that must be implemented to achieve these changes and start the process to meet the SDGs and the *Paris Agreement*'s targets through impact investments.

•Figure 2.2.

Six categories of impact actions

Note. Retrieved from https://thegiin.org/assets/GIIN_Roadmap for the Future of Impact Investing.pdf. Copyright (2018) by Global Impact Investing Network.

[91] Bouri, A., Mudaliar, A., Schiff, H., Bass, R., & Dithrich, H. (2018, March). *Roadmap for the future of impact investing: Reshaping financial markets.* Global Impact Investing Network. https://thegiin.org/assets/GIIN_Roadmap for the Future of Impact Investing.pdf

All these actions require collective work by as many stakeholders as possible, thus encouraging more partnerships between institutional investors, governments, policymakers, non-profit organizations, foundations, international development organizations, and any other economic-financial entity, in order to establish a climate of global cooperation aimed at achieving a common goal, identified as the evolution of the current financial markets into catalysts for standardized impact investments, so as to turn the world of finance into the main vehicle through which it can be really possible to make positive changes throughout the planet. The six categories comprise a set of 18 actions that must be implemented in the near future to improve the accessibility, feasibility, and transparency of the impact investing channel within financial markets worldwide thus incorporating forever and easily ESG issues into investment decisions and achieve a broad sustainable development by 2030.

The first set of activities directly aims at reinforcing the identity of impact investing, since that as a relatively new subject (the term impact investing was first coined in 2007 by the Rockefeller Foundation[92]) the limits within it should be inserted have not yet been focused. There is, indeed, an urgent need to create a reference framework at the international level for this type of sustainable investment, dictating precise rules and evaluation standards so that each financial entity can better understand all the opportunities, risks, and benefits deriving from the implementation of this activity. Launching a process in the financial markets geared towards the creation of a regulation for impact investing not only means facilitating access to this kind of solution, but above all helps to expand in-depth knowledge about both the nature and characteristics of this ESG strategy, avoiding information asymmetries and thus attracting the attention of a wider group of investors. The actions linked to this purpose are: the establishment of principles for impact investing in order to define the figure of the impact investor not only as a responsible lender which want intentionally to leave a positive social impact, but creating an ad-hoc regulation for this topic; the sharing of the best practices for the evaluation, management, and reporting of impact initiatives, since that is fundamental to have a range of standardized instruments for the impact evaluation in order to measure objectively the performance of the investments and the progress made to achieve the SDGs, as well as the definition of concrete practices is required; and the clarification about the uses of different kinds of capital instruments as regards this strategy to help stakeholders structuring the investment that best fits with their needs.

The second set of activities aims at encouraging the intervention of governments and public organizations in the impact investing dimension through the definition of incentives and concessions for those entities which intend to structure financial activities oriented at creating benefits for society and the environment. The establishment by central banks worldwide of programs aimed at allocating assets and capital at advantageous conditions for organizations of the impact-first type is also considered necessary, so as to definitively guide the transformations process towards a finance based on sustainability as well as mere economic profit. The actions linked to this purpose are: the alignment of incentives with impact strategies, seeing that, if for certain

[92] The Rockefeller Foundation is an American organization created in 1913 and financed by both private and public investments, whose main scope is to leave an impact in the world by fighting the extreme poverty and sharing prosperity through philanthropic activities.

impact targets there is additional capital allocation, institutions may be more motivated to launch investments of this kind and pursue better results; the launch of an initiative oriented at changing the modern idea about the role of capital, erratically recognized in most cases only as an instrument by which to gain economic value, when in reality is the main vehicle with which more than positive changes in general living conditions worldwide can be made; and the modernization of the classic investment theory, since that to date the principal paradigms to evaluate investments opportunities consider only the two dimensions of risk and return, excluding the impact one.

The third set of activities aims at creating new financial products and services for impact investing, by structuring different solutions for each type of stakeholder and attract more capital. The production of a wider range of instruments designed to meet all the needs and preferences of different investors is certainly a move that will lead to an increase in the amount of impact investments in future years. The actions linked to this purpose are: the creation of impact products for retail investors, because the common action against the modern challenges requires the intervention of everyone; the expansion of more sophisticated impact instruments for institutional investors thus addressing the increasing demand for these products by funds and investment vehicles; the commitment of more capital to emerging fund managers in order to help them grow faster so they can provide greater positive impacts through their investments and contribute to the creation of a broader impact investing market; and the creation of advanced blended-finance vehicles (i.e. donated funds for the construction or refurbishment of working facilities, the implementation of investment initiatives, and the launch of new research and development projects), which are the principal instruments through which investors develop financial activities with the aim of leaving a positive impact on society without looking for a return above the market level.

The fourth set of actions aims at developing tools and services through which the impact of an investment can be measured day-by-day to evaluate the results derived from it. There is a need to establish impact rating systems and key performance indicators (See Ch. 2, para 2.3) to objectively observe if financial initiatives which are oriented to leave a positive mark on society and the environment are performing well or changes need to be applied. The creation of a global framework for the evaluation of impact investing is also useful to encourage a wider exchange of information about the best practices among investors. The actions linked to this purpose are: the development of calibrated ratings and scores for impact investments since that establish objective considerations for different market segments seems necessary to correctly evaluate the contribution of each organization in addressing the global challenges with respect to their possibilities; the elaboration of analyses and allocation solutions which, in addition to risks and returns, allow investors to incorporate in the decision-making processes also the impact dimension, helping them to understand efficiently all the opportunities and threats linked with their activities; and the expansion of impact investment banking services worldwide in order to meet the growing demand for this kind of solutions.

The fifth set of actions aims at boosting the education and training of both financial professionals and business managers through graduate programs and certifications about impact investing. Human capital is at the foundations of the whole process for the creation of a better world for all and it is, therefore, necessary to start a training process in business schools and also within organizations for the managers of the future who, unlike those of the past, will have to face every financial problem looking not only at risks and returns, but also at the impacts of the activities carried out. The actions linked to this purpose are: a training process for finance professionals through webinars, technical teaching, on-field works, university courses, and refresh courses, so the increasing number of clients which look for advisors skilled in the practice of impact investing will be satisfied; and the support for the development of both impact organizations and projects through the improvement of building capacity for business managers, useful to expand the impact investing universe.

The last set of activities aims at encouraging international governmental organizations structure new policies to regulate global financial markets about this practice and incentivize its implementation. Historically, the establishment of specific requirements and laws defined by policymakers has triggered significant growth in regulated markets, so this phenomenon can also benefit the impact investing channel. The actions linked to this purpose are: the clarification about fiduciary duties with respect to ESG issues, since that, as already stated in the first chapter of this dissertation, there is no a common belief among asset managers on this topic, although it is necessary to state again that the obligation to take any action in the interest of the client is also translated into the incorporation of negative externalities' concerns related to the environment and society in order to avoid unexpected losses and reputational damages; the establishment of tax incentives for impact investments, to encourage more and more investors to take advantage by this activity even under a fiscal point of view; and the creation of an international climate that promote this practice, which directly results from the above actions.

2.3 The Evaluation of ESG Performance: State of the Art and Main Tools Developed

Like any other form of financial activity, responsible investments require constant monitoring of their performances and conclusive assessment to determine whether the results are in line with the initial expectations and whether they have actually led to profitable returns that will help companies grow both financially and sustainably. In this regard, a process of development of principles and standards for the measurement and evaluation of corporate ESG performance has already been initiated in previous years, but there is still much work to be done. As described in the previous paragraph, it is indeed necessary to make available worldwide a common system of evaluation and reporting that is as unambiguous as possible, so to facilitate comparison between enterprises through objective and comparable criteria within a defined regulatory framework on sustainability. To date, there are several ESG rating agencies and independent firms that offer within international markets their tools and services in order to help companies evaluate the alignment of their investments with the SDGs and if they are acting correctly to avoid harmful consequences for society and the environment. The most commonly used and effective method to measure the level of sustainability of a corporation is the ESG rating, which also allows investors to compare the various economic-financial entities on this aspect. This solution is very similar to credit rating[93] process, indeed they work in a similar way: companies interested in communicating their quality through an independent analysis, so as to be able to present their characteristics as objectively as possible, sign contracts with third-party agencies specialized in assessing sustainability merit and these undertake to evaluate the information and data both provided by the organizations and publicly available in order to make a final judgment according to ESG criteria, giving a score that reflects their position in financial markets compared to other corporations with regard to the level of sustainability of business models.

The rating agencies most commonly relied on by most companies to assess externally their performance in relation to responsible investing are Standard and Poor's Global Rating, Sustainalytics, MSCI, and State Street Global Advisors.

Standard and Poor's Global Rating is the rating division of Standard and Poor's Global, that is an American publicly traded agency whose core business is the collection of financial information and data. Currently recognized as one of the top three rating agencies in the world, it offers two different solutions to assess the level of compatibility of companies' financial activities with sustainability standards that should be met worldwide to best address ESG problems, which are the *ESG Evaluation* and the *SAM Corporate Sustainability Assessment*. The first tool measures enterprises' responsible business models and their ability to face eventual risks and opportunities linked to ESG topics in the future. This is a cross-sector analysis of how company manage their business activities under sustainability considerations and it is useful for both financial entities themselves and their investors since that through the assessment of the ESG performance a company can evaluate if it is performing well and understand what are its areas of weakness and strength, which is useful to improve its risk management process, but also attract more capital from stakeholders which, on the other hand, have the possibility to understand better the company's ESG strategy and evaluate if investing in that reality will provide both financial and social benefits. The performance evaluation, which will result in a score in hundredths with increasing positive value, is carried out through the assessment of both the firm's ESG profile and its preparedness. The first one indicates how the company incorporates ESG criteria into its investment operations and what are the principal risks and opportunities linked to the three dimensions in relation to the country and sector where it operates by using the *ESG Risk Atlas*, that is an online infographic developed by Standard and Poor's Global Ratings which comprises data and information about both sector and country ESG risks from all around the world. For each dimension, there are several considerations that contribute to the evaluation of the company's profile, which are:

- The level of greenhouse gas emissions, the quality of the waste management, the use of water, and the use of land for the environmental dimension.

[93] A credit rating is the evaluation of companies based on their credit risk, so it is useful to predict their ability to repay their obligations and avoid situations of default. The credit score is usually assessed by third-party companies, called credit rating agencies, in order to ensure the objectivity of the measurements.

- The level of diversity within the workforce, the quality of the safety management, the policy about customer engagement, and the way by which the firm relates with communities for the social dimension.
- The internal organizational structure, the ethical code, the reports' transparency and accuracy, and the quality of the cybersecurity systems for the governance dimension.

The preparedness refers to the company's capacity to anticipate and adapt to unexpected harmful situations that could arise in the long-term and also to its ability to taking advantage from growth opportunities that could derive from market shocks and demand changes during the future. The *SAM Corporate Responsibility Assessment* instead is an instrument used to evaluate the companies' sustainability performance over one year which analyse how ESG concerns are addressed in financial activities. It identifies the firm's ability to face non-financial risks that have relevant economic consequences and provides a score from zero to 10 about this consideration by adjusting it through an industry-specific component (based on information provided by the Global Industry Classification Standard, which recognizes 69 different industries within financial markets worldwide[94]), thus allowing investors to recognize sustainability leaders with strong financial resilience across all different industries. This tool collects data directly from companies, by having them fill in a questionnaire relating to their responsible behaviour over the fiscal year, but also indirectly from public media and online databases. The final score will result from the sum of the scores assigned to each question in the questionnaire adjusted by a predetermined weight for each ESG dimension. This solution, that is correlated also with the *ESG Evaluation*, to date covers more than 7,300 companies worldwide, which held the 95% of the global market capitalization[95].

Sustainalytics is an international agency headquartered in Amsterdam whose core business is the ESG rating for companies' performance. It offers an evaluation tool through which companies can measure the risks linked to ESG factors in relation to their sustainable performance, so assessing their ability to create and protect value through responsible business models and correct management of non-financial dimensions. This solution, called the *ESG Risk Ratings*, provides scores for companies, always taking into consideration the industry where they are inserted, in order to both help investors comparing them and allow enterprises understand if they are correctly managing ESG risks. Companies are classified in five categories (negligible, low, medium, high, and severe) with regarding the score attributed to their risk exposure, which goes from zero to 100, with zero equal to risk-free and 100 being the most severe. The annual evaluation is based upon the measurement of two dimensions, which indeed represent firms' exposure to ESG issues and how well they are managing the latter, by calculating the companies' final score as the sum of three parameters that reflect the quality of the corporate governance, the magnitude of the material ESG issues related to a specific industry, and the influence of idiosyncratic issues, which are those problems that can arise in each type of industry and so are

[94] MSCI. (2020). *The Global Industry Classification Standard (GICS®).* https://www.msci.com/gics
[95] Holbrook, E. (2020, May 18). *S&P launches ESG scores based on 20 years of corporate sustainability data*. https://www.environmentalleader.com/2020/05/sp-launches-esg-scores-based-on-20-years-of-corporate-sustainability-data/

the most unexpected. Not all risks are considered for the final calculation, since that there are some unmanageable risks which are factored out because it is impossible to avoid them. Through this method, corporations' ESG performances are so evaluated by looking at the unmanaged risks that firms should assess if they want to act in the most responsible way as possible. To date, ESG Risk Ratings is used for the annual ESG performance's evaluation of nearly 11,000 companies by using 40 different industry-specific ESG factors, being one of the most utilized risk assessment solution within international financial markets[96].

MSCI is an American corporation headquartered in New York which acts as an external global provider for financial institutions and helps them in the evaluation, management, and reporting of financial and non-financial matters. It evaluates companies' sustainability performance through its *ESG Ratings Methodology* that, similarly to the Sustainalytics' one, measures if the responsible business models adopted by firms are efficient and correctly structured to face, without harmful consequences, unexpected ESG risks that can arise in the long-term. Through the assessment of both firms' financial and ESG performance, MSCI indicates leaders and laggards within different industries, rating them by using a seven-point scale that goes from the lowest score of CCC to the highest one of AAA. The evaluation process is carried out by more than 200 analysts together with the use of artificial intelligence that collects data and information from alternative sources, such as public online datasets and media's reports, in order to assess the companies' preparedness for future possible negative externalities. The whole process is based upon the measurement of risks and opportunities linked to each ESG dimension, divided into 10 themes and 37 key issues, which are listed in Table 2.2 below.

•Table 2.2.

MSCI ESG key issue hierarchy

THREE PILLARS	10 THEMES	37 KEY ISSUES
Environment	Climate Change	Carbon emission - Product carbon footprint - Financing environmental impact - Climate change vulnerability
	Natural Resources	Water stress - Biodiversity and land use - Raw material sourcing
	Pollution And Waste	Toxic emissions and waste - Packaging material and waste - Electronic waste
	Environmental Opportunities	Opportunities in clean tech - Opportunities in green building - Opportunities in renewable energy
Social	Human Capital	Labour management - Health and safety - Human capital development - Supply chain labour standards
	Product Liability	Product safety and quality - Chemical safety - Financial product safety - Privacy and data security - Responsible investment - Health and demographic risk
	Stakeholder Opposition	Controversial sourcing
	Social Opportunities	Access to communications - Access to finance - Access to health care - Opportunities in nutrition and health
Governance	Corporate Governance	Board – Pay – Ownership - Accounting
	Corporate Behaviour	Business ethics - Anti-competitive practices - Tax transparency - Corruption and instability - Financial system instability

Note. Adapted from https://www.msci.com/documents/1296102/14524248/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+2019.pdf/2dfcaeee-2c70-d10b-69c8-3058b14109e3?t=1571404887226. Copyright (2018) by MSCI.

[96] Sustainalytics. (2020). *ESG ratings & research*. https://www.sustainalytics.com/esg-ratings/

The final rating is calculated as the weighted average of the scores attributed to these key issues, adjusted through an industry-specific component. Each key issue is proportionally weighted in relation to the sector to which the company whose sustainability performance must be assessed belongs. Today more than 8,500 enterprises are rated through this tool[97].

State Street Global Advisors represents the investment division of State Street Corporation, that is the second-oldest American public bank and it is one of the largest financial service providers in the United States. Recognized as the third largest asset manager worldwide, in 2019 it launched an evaluation tool called *R-Factor™*, where R stands for responsibility. This instrument measures companies' ESG performance by collecting a wide number of data and information about the sustainable practices carried out by firms, both through internal reports and publicly available documents. Through the assessment of business operations and governance policies, a listed corporation receives a final score that is calculated by applying the rules defined by the Sustainability Accounting Standard Board (See Ch. 1, para 1.1) for the evaluation of those social and environmental components that have the capacity for influencing the long-term financial value while the governance ones are measured by applying the corporate governance code that regulates this subject within the country of the evaluated company. The 26 key issues defined by the Sustainability Accounting Standard Board are shown in Figure 2.3.

•Figure 2.3.

Sustainability Accounting Standard Board's materiality map

Note. Retrieved from https://www.sasb.org/standards-overview/materiality-map/. Copyright (2018) by Sustainability Accounting Standard Board.

This rating system helps both the companies in the enhancement of their ESG performance by defining their area of weakness, so they can develop new practices to improve their score and perform their activities more responsibly, and investors in the choice of their capital allocation, by helping them understand better what firms have the highest sustainability performance and so recognize the best opportunities in financial markets.

[97] MSCI. (2020). *ESG ratings*. https://www.msci.com/esg-ratings

In addition to relying on the various external rating agencies, including those mentioned above, companies can independently evaluate the performance of their responsible investments through continuous monitoring and measuring the results achieved by verifying if these are in line with pre-determined parameters linked to ESG considerations, called sustainability key performance indicators. These standards help firms understand if they have efficiently performed their financial activities, quantifying the success that investments have had in relation to performance targets set in advance, but they are also extremely useful for correcting misconducts in the course of work since, through a careful check on the progress of activities guided by the study of the key performance indicators, companies can make changes to their operating processes in order to improve their sustainable performance. Key performance indicators should be: accessible, since that they are the best proxy to understand if a company is performing well, and so they should be easily understood by everyone; relevant, namely they can offer a comprehensive vision about the most important business matters and be useful to reflect both financial and ESG performances; responsive, since that they should represent the major areas of concern for companies; and comparable, giving the possibility to verify how a firm is performing in relation to its industry's average standards. According to the need for the creation of an international framework of ESG standards, the Deutsche Vereinigung für Finanzanalyse und Asset Management has identified nine general ESG indicators that can be applied to all companies in every industry together with the correlated key performance indicators, showed in Table 2.3 below.

•Table 2.3.

Overview of general ESGs and their key performance indicators

ESG	KEY PERFORMANCE INDICATORS (KPIs)
ESG 1. Energy Efficiency	KPI 1.1 Total energy consumption
	KPI 1.2. Specific energy consumption (per unit of revenue, per employee, per unit of production volume)
ESG 2. Greenhouse Gas Emissions	KPI 2.1. Total greenhouse gas emissions
	KPI 2.2. Specific greenhouse gas emissions (per unit of revenue, per employee, per unit of production volume)
ESG 3. Staff Turnover	KPI 3.1. Percentage of employees leaving per year/Total employees
ESG 4. Training And Qualification	KPI 4.1. Percentage of trained employees per year/Total employees
	KPI 4.2. Average expenses on training per employee per year
ESG 5. Maturity Of Workforce	KPI 5.1. Age structure/Distribution (number of employees per age group, 10-year intervals)
	KPI 5.2. Percentage of workforce to retire in next 5 years
ESG 6. Absenteeism Rate	KPI 6.1. Number of man-days lost per employee per year
ESG 7. Litigation Risks	KPI 7.1. Expenses and fines on filings, lawsuits related against anti-competitive behaviour, anti-trust and monopoly practices
	KPI 7.2. Reserves on preventive measurements against anti-competitive behaviour, anti-trust and monopoly practices
	KPI 7.3. Total additional litigation payments
	KPI 7.4. Reserves of additional litigation payments
ESG 8. Corruption	KPI 8.1. Percentage of revenues in regions with Corruption Perception Index below 6.0
ESG 9. Revenues From New Products	KPI 9.1. Percentage of revenues from products at end of life-cycle
	KPI 9.2. Percentage of new products or modified products introduced less than 12 moths ago

Note. Adapted from http://webcache.googleusercontent.com/search?q=cache:Ty17_lbbEgUJ:ec.europa.eu/DocsRoom/documents/1547/attachments/1/translations/en/renditions/pdf+&cd=1&hl=it&ct=clnk&gl=it&client=safari. Copyright (2009) by Deutsche Vereinigung für Finanzanalyse und Asset Management.

These key performance indicators should be assessed by all companies, but there is also a list of sector-specific considerations indicated in relation to the following five principal areas: Industrial Transportation, Automobiles, Electricity Utilities, Banks, and Nonlife Insurance. Each corporation selects the key performance indicators that best fit with their sector, assessing constantly if they are able to satisfy the minimum requirements internationally suggested to avoid harmful consequences on society and the environment. A corporation can choose the number of predetermined indicators in relation to its sustainability commitment, thus entering one of the three different levels of ESG disclosure commonly recognized, that are the entry level (around 10 key performance indicators), the mid-level (minimum 10 key performance indicators plus other ones from 10 to 20), and the high level (minimum 20 key performance indicators plus 10 or more ones)[98].

A company that decides to rely on external rating agencies to evaluate its ESG performance should be sure that all the information and data provided to these organizations are reported periodically in a correct manner, as well as a firm that decides to evaluate its responsible investments internally should ensure that all the collected observations are correctly reported and ready to be used for performance's measurement. Generally, to ensure a high-quality reporting about ESG considerations, all reports' information must be:

- Relevant, since that only objective data about topics that are influential for the economic value should be listed thus to both reflect investors' expectations about responsible investing in a specific industry and avoid the confusion that can arise from the listing of too much information.
- Transparent, namely all data can be quantified, analysed, and explained in a right and easy way, helping investors and third institutions compare results from different companies in the same sector, industry, and country.
- Recent, so to reflect the actual status of the corporation and be sure to avoid the listing of non-necessary data.
- Consistent with both internal and external dynamics, offering time series of data and not isolated components in order to favour an easier understanding of the evolution of the company's performance over time.

For what concern ESG reporting tools, there are many standards at the international level, but the largest global guidance of this kind is offered by the *PRI Reporting Framework*. As stated in the previous chapter, all the financial institutions that have adopted the Principles must submit a mandatory due diligence questionnaire on their responsible investing practices two years after signing, as stated by the sixth Principle itself. This tool, that is structured to ensure the transparency and accurateness of the relevant information, is composed by 13

[98] Federation of European Accountants. (2011, May). *Environmental, social and governance (ESG) indicators in annual reports: An introduction to current frameworks*. https://effas.net/pdf/cesg/ESG_indicators_in_annual_reports_An_introduction_to_current_frameworks_1105_Colour2652011551650.pdf

modules, whose only three of them are mandatory for every signatory[99]. The latter include: the Organizational Overview Module, the Strategy and Governance Module, and the Closing Module.
The first one, where are collected all the information and data (both descriptive and numerical) about the whole structure of the company that is reporting about its sustainable business model, is necessary to assess the entire report, since that through this section there can be evaluated the firm's commitments within the specific industry, sector, and the country where it is working. In this section, the company should highlight considerations and data about its assets under management by dividing them into specific asset classes. Information about any asset class that represents at least 10% of the total company's assets under management must be reported, highlighting also if it is managed directly or by an external manager. Directly managed asset classes are scheduled into the following modules: Listed Equity (Incorporation), Listed Equity (Active Ownership), Fixed Income, Private Equity, Property, Infrastructure, Hedge Funds, and Inclusive Finance. Indirectly managed asset classes are scheduled into two modules, that are Manager Selection, Appointment and Monitoring and again Inclusive Finance. Information about the asset classes that represent less than 10% of the total assets under management can be voluntarily incorporated into the report.
The second module offers a wide vision about the responsible strategies adopted by the organization and presents also considerations about its governance policies. In this section, companies are asked to report also about the decisions taken to address the issues related to climate change, such as their level of greenhouse gas emissions or the quality of their waste management, in order to verify their alignment with the targets imposed by the international agreements about this subject (e.g. the *Paris Agreement* and the *2030 Agenda for Sustainable Development*).
The last module is a comprehensive abstract of the previous sections, and it is useful to highlight the information that are necessary to be delivered in order to receive a feedback by the PRI, useful for improving ESG practices and enhance the sustainability performance. Indeed, compiling the ESG report under this tool's guidelines can offer a lot of benefits for investors, such as a comprehensive evaluation of their responsible performance, the possibility to understand their area of weakness and consequentially strengthen ESG practices aimed at improving their sustainability impact, benchmark their performance with respect to the average of their industry, and receive outputs from the PRI that indicate how well they have assessed ESG factors and if they have behaved correctly under the Principles' framework.
Each module is evaluated by the PRI through a simple assessment methodology in order to measure the sustainability performance of the signatories which reported information about their ESG strategies. All data provided by the reporting organizations are evaluated by using two types of indicators, which are the Core Assessed (mandatory to report) and the Additional Assessed (voluntary to report). Every indicator receives a score assigned by the PRI that ranges from zero stars to three stars. The average of these scores will provide a final rating for the signatories, based upon a scale that goes from the lowest score E to the highest score A+.

[99] Principles for Responsible Investments. (2020). *Intro to reporting 2020 for investors*. https://www.unpri.org/reporting-and-assessment-resources/intro-to-reporting-2020-for-investors/5379.article

The compilation of the Core Assessed indicators, that represent nearly 75% of the total information for each module, is sufficient to be inserted maximum in the third level of the rating scale, so companies are encouraged to provide information also for additional topics in order to obtain the maximum score of the rating scale.

2.4 Impact Measurement Techniques

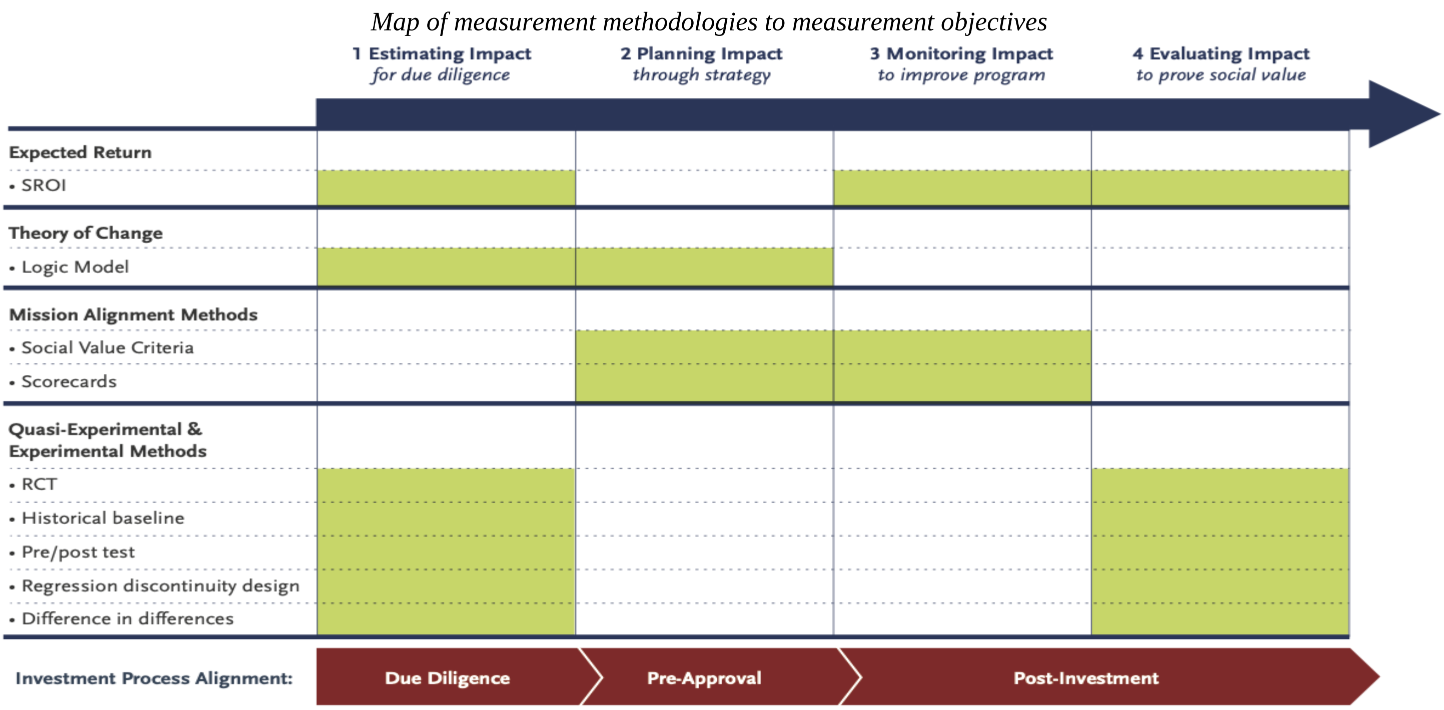
After having stressed that the practice of responsible investment and that of impact investing are different both in form and concept although belonging to the same strand of ESG strategies, and having described the ESG performance assessment methods, it is now necessary to focus on the techniques for measuring the social and environmental impacts brought by economic-financial organizations and institutional investors. Each company, fund, non-profit organization, or governmental agency that chooses to structure its financial activities through a business model aimed at intentionally making a positive effect on the community or on the ecosystem must constantly monitor and measure the results of the investments made, thus to being able to capture and weigh both qualitative and quantitative data through which assess the actual benefits in relation to the initial intentions. The impacts brought about by financial entities, which are essentially identified through the measurement of the positive or negative changes resulting from the activities undertaken with respect to what would have happened anyway if these initiatives had not been implemented, can be classified as social, which therefore bring a tangible change to communities in the long-term by addressing social challenges (e.g. unemployment, extreme poverty, food shortage, and water scarcity), or as environmental ones, which therefore produce tangible changes in natural ecosystems without simply reducing greenhouse gas emissions. A further classification of the impact of financial activities is based on the actual investment vehicles by which they are produced; corporations may, indeed, decide to carry out one or more development programs internally, trying to directly benefit society or the environment (direct impact), or they may decide, especially as regards the case of institutional investors, to allocate their funding to a multitude of sustainable projects, including different types of assets in their portfolio and consequentially generating cash flows useful to indirectly drive third organizations towards the achievement of remarkable results (indirect impact). In the second case, the impact generated by the fund will be equal to the sum of the effects produced by the securities that compose its financial portfolio, weighted by the level of exposure and the holding time of the investments.

In order to best structure an investment of this kind, it is necessary to include an assessment of the environmental and social objectives both before the implementation of a given activity or program, so ex-ante through the definition of the impacts intended to be produced, and afterwards, that means ex-post through the measurement of the effects generated. Measuring impacts means, in essence, establishing causal connections between the implemented activity and the observed long-term effects, analysing whether and how the latter are attributable directly to the initiative or to third external causes. An evaluation of the changes that their investments have produced can offer many opportunities and benefits for those organizations that constantly monitor their impact investments' status. Enterprises should assess their impact performance in order to improve their accountability and market appeal, since that a better transparency of their reporting activities can encourage stakeholders to be more engaged in companies' businesses by reinforcing their commitment, as well as more investors can be attracted for funding purposes. Firms may also use their evaluation about the impact to develop new marketing strategies through which they can enter into new markets or strengthen their position into those industries where they are already present, using findings from the measurement of the effects on communities and environment to make strategic changes to their financial plans with a view to seeking better results on better terms, and also to develop new collaborations with third parties with the aim of working together by being aligned towards the implementation of a common goal, as can be the achievement of the SDGs. Both corporations and individual investors, through the implementation of an efficient impact assessment methodology, can be able to derive important information to better understand and take advantage of improvement opportunities for their businesses. They have, indeed, the great chance to study many useful data to adjust misconducts and develop new operations, aiming at: the improvement of returns and their growth trend, the optimization of the implemented practices' efficiency, the enhancement of the decision-making processes' effectiveness by structuring investments with fewer costs and better risk mitigation system, the alignment of all activities' goals with broader objectives, and the reputation's strengthening. Monitoring the status of the investments and carrying out a continuous assessment of the social and environmental impacts produced by these both in the short and especially in the long-term is therefore not only convenient to know the effectiveness of the implemented operations and the decisions taken, but also brings important benefits as regards the economic value creation within the business itself, since that thanks to the data recorded through an impact measurement process essential information can be extrapolated to improve the financial performance.

Since that there is not an international standard assessment solution for this kind of financial activity yet, companies and investors which want to measure their impact investments' performance should structure a decision-making process about the methods that they are intended to use for the effective evaluation of the changes produced. First of all, they have to decide about the type of benefits that they want to produce and the beneficiaries that will gain advantage thanks to those effects (e.g. an entire community, a small group of people, an ecosystem, a particular animal species, or the world at large), assessing the ex-ante evaluation mentioned previously, that is technically a fully-fledged due diligence process, by collecting data about the most significant indicators that will be useful to understand the magnitude of the impact. These indicators will help stakeholders in measuring the effective changes resulted from the implementation of the financial operation, independently to which measurement technique is chosen. Then, after having both planned the initiative in all of its aspects through the individuation of the data collection tool which best fits with their purposes and implemented it, investors should constantly monitor project's progress through continuous measurements by capturing high-quality information and compare these with the initial data to understand if the impact investment is having success under the original idea or if there are any possible adjustments that can be done in order to realign the operation with the pre-established goal. Finally, the results are calculated with respect to what would be happened anyway without the investment's launch itself. There are, therefore, essentially three dimensions to consider when choosing the best solution for measuring the impact, namely: the final outcome to be evaluated, so what data and information should be collected; the main characteristics of the investment that may produce such an outcome, so to what extent the financial activity can actually satisfy the initial idea of bringing certain benefits; and the scope of the different impact measurement techniques, so what is the evaluation methodology that should be implemented to obtain the best possible observation in relation to the type of the investment and the key performance indicators linked to this.

Currently, there exist many impact measurement techniques that allow institutions monitor their financial operations and evaluate the correlated results from the due diligence phase to the post-investment phase, that are: expected return methods, approaches based on the theory of change, mission alignment methods, and experimental and quasi-experimental methods[100]. Figure 2.4 shows how each methodology is indicated for specific investment's phases, since that the observations captured by an investor through one technique can be more useful in a determined phase with respect to those produced by the same in the other phases.

•Figure 2.4.



Note. Retrieved from https://www.hbs.edu/socialenterprise/Documents/MeasuringImpact.pdf. Copyright (2020) by So and Staskevicius.

a. Expected Return Methods

The expected return methodologies are frequently used by institutional investors and financial organizations to evaluate the profitability of a project, by comparing the costs linked to the investment with

[100] So, I., & Staskevicius, A. (2015). *Measuring the "impact" in impact investing*. Harvard Business School. https://www.hbs.edu/socialenterprise/Documents/MeasuringImpact.pdf

the expected returns which it will generate calculated in terms of present value (i.e. the current value of future cash flows given a specified rate of return). Similarly, impact investors measure the future social, environmental, and economic returns that their financial activities will produce by comparing these with the operational costs needed for the implementation of the latter, discounting each future monetary component under the value of the current currency. There are three principal measurement techniques used by institutions worldwide to evaluate the expected outcomes of their impact investments, namely the *Social Return On Investment*, the *Benefit-Cost Ratio*, and the *Economic Rate of Return*.

Based upon the seven *Principles for Social Value*[101], the first one, which is the most frequently used nowadays, provides information about the possible opportunities and risks that are linked to the launch of a specific impact program and also offers the possibility to measure the economic value of the external benefits brought through continuous monitoring of financial components. Through this assessment practice, investors translate the non-monetary results into quantified values and measure the progress made by using the following indicator:

$$\text{SROI Ratio} = \frac{\text{PV(Impact)}}{\text{Value of Inputs}}$$

where SROI means *Social Return On Investment* and PV stands for Present Value. The key characteristic of this method is that the value of the impact is calculated by taking into account the perception of the beneficiaries.

Through the *Benefit-Cost Ratio*, that is very similar to the previous one, investors can measure and monitor their impact performance by calculating the ratio between the expected monetary value of the benefits produced and the overall costs linked to the operations, always expressed in discounted present values, but without taking into consideration the beneficiaries' perception. This assessment can be done by using the following indicator:

$$\text{BCR} = \frac{\text{PV(Benefit)}}{\text{PV(Costs)}}$$

where BCR means *Benefit-Cost Ratio*. Higher is the ratio, more profitable is the project under both social and economic point of views. This measurement technique allows institutional investors to compare the different impact programs within the international markets in order to choose the one which potentially will perform better without an excessive monetary disbursement.

[101] Supported by Social Value, that is an English company which encourages the expansion of social impact investments, these seven principles constitute a framework for the improvement of the accountability of impact financial organizations that want to create value with their social programs. They are the following: involve stakeholders, understand what changes, value the things that matter, only include what is material, do not over-claim, be transparent, and verify the result. Retrieved from: Social Value UK. (2020). What are the principles of social value? http://www.socialvalueuk.org/what-is-social-value/the-principles-of-social-value/

The last expected return method is used to evaluate if an investment has the potential to provide tangible benefits to the community by comparing the total cost needed for its implementation with the economic value created over a predefined period of time. The latter is calculated as the increment in beneficiaries' income plus the cost-savings produced by the improvements brought by the investment itself. This method is based upon an indicator that is typically calculated previously the launch of the initiative and then reassessed continuously through the lifetime of the project thus to offer institutions make sure that their activity is performing well by creating the expected outcome. The indicator is presented as the following:

$$\text{ERR} = \frac{\text{Benefit} - \text{Original Costs}}{\text{Original Costs}} \cdot 100$$

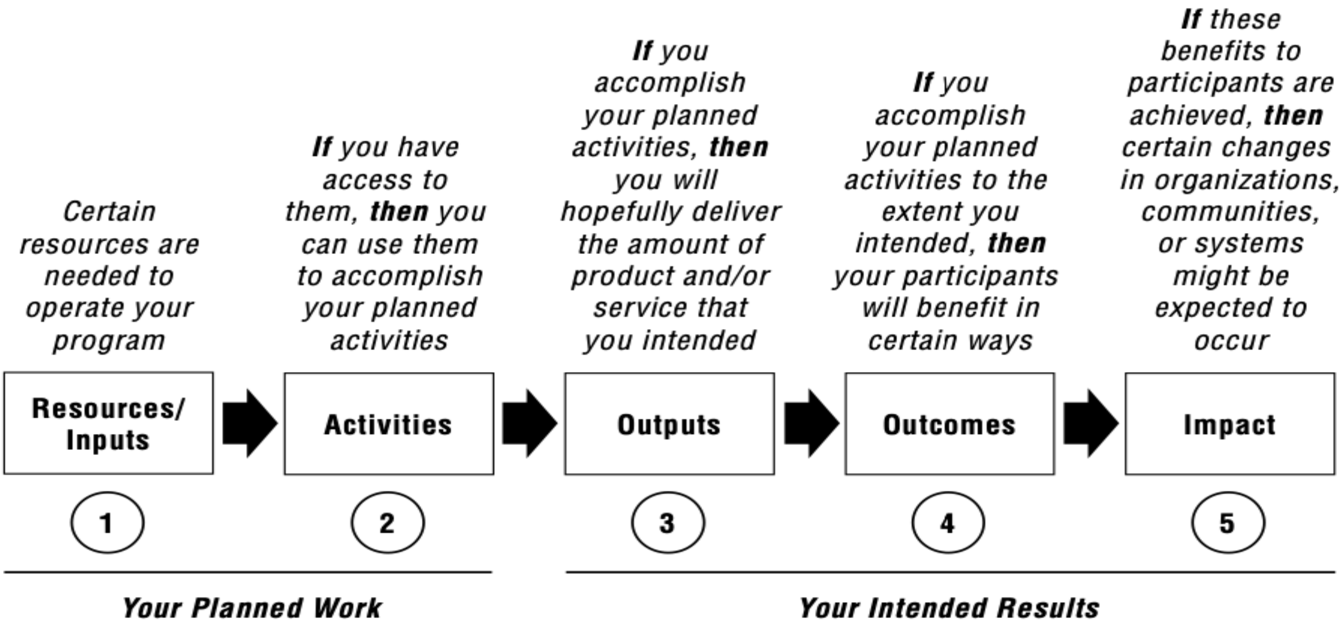
where ERR means *Economic Rate of Return*.

b. Theory of Change

The evaluation approaches based on the theory of change allow companies to highlight the final social outcomes produced by impact investments through a simple framework, performing the evaluation on the cause/effect relationships both between and within all the different phases of the financial activity that is intended to bring some social benefits. Through the simple logic model of the *impact value chain*, shown in Figure 2.5, investors are able to assess each phase of the initiative that they want to develop with the aim of creating a positive change within a specific context.

•**Figure 2.5.**

The basic logic model and how to read it



Note. Retrieved from https://www.bttop.org/sites/default/files/public/W.K. Kellogg LogicModel.pdf. Copyright (2004) by Kellogg Foundation.

The primary purpose of this methodology is, therefore, assess an evaluation about the process for the creation of impact, verifying if the planned work is effectively producing the desired result, assessing the connections between inputs, implemented activities, outputs, and outcomes rather than focusing only on the impact's final dimension. Through the application of this methodology, investors are able to understand the principal goals of those entities that develop impact investing programs, having clear in mind what are the key performance indicators for each phase and what is the way by which organizations want to bring benefits, being able to assess the initiatives' progress at each moment during its lifetime period.

c. Mission Alignment Methods

Investors and enterprises can adopt assessment techniques based on the comparison between all the economic-financial activities implemented to produce impact and the initial idea at the baseline of the whole initiative, verifying so if the strategic plans are correctly aligned with the predetermined mission of addressing some specific social and environmental challenges. Mission alignment methods are implemented through the use of *screens* and *scorecards*.

A *screen*, also called social value criterion, is usually developed during the due diligence phase in order to assess the effectiveness of the impact performance of an entity as regards different mission criteria, evaluating so if companies are implementing their sustainable programs in a way that fits with the primary purpose of providing a positive impact both on communities and ecosystems.

Scorecards are measurement tools for the assessment of the key performance indicators of the investments. They are useful to understand the progress made towards a predefined broader goal, such as the achievement of one SDG. They are composed prevalently by indicators that reflect the operational performance of the investment, its organizational effectiveness and efficiency, the social value intended to be achieved, and the financial component needed for the implementation of the whole initiative. Their utilization produces similar observations to those of the logic model linked to the theory of change, since that these measures are useful to evaluate the impact performance during each phase of the project, establishing comparisons between different activities through different indicators.

d. Experimental and Quasi-Experimental Methods

Organizations and funds can measure the impact of their investments through the assessment of the tangible effects on society and the environment that these have produced in comparison with the alternative scenario that would have occurred in the absence of the development of the impact programs. Through these techniques, investors can understand the real changes that their projects produce, by measuring the effectively differential in outcomes caused by the implementation of the latter. Both methodologies are based, indeed, on the counterfactual analysis, which represents an evaluation system of the effects generated by a cause. This analysis determines the impact in terms of the difference between the condition of one group of people benefiting from the effects produced by an initiative (target group) and that of a second group excluded from the latter and, therefore, which cannot gain any kind of advantage by this (control group). The counterfactual analysis is carried out through experimental methods, such as the technique of the *randomized control trial*, or implementing quasi-experimental methods, namely approaches based on comparison with a *historical baseline*, on a *pre/post* evaluation, on solutions based on the *regression discontinuity design*, and on the *difference in differences* comparison.

The *randomized control trial,* usually used as the golden standard for assessing the effectiveness of new medical treatments, measures the efficacy of the intervention by calculating the impact as the difference between the condition of the target group, composed through a random selection of subjects, and that of the control group. The randomization of the group composition aims at reducing the distortion factors that can be generated by the choice of a specific target. This analysis is useful to understand the effects brought by investments within a specific context and verify if the impact is remarkable in society, looking at the changes in people's living conditions produced by companies' sustainable programs, but it is not able to capture externalities that can influence outcomes.

Investors can evaluate their social impact performance by comparing the effects brought on a specific group of people by their financial activities with the past outcomes derived from a similar population by using a *historical baseline*. The counterfactual analysis is so carried out by selecting the control group on the basis of historical data and using it as a benchmark to be compared with the actual target group, that should be very similar to the control one with the only difference that the latter is not influenced by the effects of the investment. The difference in the condition of groups is, therefore, only generated by the initiative and this indicates that there has indeed been a change in society.

The evaluation based on the *pre/post* method is simply an observation of the same group of people before and after an impact investment is delivered. The target group and the control group are so the same population observed in different periods, and the impact performance is essentially calculated as the change in the internal condition of the group caused by the effects of the project. It is one of the simplest and cheaper impact measurement techniques, but it has the biggest limitation in its principal assumption, which states that the change is caused exclusively because of the intervention, and therefore not taking into consideration external factors.

The selection of the two groups for the counterfactual analysis can be carried out just establishing a threshold that indicates who can benefit from the effects of an impact investment and who cannot. The assumption behind this approach, which is called *regression discontinuity design*, is that the difference between the condition of the two groups is initially insignificant, and thus the changes provided by the project compose the metric used to calculate the tangible impact.

The *difference in differences* methodology is based on the comparison of two groups of people with are very similar under all aspects, with the only difference that to the target group is offered the chance to gain advantages from impact investments while the control group is untouched by this activity. The rationale behind this approach is that the target group has the same characteristics of the control one in absence of the initiative, and thus the impact performance can be simply measured by comparing the initial and final condition of the two populations. The evaluation is, indeed, carried out by assessing the groups both ex-ante and ex-post the implementation of the program, and the difference between these assessments will offer a tangible measure of the social return.

e. Environmental Impact Assessment Methods

To address in the best way the problems arising from climate change and global warming, companies and investors should structure financial activities aiming at directly improve ecosystems' condition and preserve biodiversity. As well as the social impact performance, the environmental one should be constantly assessed in order to evaluate the efficacy of the investments made and to adjust wrong behaviours as regards green activities. The most diffused methods to measure the impact of environmental initiatives are the *life cycle impact assessment*, the *carbon footprint* calculation, and the *ecological footprint* one.

Through the *life cycle impact assessment*, companies can collect detailed information about the potential impact of their financial operations on the environment in relation to their production systems. This analysis is based on the study of all the possible effects that each phase of the production process can bring to the natural dimension, monitoring continuously the environmental key performance indicators in order to understand the external impact provided across the product life cycle. This evaluation approach requires a wide range of data due to the extreme difficulty for a correct measurement of tangible effects on nature, so is quite expensive to be implemented, but also very efficient for control purposes. The method is carried out through two main phases: first, companies have to monitor their environmental indicators in order to collect as much information as possible about the outcomes of their operations, then they have to insert these into different impact categories (e.g. climate change, seas acidification, mineral resources' depletion, terrestrial toxicity, and fossil fuel depletion), thus to calculate results with regarding the different environmental dimensions.

The *carbon footprint* calculation provides a measurement of the organizations' environmental impact performance by looking at their annual levels of CO_2 emission. In order to implement this approach in the correct way, firms should convert the measure of each key performance indicator as regards energy consumption, water usage, pollution derived from transport systems, and waste management in terms of tons of carbon dioxide by applying emission conversion factors in order to be able to evaluate their carbon footprint on the Earth.

The *ecological footprint* calculation, strictly linked to the carbon footprint one, is focused on the level of renewable resources used by enterprises during their production processes by comparing it with the planet's capacity to regenerate them. It provides information and data about the dimension of the impact produced on the environment through economic-financial activities and highlights the importance to stop the overconsumption of natural resources. It is calculated by summing up the total consumption of renewable resources, adjusted by a conversion factor that represents the quantity of green outcomes produced. The final result of this assessment is an indicator that theoretically shows how many planets per year are needed to sustain the production, so fewer results mean that the companies evaluated are performing well under an eco-friendly point of view.

Conclusion

This second chapter highlighted the technical dimension of sustainable finance, both presenting the different investment strategies that companies and institutional investors implement with the aim of understanding opportunities and managing better risks correlated to ESG issues and providing a review of the state of the art as regards the performance evaluation techniques and tools for these types of investment.

To date more and more economic organizations, banks, funds, and governments perform their financial activities responsibly, trying to avoid harmful consequences for people and the planet while looking for economic returns. This rise was dictated not only by a real need to align the individual interest with that of the collective community in order to limit further environmental and social damages, but also by the growing importance of the PRI from year to year. With the aim of integrating ESG issues into the financial analysis to structure sustainable and responsible investments, even more stakeholders worldwide develop their investments through seven different business strategies, that are: the exclusion, which is a practice based on negative screening implemented by investors to align the content of their financial portfolios with their personal ethical values; the ESG integration, through that financial institutions include information and issues related to the three ESG dimensions into the financial analysis with the aim of avoiding related risks and identify business opportunities; the engagement and voting, which means that through active ownership shareholder can leverage their rights in order to influence the investment behaviour of the whole corporation and implement more responsible practices; the norm-based screening, through which investors are able to identify the companies with the best sustainable performances in order to include in their portfolio only financial assets structured with the aim of creating a positive value in the long-term; the best-in-class, which targets at identifying financial opportunities in those companies which have the best ESG score within a particular industry, sector, or country; the sustainability-themed investing, that is a direct way to financing sustainable assets and initiatives with the aim of linking the research for a positive financial return with the broader goal of addressing the principal needs for both the environment and society; and the impact investing, that is a practice slightly different from that of responsible investing because, if the latter is oriented towards the incorporation of ESG issues aiming at avoiding harmful results for humanity and nature, this one is intentionally oriented to leave a remarkable positive impact on society and the environment without the necessity for an economic-financial return. The latter approach, since that it has only come to the fore in recent years, still needs to be defined in the best possible way, through both the creation of an appropriate regulatory framework and the establishment of key performance indicators useful for really understanding the extent of the impact. The performance of both responsible and impact investments need to be constantly assessed in order to understand if the implemented strategy is working well or if there are some adjustments that are required to correct the wrong behaviours. To date, there are many evaluation tools and methodologies for these financial activities, such as the scoring systems and performance measurement instruments offered by the international rating agencies (e.g. the *ESG Evaluation* and the *SAM Corporate Sustainability Assessment* of Standard and Poor's Global Rating, the *ESG Risk Ratings* offered by Sustainalytics, the *ESG Ratings Methodology* provided by MSCI, and the State Street Global Advisors' *R-Factor™*) and the different impact measurement techniques that can be implemented to measure investments' benefits on communities and ecosystems (e.g. expected return methods, approaches based on the theory of change, mission alignment methods, experimental and quasi-experimental methods, and the life cycle impact assessment).

In conclusion, this chapter has shown how all financial entities can structure their investments by incorporating ESG factors into decision-making processes by choosing among a wide range of responsible business strategies, and how they should assess the performance of their financial activities during the whole process, from the due diligence phase to the study of the final outcomes. Soon, it will be necessary to structure standard metrics for ESG assessment in order to encourage better information exchange between financial entities and implement more efficient sustainable investments. The creation of an international measurement system for both responsible and impact investing is thus necessary, especially with regard to the social and governance dimensions (much less developed than the environmental one), to objectively assess both the economic and socio-environmental returns produced by the financial entities through their actions.

CHAPTER III

The International Finance Corporation: What it is and how it Approaches the Environmental, Social, and Governance Issues

The third step of this cognitive path within the world of sustainable finance aims to make the reader, who has now acknowledged the main theoretical and practical concepts of this topic thanks to the previous sections, understand how a real company applies these criteria in its work process. It will be presented the example of the International Finance Corporation because it is one of the most influential organizations in the area of sustainable finance, being globally recognized as a leader in this sector.

The International Finance Corporation (IFC), besides being one of the five organizations of the World Bank Group (WBG, See Anx. II for more details), is the largest global development institution of the world. It focuses exclusively on the private sector, which has a key role in the enhancement of the world's economy because it creates jobs, strengthens infrastructures and lays the groundwork for a better future. This agency promotes a sustainable growth in least-developed countries by financing investments and projects, using its own capital or mobilizing international financial markets and providing consultancy and technical assistance to governments and companies. IFC offers a wide range of leveraged financial products and services to domestic and foreign companies and other types of private investors in developing nations with the purpose of helping them structure financial packages and coordinate funding from foreign banks, local banks, export credit agencies[102], and third companies. Since its foundation, it has committed more than $249 billion and mobilized over $53 billion to promote a private sector's development in low-income countries, with $19.1 billion invested only in 2019, including $10.2 billion raised from its clients and partners.

The third chapter of this Master Thesis is an in-depth presentation of IFC, covering all aspects of its history, objectives, policies, strategies, products, and services. It will start with an initial section containing a brief historical narration in order to assist the reader better understand the origin and the importance of this international financial institution.

The first paragraph of the chapter will be an accurate presentation of IFC focused on the role of the agency as regards its importance within the WBG and concerning the global development too. There will be provided information about the requirements that countries must meet to be eligible for its financing, the geographical areas and the different industries and sectors where the agency plays an active role, and the investment criteria adopted for project finance.

[102] Export credit agencies are organizations that utilize various forms of financing to encourage exports of instruments and services, offering coverage for both political and business risks. They provide loans, equity investments, insurances, and guarantees. They act as intermediaries between a host government and an exporter company, especially in trades characterized by a high political risk; indeed, the most of their transactions result by claims against developing countries and emerging markets.

In the second paragraph, there will be explained how the corporation works, through an analysis of its main financial products and services. There will be presented the eligibility criteria that must be met by enterprises in order to be approved for IFC's solutions.
The third paragraph will be an overview of the principal programs implemented by the corporation to reinforce its sustainable impact. Most of the initiatives mentioned in this section have become global benchmarks for other financial institutions, which have directly adopted them or have structured their business models in line with these.
In the fourth paragraph, there will be explained how IFC evaluates the results of both its responsible and impact investment decisions. This part is useful not only to know what kind of technical tools are adopted to measure the success or failure of an initiative, but even to understand what are the main indicators that need to be constantly controlled to address in the best way ESG issues according to IFC's vision.
In the chapter, there will be provided also some examples of projects undertaken by the organization during its recent life to help the reader better understand how its financial and social impact plays a key role in the global fight against poverty and inequality. All consolidated and yearly (referring to 2019) financial data mentioned in the chapter are based respectively on IFC's *Financials 2019*[103] and *Annual Report 2019: Investing for Impact*[104], otherwise a footnote containing the different source will be present. All statistical data regarding the agency also refer to fiscal year 2019, ended 30th June, but there will be provided even some numbers attributable to its clients, collected in different years.

IFC was founded in Washington, D.C., on 20th July 1956 by the subscription of a few dozen governments, which raised $100 million in capital to reinforce the work of the WB and promote a development growth through the alternative channel of the private finance. The original idea at the baseline of this organization is attributable to Robert Garner, vice president of the WB from 1947 to 1956 and the first president of IFC from 1956 to 1961, who first thought that "*the most promising future for the less-developed countries was the establishing of good private industry*"[105]. This new and innovative mission was to be pursued through three different methods:

- Investing capital alongside others, without host governments' guarantees, in private enterprises that were goal-oriented at the contribution for development.
- Advising these enterprises, trying to help them stimulate capital flows.
- Mobilizing financing from third parties by bringing good investment opportunities to investors in international markets.

[103] International Finance Corporation. (2019). *Financials 2019*. https://www.ifc.org/wps/wcm/connect/d57ed06d-ceb1-4648-9995-ff4602e6d609/IFC-AR19-Volume-2-Financials.pdf?MOD=AJPERES&CVID=mThcJzD
[104] International Finance Corporation. (2019). *Annual report 2019: Investing for impact*. https://www.ifc.org/wps/wcm/connect/4ffd985d-c160-4b5b-8fbe-3ad2d642bbad/IFC-AR19-Full-Report.pdf?MOD=AJPERES&CVID=mV2uYFU
[105] Garner, L. R. (2003, August 1). *Records of Robert L. Garner*. (Reference code WB IBRD/IDA MDS-01). World Bank Group Archives Holdings.

Its first direct investment, issued on September 1957, was a 15-year loan of $2 million to help Siemens (i.e. a German multinational conglomerate company specialized in energy, healthcare, and infrastructure) build up its first integrated assembly plant in Brazil.

The first mobilization of capital through a syndication process was held in 1959, when IFC raised $2 million from commercial banks for Champion Celulose (i.e. a Brazilian company specialized in the production of pulp and paper), helping it launch its business in Brazil.

Its first equity investment, which was an amount of $500,000 issued in 1962, was offered to Fábrica Española Magnetos (i.e. a Spanish company specialized in the manufacture of electrical components for automobiles) to help it expand its factory in Madrid and build up a new facility in Trento.

During its first decade, the IFC worked mainly with the WB for the enhancement of development finance corporations, which are specialized institutions that invest in local businesses with limited access to capital.

In 1971, the organization created its Capital Markets Department, a specialized branch focused on the construction of some local financial institutions that share the common goal of contrasting poverty in developing countries, a challenge that IFC still faces today.

From the 1980s, the agency started to track investment-returns in the stock markets to attract a wider number of investors, especially in emerging markets. For this reason, in 1981, it created the Emerging Markets Data Base[106], launching stock exchanges in more than 20 countries. It was during this decade that IFC played a crucial role in the elimination of barriers for global trades, by working alongside the WB to create the *Foreign Investment Advisory Service* (today called Facility for Investment Climate Advisory Services), a forum that helps other nations attract direct foreign investments by supporting reforms in every country.

Throughout the 1990s, IFC began conducting its operations with a strong focus on sustainability. The corporation is a pioneer company in this field, having structured in 2006 the *Performance Standards on Environmental and Social Sustainability* (See Ch. 3, Para. 3.3), which are policies designed with the aim of assessing operations to avoid, mitigate, and manage risks through sustainable solutions[107].

3.1 The Role of IFC

IFC represents the private sector lending arm of the WBG. As one of its five organizations, it shares the mission of the group, that currently is to reach the twin goals of ending extreme poverty and boosting shared prosperity in the world by 2030. Within the WBG, the corporation coordinates its works with the WB,

[106] Emerging Market Data Base has been acquired by Standard & Poor's in 2000. Retrieved from: Janssen, B., & Johnson, L. (1999, September 23). *S&P acquires IFC's Emerging Markets Data Base and IFC and S&P agree to strategic collaboration* [Press release]. International Finance Corporation *https://ifcextapps.ifc.org/IFCExt/Pressroom/IFCPressRoom.nsf/0/1BA136DC61B8E3CE8525698100577E3F?OpenDocument*

[107] International Finance Corporation. (2016). *IFC: The first six decades leading the way in private sector. A history.* *https://www.ifc.org/wps/wcm/connect/5e70149f-6cad-407a-944e-69d392079b47/IFC-History-Book-Second-Edition.pdf?MOD=AJPERES&CVID=lIwwdJi*

especially interacting with IBRD. Unlike the other international development agencies, including those of the group, the particular feature of IFC is that it does not require the guarantee of the host government for lending to businesses. When the needed amount of capital for a specific project cannot be provided solely by IFC financing coupled with mobilized funds from private parties, the WB will help its sister organization by supplying the necessary loan and leading the whole process together with it. They both create market-based solutions and offer advisory services to further capital flows and promote international partnerships because no one is able to solve the development challenges on its own. WBG's mission can be addressed only with the support of both public and private sectors and, for this reason, the WB and IFC work together for encouraging investments in these fields in the areas characterized by the highest rates of poverty and fragility.

The corporation is fundamental for the promotion of a sustainable development in its member states, being a strong player in the enhancement of human living conditions in whose countries. Recognized worldwide as the largest source of loan and equity financing for the private sector, which is a fundamental driver of consolidated economic growth and social progress in every nation, IFC works in more than 100 countries alongside the WB, governments, multilateral institutions, individual investors and private enterprises, including partnerships with global platforms as the United Nations, the Organization for Economic Co-operation and Development, the Group of Seven, and the Group of Twenty. Since that its principal scope is the reduction of poverty by fostering economic and social development, it encourages the private finance through the creation of innovative easily accessible products and new markets where everyone can take great opportunities, especially where they are needed most. IFC, indeed, thanks to its knowledge and experience acquired in more than sixty years of works in the poorest areas of the world, helps less developed communities to build the foundations for a better future, characterized by a prosperity which they would not be able to achieve by themselves.

Trying to provide a remarkable impact in emerging markets, with the help of its more than 2,000 clients, IFC is globally involved in different industries that have a great potential for a broad development. It offers financing and technical assistance to projects and companies that promote the sector's evolution of agribusiness, infrastructure, services, employment, manufacturing, and financial markets. Progress in these business areas can lead even small countries to benefit from economies of scale typical of industrialized nations, sharing so a prosperity growth.

Agribusiness is an essential channel for the reduction of poverty because is the principal sector for food production. IFC reacts against world's soaring demand for food, that is expected to be more than doubled by 2050, by investing from small farmers to big retailers, helping them boost production, increase liquidity, and improve distribution. It offers working capital facilities to clients whose core business is the financing of furniture activities for agrotechnical goods for farmers or of construction plans for infrastructure that can facilitate agricultural trades and reduce the correlated costs. IFC's support includes services like assessments and staff training programs for companies that apply international food safety standards. To help the private sector finance in this market, IFC committed $501 million last year and more than 2 million farmers were assisted. The corporation also manages the *Global Agriculture and Food Security Program's Private Sector Window*, that is a co-financing initiative funded by donor governments of Australia, Canada, Japan, Netherlands, UK, and US. It is based on blended finance solutions, which generally for every $1 investment leverage an additional financing of $8. Through this program, IFC helps even smaller farmers from rural areas. The evolution of the infrastructure sector is crucial to enhance people's lives. Today, about 940 million people have no access to electricity[108] and 666 million people have no clean drinking water[109], and many cities have inefficient transportation lines due to their lack of funds and expertise. IFC focuses on these problems developing sustainable and affordable solutions, especially in fast-growing cities that have particular needs in power, water, and transportation. It provides financing directly (debt and equity issuance) and indirectly (syndication programs) to projects for the construction or development of infrastructure that are necessary to guarantee access to renewable energy, clean drinking water, and safe roads. Alongside the WB, it also offers technical assistance to governments in order to help them structure public-private partnerships[110] (PPPs), by which the government establishes the project goals and the private sector works for meeting them. Thanks to its work, many cities are able to face the urbanization process that the world is going through in this century, that has an expectation of 70% of the population living in urban areas by 2050 and 60% of territories being urban by 2030. IFC helps build up and modernize dams, water supply systems, airports, ports, roads, solar panels, hydropower facilities, oil refineries, wind farms, mines, and power plants. IFC has committed long-term investments for $1.06 billion in 2019, after that its initiatives supplied about 81.5 million people with electricity and 18 million people with clean water the previous year[111].

Nowadays nearly 2.4 billion people lack efficient sanitation facilities[112] and one in every five children has no access to basic education[113]. These statistics need to be drastically lowered to win the fight against poverty and inequality. IFC contributes to the cause by financing projects that have a decisive impact in the services sector.

To improve the sanitation system and give everyone the opportunity to access it, IFC has intended a $2 billion active portfolio in healthcare companies that work in emerging markets, taking care of 49.9 million patients just in 2018[114]. It has adopted an innovative approach in facing this issue because in addition to merely guarantee hospitals financing, it is oriented to face three challenges strictly correlated to the enhancement of this sector, which are: the promotion of a more efficient use of health insurances, since that these instruments

[108] Ritchie, H., & Roser, M. (2019, November). *Access to energy*. Our World in Data. https://ourworldindata.org/energy-access -access-to-electricity

[109] Ritchie, H., & Roser, M. (2019, November). *Clean water*. Our World in Data. https://ourworldindata.org/water-access

[110] Public-private partnership is a cooperative arrangement between two or more public and private entities. Typically, it is a long-term contract for infrastructure projects between governments and private enterprises, through which risks and resources are allocated across the parties involved.

[111] International Finance Corporation. (2020). *Infrastructure: Overview*. https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Infrastructure/

[112] Ritchie, H., & Roser, M. (2019, September). *Sanitation*. Our World in Data. https://ourworldindata.org/sanitation

[113] UNESCO. (2018, February). *One in five children, adolescents and youth is out of school*. http://uis.unesco.org/sites/default/files/documents/fs48-one-five-children-adolescents-youth-out-school-2018-en.pdf

[114] International Finance Corporation. (2020). *Health: Overview*. https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Health

will have a great potential in the next decade according to their increasing market demand; the need to embrace digital technologies, as well as they will facilitate the use of patient data and the coordination between health professionals; and the implementation of staff training programs to drastically reduce expertise shortage[115].

Moreover, IFC, together with the private sector's support, has helped nations to achieve great results in the education field since the 1990s. The agency offers the possibility to get access from primary and secondary schools to technical and vocational colleges and universities through loans delivered to investors and commercial banks that want to join this market. Its role, however, is not merely limited to be a lender, since that it provides tools that help financial institutions facilitate their engagement with this sector. Examples of these instruments are the *Education Investment Guide* and *The Employability Tool*. Through the first one, IFC makes its wide knowledge available to clients, guiding them in considering all aspects of an investment in private education, while the second one is a diagnostic tool for helping universities and colleges understand how well they have prepared scholars for the job market. In 2018, thanks to IFC's clients, nearly 4.6 million students were educated[116].

Its commitments in the last fiscal year were about $374 million for healthcare and education sectors.

The corporation plays its developmental role also in the service sector supporting also private enterprises whose core business is the construction of modern communication infrastructure, climate-friendly technologies, and information technologies. It has established long-term partnerships with all major mobile operators to expand networks and develop broadband connectivity in all geographic areas of the world, especially in rural ones, where a major part of the communities lives isolated. Doing so, IFC boosts an inclusion climate by connecting people worldwide. In 2019, its commitments in this sector were about $131 million to provide millions of people with phone and Internet connections.

Workforce plays a crucial role in any economy, especially in developing countries, as that employed people contribute to the society in terms of Gross Domestic Product and Per Capita Income[117], which are key indicators of nations' wealth. To support the job sector, IFC mainly focuses on the industries of tourism and retail adopting an inclusive business strategy, so giving the poorest people the possibility to be an integral part of the economic chain. Tourism sector gives employment to more than 100 million persons worldwide. Hotels and touristic companies generate revenues for various types of domestic small and medium enterprises (SME), creating opportunities for a wide number of workers, so the corporation invests in the development of these activities due to their strong economic and social impact. Since its birth, it has invested in this sector more than $2.8 billion in 89 countries, helping them attract foreigner's attention[118]. Another industry that contributes strongly to employment is the retail one. Thanks to this sector more than 150 million people have jobs in

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[115] Dalton, C. (2020, March). The next decade of hospitals. *International Hospital Federation Journal*, special anniversary issue: A bold vision for future of hospitals and health services in the 21st century, 31. https://www.ifc.org/wps/wcm/connect/426e3558-f411-4339-940c-9dd3da57d63d/The+next+decade+of+hospitals.pdf?MOD=AJPERES&CVID=n3EW-bE

[116] International Finance Corporation. (2020). *Education: Overview*. https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Education

[117] Per Capita Income is a measure of the amount of money earned by every single person in a country.

[118] International Finance Corporation. (2020). *IFC's priorities in tourism*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/trp/tourism/trp_priorities_tourism

supermarkets, speciality shops, electronic stores, apparel distributors, and many other retail points. IFC finances these realities with the purpose of improving local supply chains, reducing exchange risk and product's costs for its clients. A competitive retail sector in any country can benefit the local economy and support the development process, creating jobs and taking care of sustainability issues. Since 1956, IFC has invested in this industry over $2 billion in more than 30 countries[119].

Last fiscal year, the corporation committed a total amount of $522 million in these two industries.

IFC and its partners boost nations' domestic economies by delivering funds even to the manufacturing sector, that is relevant for the reduction of unemployment because it creates jobs that develop different technical skills, offering opportunities for many benefits especially for women, like access to better wages and social insurances. Manufacturing lies at the core of the global economy, promoting international trades by increasing the demand for raw materials, technologies, energy, products, and services from different industries worldwide. The corporation has a $3.9 billion portfolio, composed by loans and underwritten investments globally involved in 180 projects of this kind[120]. The corporation committed $534 million during 2019 in this sector, that became the third business area looking at IFC's loan disbursements, showing how it is gaining importance in its development strategies.

Financial markets' sectors are the most influenced by the presence of IFC, which only in the last fiscal year has committed long-term investments for $5.02 billion. In developing countries, more than 2.5 billion people and 200 million enterprises lack access to financial solutions[121]. The organization works in these fields alongside other institutions and private equity funds to support the WBG's mission by providing a wider access to finance for millions of individuals and SME that would never be able to reach by themselves. It encourages financial intermediaries to be more involved in all the sectors mentioned above by both advising them in addressing issues such as risk management and ESG standards and helping them design their basic financial products in order to reach even the poorest realities, which in this way can reduce the effect of economic stress and pursue growth.

IFC invests actively in institutions whose core businesses cover many business areas, such as housing finance, insurance, digital finance, microfinance, SME finance, and global trade.

Housing finance is necessary to improve human living standards, providing solutions in one of the biggest emerging markets nowadays. The principal products exchanged in this sector are loans used for: the construction of new houses, the refurbishment of existing ones, the acquisition or rent of new and second-hand homes, and the creation of energy and water-efficient facilities[122]. IFC has committed a $260 million portfolio

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[119] International Finance Corporation. (2020). *IFC's priorities in retail*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/trp/retail/trp_priorities_retail

[120] International Finance Corporation. (2019, November 9). *Why manufacturing matters: A value chain reaction*. https://www.ifc.org/wps/wcm/connect/b316fe28-ef37-418a-9df3-5c7fa5acb27b/Mfg+flyer_FINAL.pdf?MOD=AJPERES&CVID=mXjaNZc

[121] International Finance Corporation. (2020). *Financial institution: Overview*. https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Financial+Institutions/

[122] International Finance Corporation. (2020). *IFC's definitions of targeted sectors*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/ifcs+definitions+of+targeted+sectors

in housing projects, offering the opportunity to become homeowners for the first time to people from 46 developing countries worldwide[123]. The corporation is also very active in the promotion of initiatives whose core business is the construction of resource-efficient buildings through its *Excellence in Design for Greater Efficiencies* instrument, which is a software that reveals the best way to build a facility respecting environmental requirements, limiting so both the emissions of greenhouse gases and the waste of electricity and water.

The insurance market is rising day by day because there is the necessity of mitigating economic risks of losses derived from accidents and adverse events, that can have threatening consequences especially on SME. The corporation is member of the *Global Index Insurance Facility*, which is a WBG's donor program by which small farmers, micro-entrepreneurs, and SME from less-developed countries can take access to insurances against damages caused by natural disasters and climate change. Partners of this program insured about $855 million to help small economic realities overcome the so-called act of God risks (i.e. natural hazards outside human control)[124].

The Internet of Things services allow financial institutions to reach people easily and create a wider interconnection with them. The importance of the digital finance sector is remarked by the fact that today more and more banks worldwide are aiming at creating interpersonal relationships between them and their clients, through continuous advisory work. They are all leveraging solutions that could contribute to the creation of a greater inclusion climate, that is particularly advantageous for countries where traditional banking is difficult to access for most of the population. IFC helps its partner companies move in this way by offering them expertise consultations and funds to buy special sustainable technologies that otherwise would be too expansive to be acquired. The organization is a reference point in this field because it works in all the different branches of the digital connections' industry, developing new digitalization processes and improving data protection systems. It has created a collection of both publicly available documents and newly developed materials regarding researches in the mobile money sector, called the *Digital Finance Tools*, that is free accessibly.

To end extreme poverty by further the social and economic development of emerging economies, microfinance and SME finance are very efficient vehicles. For this reason, IFC structures its investments in order to align them with the first SDG, and so being involved in many inclusive finance projects aimed at offering a wider and easier access to capital and funds for those companies that are not big firms yet, especially developing these initiatives in least-developing countries. To take part in investment programs for the category of micro, small, and medium enterprises (MSME), a company must meet at least two of the three criteria fixed by IFC in the *MSME Definition*, or the requested loan must be in the limits imposed by the *MSME Loan Size Proxy*. The necessary thresholds set by the company in order to be included in the category of MSME are shown in Table 3.1.

[123] International Finance Corporation. (2020). *IFC's priorities in property*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/trp/property/trp_priorities_property
[124] Global Index Insurance Facility. (2020). *Overview*. https://www.indexinsuranceforum.org/overview

•**Table 3.1.**

IFC MSME Definition and MSME Loan Size Proxy

IFC MSME Definition				MSME Loan Size Proxy
INDICATOR	**EMPLOYEES**	**TOTAL ASSETS US$**	**ANNUAL SALES US$**	**LOAN SIZE AT ORIGINATION**
Micro enterprise	< 10	< $100,000	< $100,000	< $10,000
Small enterprise	10 – 49	$100,000 - $3 million	$100,000 - $3 million	< $100,000
Medium enterprise	50 - 300	$3 million - $15 million	$3 million - $15 million	< $1 or $2 million[125]

Note. Adapted from https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/ifcs+definitions+of+targeted+sectors. Copyright (2020) by International Finance Corporation.

These kinds of companies generate important income and offer job opportunities for most people in developing countries. IFC focuses on providing funds and advisory services to financial institutions that invest in these realities. It is worldwide recognized as a leader in this sector, since that it is a reference agency for the sponsorships of multiple programs aimed at the development of SME. In 2012, it created the *Global SME Finance Facility*, that is a blended finance partnership between financial institutions to assist SME covering the gap faced in emerging markets (estimated $5.2 trillion[126]) and create employment offering people one million new jobs. A great portion of MSME, nearly 6.6 million SME and 39 million micro-companies, is owned by women. They represent an important growth opportunity not only under an economic point of view, but even social standpoint because the development of the female role is linked to the elimination of inequalities. IFC, through its *Banking on Women* program, provides debt, equity, derivatives, and risk mitigation products to financial institutions that assist women-owned MSME. In 2018, through this initiative about $11.2 billion to invest in these realities were raised and about 751,000 women were hired[127]. To be qualified as a women-owned enterprise, at least 51% company's capital shares must be possessed by women or, if shares owned by them are less than this limit but over 20%: at least one woman is Chief Executive Officer, Chief Operating Officer, President, or Vice President; and at least 30% of the board of directors is composed by women[128].

Global trade is a key driver of inclusion and opportunities for domestic economies. The exportation of goods and services from one country to another can be characterized by threatening risks, particularly if one of the

[125] "US$2 million for more advanced countries including: Argentina, Brazil, Chile, China, Colombia, India, Korea, Mexico, Morocco, Peru, Russia, South Africa, Thailand, Tunisia, Turkey, and all EU accession countries-Poland, Hungary, Czech Republic, the Baltics and Slovenia." Retrieved from: International Finance Corporation. (2020). *IFC's definitions of targeted sectors*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/ifcs+definitions+of+targeted+sectors

[126] International Finance Corporation. (2017). *MSME finance gap: Assessment of the shortfalls and opportunities in financing micro, small and medium enterprises in emerging markets*. https://www.ifc.org/wps/wcm/connect/03522e90-a13d-4a02-87cd-9ee9a297b311/121264-WP-PUBLIC-MSMEReportFINAL.pdf?MOD=AJPERES&CVID=m5SwAQA

[127] International Finance Corporation. (2020). *Banking on women*. https://www.ifc.org/wps/wcm/connect/Industry_EXT_Content/IFC_External_Corporate_Site/Financial+Institutions/Priorities/Banking_on_Women/

[128] International Finance Corporation. (2020). IFC's definitions of targeted sectors. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/ifcs+definitions+of+targeted+sectors

nations involved in the trade is a developing one, since that they are typically more influenced by conflicts, riots, political instabilities, and governments' arbitrage actions. IFC, through many programs, offers guarantee products to avoid risks that characterize international trade flows in more than 90 countries worldwide, encouraging the creation of a global exchange network. Its wide set of trade and commodity finance programs is composed by:

- The *Global Trade Finance Program*, through which the corporation helps issue banks deliver financing even in riskier markets by offering them technical training and transaction-specific guarantees to cover up to 100% of transaction value, with the incredible result of $60 billion supported in trades without a single loss[129].
- The *Global Trade Liquidity Program*, by which IFC mobilizes funds from the private sector to support trades in developing nations by participating in risk sharing agreements with global and regional banks subscribing up to 50% of the transaction portfolio, with an amount of $53 billion supported[130].
- The *Global Trade Supplier Finance*, by that IFC invests short-term financing on SME's suppliers directly through digital finance platforms or indirectly through third institutions, with a disbursement of $3 billion since its launch for an average transaction's financing of $13,000[131].
- The *Critical Commodities Finance Program*, through that the corporation is involved in the promotion of global trades that involve the exchange of energy, food, and agricultural commodities to reduce the lack of these necessary elements in the poorest states by financing import and export processes for these assets, having supported so far firms from 45 emerging markets with $23.5 billion in transactions[132].
- The *Global Warehouse Finance Program*, whose goal is the increment of working capital financing for the agriculture sector by delivering short-term loans to banks, that in turn will provide financing secured by warehouse receipts as collateral to farmers and commodity traders, with a result of $6 billion loans supported[133].

[129] International Finance Corporation. (2020). *Global trade finance program*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/gtfp

[130] International Finance Corporation. (2020). *Global trade liquidity program*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/gtlp

[131] International Finance Corporation. (2020). *Global trade supplier finance*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/gtsf2

[132] International Finance Corporation. (2020). *Critical commodities finance program*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/critical+commodities+finance+program

[133] International Finance Corporation. (2020). *Global warehouse finance program*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/gwfp

- The *Structured Trade and Commodity Finance*, that is an initiative launched to complement IFC's commodity programs described above, utilized by IFC to assist each single project that requires a superior expertise and knowledge, having assisted global trades for more than $3 billion[134].

One fundamental of finance is that higher investment's risk can lead to higher returns. Moving along this rationale, IFC partners also with private equity funds and venture capital firms, which are economic entities whose core business is the collection and management of risk capital, in order to allow promising firms of low-income countries gaining access to financial resources to pursue a faster economic growth. Usually, small businesses have a shortage of knowledge and experience as well as capital, so equity funds and IFC send expert managers who can assist them during the whole period of expansion. To improve the impact of this sector, IFC hosts the *Global Private Equity Conference*, that is the biggest event dedicated to private investments in emerging markets, where every year more than 900 fund professionals from more than 70 countries discuss how they can contribute to world's development by creating opportunities through their job. In 2019, IFC committed $499 million for funds.

Strongly motivated to leave its footprint in the battle for the alleviation of poverty, IFC addresses the financial issues related to business sectors maintaining a special focus on the hardest social challenges of this century that also have an important economic impact, like climate change and gender inequality.

The corporation is a leader one as regard as the creation and promotion of markets for climate business, being aligned with the WBG's targets for fiscal years 2021-2025, that comprise doubled climate investments for $200 billion[135]. This investment field nowadays is one of the most profitable, having the potential of attracting more than $23 trillion by 2030 from just 21 emerging economies[136], but on the other hand is one of the most difficult to face, since that climate change can have a devastating impact in the world and year after year more stringent requirements need to be respected to reduce this threat. The principal objective of the corporation regarding this channel, besides directly investing, is the share of its knowledge and expertise in order to educate private sector's institutions work sustainably by cutting gas emissions, building green facilities, using large-scale renewable energy, and reducing waste. IFC is, indeed, involved in many climate-smart initiatives by which it develops new strategies, products, and business models to assist financial organizations better manage financial risks derived by climate change. Since that its policy is oriented to co-financing and mobilization of funds, the agency has created a free available report to attract private investors entitled *Creating markets for climate business*, where there are presented seven different sectors full of economic opportunities and how to

[134] International Finance Corporation. (2020). *Structured trade commodity finance*. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/financial+institutions/priorities/global+trade/structured+trade+commodity+finance

[135] World Bank Group. (2018, December 3). *World Bank Group announces $200 billion over five years for climate action* [Press release]. https://www.worldbank.org/en/news/press-release/2018/12/03/world-bank-group-announces-200-billion-over-five-years-for-climate-action

[136] International Finance Corporation. (2016). *Climate investment opportunities in emerging markets: An IFC analysis*. https://www.ifc.org/wps/wcm/connect/59260145-ec2e-40de-97e6-3aa78b82b3c9/3503-IFC-Climate_Investment_Opportunity-Report-Dec-FINAL.pdf?MOD=AJPERES&CVID=lBLd6Xq

address them. In the last fiscal year, it has disbursed, with the help of its clients, about $5.8 billion in 44 countries to support 93 projects of this kind.

Gender equality is a necessity that must be satisfied to remarkably increase shared prosperity, since that the mismatch between male and female labour's condition generates losses for trillions in human capital wealth. The fight to reduce gaps between women and men needs also the active participation of the private sector. IFC works in this way by offering its solutions to more and more women-owned enterprises and conducting initiatives that give access to opportunities for women in entrepreneurship and employment. By doing so, the corporation is trying to break down the barriers that limit their living standards, particularly in developing countries where the woman's role is often undervalued. Alongside its partners, it has addressed this challenge supporting many female-oriented initiatives, like the *Women Entrepreneurs Finance Initiative*, that is a platform where female entrepreneurs and women-owned SME in emerging markets can access to a wide range of products, services, and information to improve their businesses. Moreover, it invests in a lot of gender bond programs, through which debt securities are issued in emerging markets to finance women-owned companies. The agency promotes diversity in corporate leadership to balance the presence of both genders, even in its board of directors, which is composed by 36% from women with the goal of increasing this percentage up to 50% by 2030[137].

The countries where there is a real necessity of IFC's intervention are typically less-developed states where foreign investors may be unwilling to make investments, due to particular exchange rate policies, adverse trade regimes, political instability, and other conditions that make a project financing too risky to be delivered. To be eligible for IFC financing, nations must be members of the organization, whose status is acquirable with a share subscription process only by those states that are already members of IBRD[138]. Working in the different sectors described above, it is currently engaged in many areas of the world, promoting a sustainable growth day by day, by applying lessons learned in one nation to solve problems in another. Since its nature of a developmental corporation, its presence and influence are more remarkable in low-income countries from Asia, Africa, Latin America, and Eastern Europe, but it is also active in industrialized those nations that are its major partners. It has settled different priorities and strategies for different geographic zone, focusing on how the private sector in each area can contribute better to domestic growth. IFC divides its main working areas into six geographic groups: East Asia and the Pacific, Europe and Central Asia, Middle East and North Africa, Latin America and the Caribbean, South Asia, and Sub-Saharan Africa. To better define the importance of IFC in these countries below are provided financial data regarding last fiscal year and examples of large-scale projects.

[137] International Finance Corporation. (2020). *Corporate leadership*. https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Gender+at+IFC/Priorities/Corporate+Leadership/

[138] International Finance Corporation. (2012, June 7). *Articles of agreement*, art. II. https://www.ifc.org/wps/wcm/connect/d057dbd5-4b02-40f8-8065-9e6315c5a9aa/IFC_Articles_of_Agreement.pdf?MOD=AJPERES&CVID=jBfBkXT

In East Asia and the Pacific, its long-term investment commitments were about $1.58 billion, together with mobilized funds of nearly $2 billion from the private sector's institutions. This geographical zone is one of the most afflicted by pollution worldwide. To alleviate the negative impacts that arise from this problem, IFC leads the *China Climate Finance Advisory Program* (first known as *China Utility-Based Energy Efficiency Finance Program*), an initiative launched in 2006 by the corporation to create a collaborative climate between financial institutions in order to develop solutions that can reduce gas emissions and foster a cleaner production.

In Europe and Central Asia, it committed an amount of $745 million, mobilizing $555 million in investments from third institutions. This area is experiencing every year devastating effects from weather events. The impact of natural disasters can be too disruptive for many nations of this geographic zone. To help them face environmental risks in the best way, IFC offers loans to banks, which in turn provide their financial products to SME assisting them in the construction of more resistant green buildings, but even in the development of climate-smart products.

In the Middle East and North Africa, IFC pledged $520 million and raised funds for $371 million through its syndications. The most frightening problem of regions from this area is the shortage of health and education services and professionals of these kinds. The corporation plays its role by strengthening human capital's development in low-income countries and encouraging them creating a value-added for their population, by providing financing for projects that aim at the construction of universities' facilities, new basic schools, hospitals' renovation, and imports of technologies.

In Latin America and the Caribbean, the organization directly invested $2.49 billion, encouraging its partners to provide financing for $3.71 billion. The first threat that these regions are facing is the deforestation. This plague endangers not only the rural human communities present in the area, but also many animal species, many of which risk extinction. IFC supports a lot of forestry projects, providing financing to green-friendly enterprises whose core business is the implementation of solutions that aim at the conservation of natural ecosystems. An example of its work is the $15 million loan delivered by to "Reforestadora del Sinú", an eucalyptus-planting project whose goal is the recovery of 5,700 hectares in Colombia[139].

In South Asia, investments for $1.85 billion were attributable to IFC and $1.15 billion to the private sector. This area is one of the most afflicted by the shortage of energy worldwide, since that most of the area is experiencing a fast population growth. To support renewable energy investments in order to alleviate this problem, IFC delivered an anchor investment[140] of $75 million in the $300 million five-year green bond program sponsored by AC Energy Finance International Limited, that is the first Asian infrastructure-focused

[139] International Finance Corporation. (2019, August 16). *IFC approves $15 million loan to Reforestadora del Sinú to promote the rural sector in Colombia* [Press release]. https://ifcextapps.ifc.org/IFCExt/Pressroom/IFCPressRoom.nsf/0/8503D185A5891ED185258458005D82EC

[140] An anchor investment is the first subscription of shares by an important institutional organization which will boost the popularity of the initiative and attract more investors.

green bond to be listed on the Singapore Exchange. This investment will further the instalment of 5 GW solar plants and wind farms in Vietnam by 2025[141].

In Sub-Saharan Africa, it has committed long-term loans for $1.72 billion, while its clients provided nearly $2.28 billion. IFC in these countries focuses mainly on agribusiness' sector. Most of the population is composed of rural communities and their only livelihood is agriculture. The organization has undersigned different partnerships with local suppliers and commodities' producers to create a network that has a strong potential for boosting agribusiness' development. With the help of its clients, IFC aims to assist each single farmer who needs to improve their job condition, through financing in construction projects for irrigation systems, delivery of commodities, and distribution of agrotechnology.

IFC, as well as being a direct source of financing for its member countries, has a catalytic role in mobilizing private capital through syndications, such that it helps investors by providing just minority contributions only when these are really needed. In its *Articles of Agreement* (2012) there is stated that "*the corporation shall not undertake any financing for which in its opinion sufficient private capital could be obtained on reasonable terms*"[142]. Moved by this concept, it acts as a partner of private investors, sharing all risks with them, but not being their substitute. IFC's loan programs have strict limits regarding the amount of deliverable capital, which are designed to maintain this idea of co-financing. It cannot deliver the whole investment needed for a specific project, issuing maximum a minority portion of the necessary capital but never more than 50% of the investment total amount requested. Its policy is oriented toward the idea that the principal investor should always be the private partners, which also have the leadership and management responsibility in every process and decisions. To take part in IFC's co-financing programs, an enterprise must be recognized as an eligible financial institution[143]. Different types of syndication have different eligibility criteria (See Ch. 3, para. 3.2) in order to provide access to a wider range of organization types and better mobilize private funds. The idea of establishing large collaborations involving a multitude of companies all around the world lays at the centre of IFC's core business, which is strategically designed to diversify its portfolio across a wide range of regions, industries, and sectors.

IFC has strict criteria that must be met in order to start a new project. Investors that want to collaborate with the agency can ask for access to its financing programs by applying through the compilation of an investment proposal, which will be accurately analysed by the organization to verify the feasibility and sustainability of the request. There is not a standard scheme for the investment proposal, but IFC has provided an indication of some preliminary information that it should contain. The application may include: a brief

[141] Nalus Quintos, R. (2019, February 12). *IFC invests in AC Energy green bonds to support renewable energy investments in the Asia Pacific region* [Press release]. International Finance Corporation. https://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/1100D7AD0B6316318525839F000DC876?OpenDocument

[142] International Finance Corporation. (2012, June 7). *Articles of agreement*, art. III, § 3(i). https://www.ifc.org/wps/wcm/connect/d057dbd5-4b02-40f8-8065-9e6315c5a9aa/IFC_Articles_of_Agreement.pdf?MOD=AJPERES&CVID=jBfBkXT

[143] Eligible Financial Institutions are commercial agencies that must meet some defined criteria in order to be approved for a specific project finance. Eligible criteria are decided by the organization that launch the project. Typically, they are banks, trust companies, credit unions, insurance companies, pension funds and investment companies.

description of the project; personal and financial information about the sponsors and the appointed top management; a description of the technical arrangements proposed; a complete financial prospect of the project including profit and loss statement, balance sheet, cash flow projection, debt repayment scheme, and ratios; information about government incentives and regulations on exchange controls, capital entry, and repatriation; and a description of the expected contribution of the project to the economic development of the country involved[144].

The corporation only invests, under markets conditions, in competitive projects that should satisfy its investment criteria. To be accepted for financing, the initiative needs to be in a developing country, which must be part of the 185 IFC member states, in the field of the private sector, as stated in the *Articles of Agreement*. In addition to being feasible and profitable, it must be satisfactory from an economic standpoint, by having the ability to generate surpluses and returns that are necessary to maintain a stable financial structure in the long-term. IFC considers investments only in initiatives that will benefit the national economy of the member country involved. According to the environmental and social standards of the agency, the project must be environmentally and socially sound too. This latter assessment is processed to ensure that ESG issues are adequately addressed in the project cycle by investors, through the choice of technologies and solutions that will have a sustainable impact. Since that IFC's staff is formed by a mix of many types of specialists, there are many anthropologists, psychologists, and environmental lawyers who are involved in the ESG due diligence to contribute in a better understanding of environmental and social risks and opportunities associated with a proposed investment. As well as the project should be in line with the IFC *Performance Standards for Environmental and Social Sustainability*, the requesting enterprise should be too. The corporation has, indeed, an *IFC Exclusion List* for both projects and intermediaries that cannot apply for its financing. It does not invest in initiatives or companies which: promote the production of goods deemed illegal under the host country laws or under international regulations; promote the production of war goods; promote the production of tobacco or liquors; promote a gambling activity; promote the production of radioactive materials; promote the production of unbonded asbestos fibres; and promote poaching activities[145].

The developmental role of this institution is remarked by the fact that, despite being a finance corporation with its legal identity which is involved only in projects that can generate returns, it does not pay any dividends: if an investment generates a profit, this is completely retained to be reinvested in other development initiatives. Its special mandate also allows it to be tax exempted, so even its loans are free of any taxation and this is an additional attraction for every potential investor.

IFC has a sort of convening power, which means that when it enters new markets or offers new products in the existing ones, other financial institutions often follow along. Investors are encouraged to trade internationally, with its assistance, thanks to the high credibility of this institution, which is always been rated

[144] International Finance Corporation. (2020). *Investment proposal*. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/solutions/investment-proposals

[145] International Finance Corporation. (2007). *IFC exclusion list*. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/ifcexclusionlist

AAA by Standard and Poor's Global Ratings[146], Aaa by Moody's[147], and classified as 0% risk weighting[148] under Basel framework. This credit score is essential for the agency to maintain its ability to easily accessing global markets and also its low-cost funding.

3.2 Financial Products and Services

IFC assists its clients in designing sustainable financial sector plans, establishing a favourable regulatory environment, identifying necessary solutions, and ordering different priorities. It helps economic institutions enhance their business models by supporting new policy reforms that allow them to have more flexibility, offering technical training of staffs to develop multiple skills, and providing a wide range of instruments and services that facilitate their work. The products and services made available by the corporation aim at reinforcing the role that the private sector's enterprises can have in achieving the two goals of ending extreme poverty and sharing economic prosperity. It offers a wide variety of solutions which can be tailored to satisfy each client's needs, as well as reach many economies as possible and have a greater development impact.

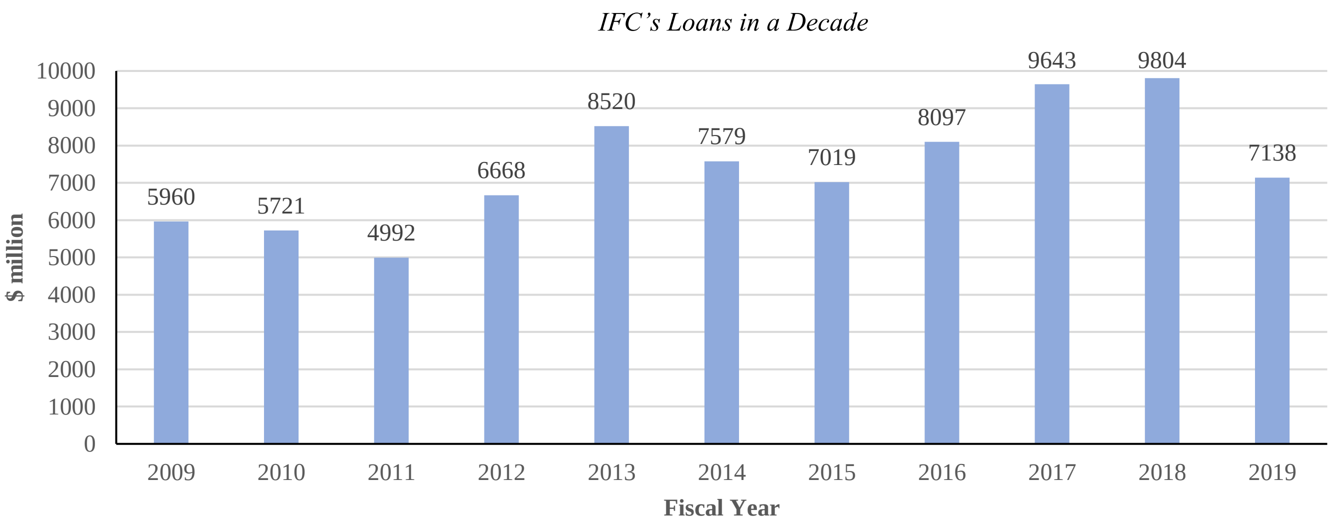
a. Direct Loans

IFC directly finances corporations and projects principally with loans issued under market conditions and risks assumptions. This financial instrument is mainly used by the corporation to invest in those private sector's institutions whose core business involves initiatives and works that have great development potential. Loans constitute a necessary help to allow MSME and individual entrepreneurs access capital markets and purse an economic growth. They are long-term products, typically with a life for seven to 12 years, with a grace period set up in relation of the project's needs; however, they can be delivered with an amortization period of 20 years for projects that have longer completion phases. Traditionally, they were only structured in the currencies of major industrialized countries, but IFC is even more applying new standards to satisfy the increasing client's demand of domestic-oriented products, issuing them in 74 different local currencies nowadays. IFC offers loans that are typically secured (i.e. senior to borrower's other obligations, so reimbursed first if default occurs), characterized by a variable interest rate, but in some cases it can land even unsecured loans and fixed interest rate assets. There are strict requirements that must be respected to preserve the co-financing nature of the agency: IFC's loans have a maximum cap of $100 million per project, covering 25% of the total costs for new projects, 35% for smaller projects, and 50% for the expansion of pre-existing projects.

[146] Standard & Poor's Financial Services LLC. (2020, February 14). *International Finance Corp*. Retrieved April 9, 2020, from S&P Global Ratings.
[147] Ortiz-Bollin, A. (2019, November 19). *International Finance Corporation*. Retrieved April 9, 2020, from Moody's Investors Service.
[148] The categorization of risk-weighted assets gives information about the measurement of the default risk, which is the chance that a company will be unable to satisfy its debt obligations. A 0% risk weighting is typical of assets held by the organizations with the highest credibility and essentially no credit risk, like all the agencies of the World Bank Group.

Respecting these standards, it can finance the whole amount needed for an initiative or 100% of a private company, with the fundamental contribution of its partners. This product is mainly requested for housing financing in emerging markets. All kinds of issued loans are accounted in the *Loan Servicing System*, managed by IFC since 2002 to capture every transaction and record all the projects engaged. Last fiscal year IFC provided $7.1 billion with these products, financing enterprises and initiatives worldwide. The total amount of capital issued through direct long-term loans was accounted for $25.4 billion in 2019, representing 57% of the whole disbursed investment portfolio of the corporation. In Graph 3.1 are presented the volumes of IFC's direct loans regarding the last decade, useful to understand how the corporation is recognized as one of the biggest sources of financing for the companies worldwide.

•Graph 3.1.



Note. Personal elaboration based on data from https://finances.worldbank.org/Projects/IFC-Investment-By-Product-Annual-Summary/4ahj-za8u. Data collected (2020) by World Bank Group. In public domain.

b. Equity Investments

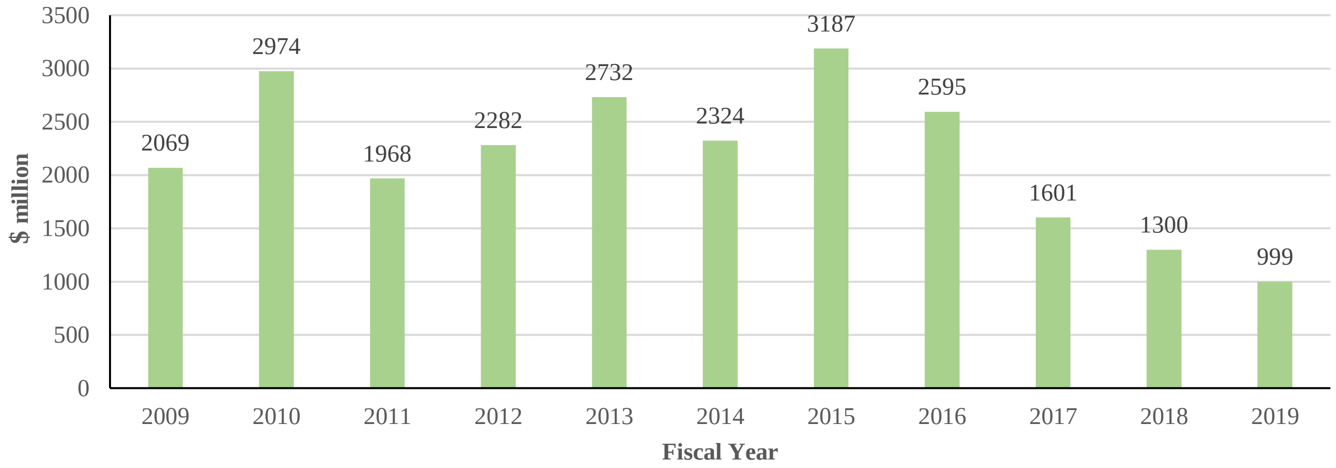
Since the 1990s, IFC is also a risk capital lender and invests directly in enterprises' equity or indirectly through private equity funds and venture capital firms. Equity is a fundamental financial instrument to support the business expansion and economic growth of companies. IFC's equity investments can take different forms, since that it offers capital traditionally issuing common or preferred stocks (i.e. investments which respectively give voting rights or just higher priority in repayment), but it can also provide quasi-equity[149] financing, that includes subordinated loans, mezzanine finance, or income notes. The latter solution is preferable if a project bears excessive foreign exchange risk or if there is not a well-organized market in the contest of the initiative. IFC usually decides to invest in a company by acquiring between 5% and 20% of its total equity shares, up to a maximum of 35%. Doing so, it takes part in the ownership of a firm, but, tending to be a passive investor,

[149] Launched in US during the 1970s, quasi-equity is offered to reduce sponsors' risk, since that it has a more certain remuneration than common equity. It is mainly used in order to limit the effect of the dividend trap, that arise when net income is lower than free cash flows and dividends cannot be distributed. It can be structured in the form of subordinated debt or mezzanine capital, that are instruments which represent claim senior to common equity, but junior to any type of debt.

the responsibility for the management remains attributable to the company itself. This kind of financing generally has a lifetime for eight to 15 years; however, the rule is that the corporation will send its equity interest as soon as the investment has matured. IFC usually denominates this financing in the currency of the country where this is issued, managing it using additional instruments, like put and call options, conversion features, and warrants. In 2019, it provided equity investments for $999 million. In that year, this product accounted for $12.93 billion of IFC's disbursed investment portfolio, representing the 29% of the latter. Graph 3.2 below presents the volumes of IFC's equity investments regarding the last decade, showing how the corporation has been a great source of equity instruments for the international organizations during recent years.

•Graph 3.2.

IFC's Equity Investments in a Decade



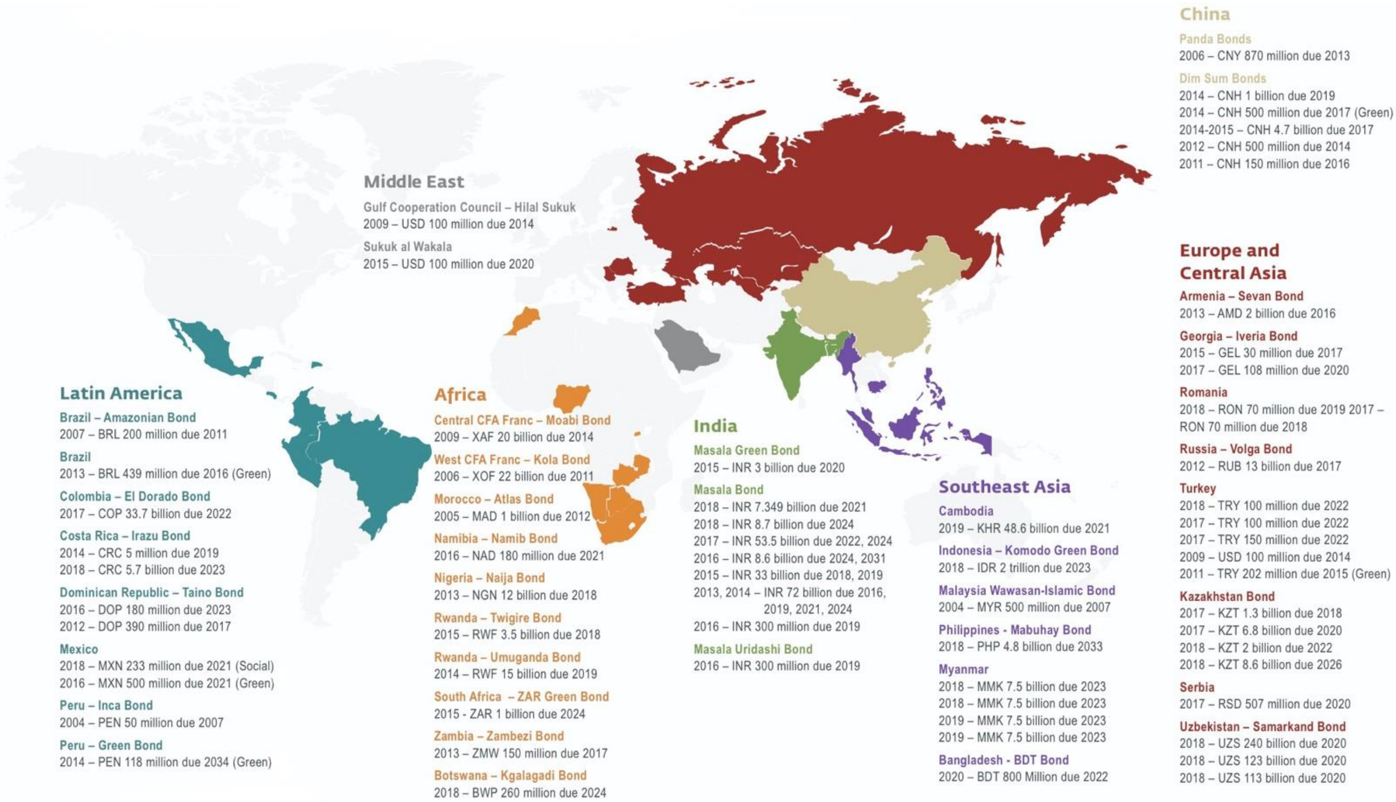
Note. Personal elaboration based on data from https://finances.worldbank.org/Projects/IFC-Investment-By-Product-Annual-Summary/4ahj-za8u. Data collected (2020) by World Bank Group. In public domain.

c. Debt Securities

Since that it cannot take any guarantees and financing from governments, IFC raises virtually most of the funds necessary for its lending activities through the issuance of different bond types within international capital markets. All these instruments are designed through the guidelines set by the *Green and Social Bond Principles* (See Ch. 3, para 3.3). These standards for the creation of sustainable bonds have now become an example for all the issuers of financial instruments, so much so that these products are nowadays recognized as one of the most effective tool not only to invest responsibly, but also to try to make a positive social and environmental impact through the allocation of financial resources in certain initiatives. Being a US institution, most of its bonds are issued in dollars, but in order to enter different markets worldwide, it swaps them in other 20 different currencies, like euro, pound, Australian dollar, and yen. It has modelled its issuance programs in different shapes to attract investors from different industries and countries and expand its fund account, as the example of the Uridashi bond, through which IFC is able to raise yearly a great portion of its funding just from Japan (nearly 10% of the total borrowings). To attract also low-income countries in its funding process and make them active investors in their own development, IFC has designed two different funding initiatives: the *Global Medium-Term Note Program*, launched in 2008, and the *Discounted Note Program*, that started in 2009. With the first one, the organization offers sustainable bonds with maturities of three months or longer, trying to maintain a strong position in the issuance of plain vanilla and structured notes. In the last fiscal year, the total volume of medium-term notes issued was about $3.3 billion. Through the second program, IFC offers high-quality short-term investment opportunities to developing nations at discounted conditions, issuing $14.2 billion bonds in 2019. Since the launch of these initiatives, IFC has increased roughly its bond issuance in developing countries during the years, as shown below in Figure 3.1, which presents a list of the most charged social and environmental types of bond issued by the corporation since 2004 all around the world.

•Figure 3.1.

IFC Issuing in Local Markets



Note. Adapted from https://issuu.com/ifcinvestors/docs/fy20_ir_investor_presentation_jan?fr=sZmE2MzI1OTU5Mw. Copyright (2020) by International Finance Corporation.

d. Risk Management Products

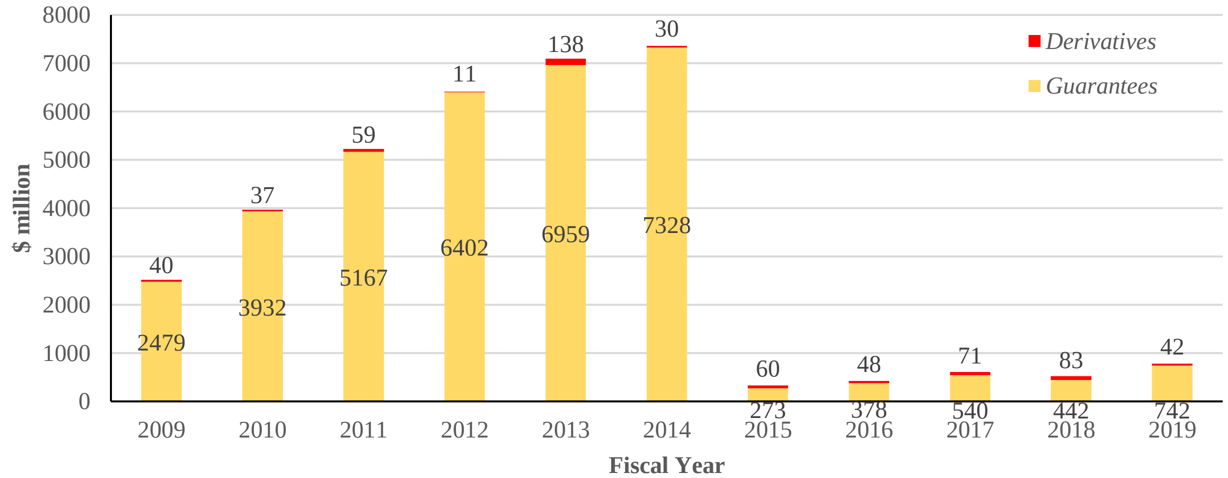
IFC offers a wide range of structured and securitized solutions to help its clients hedge against foreign exchange risk, interest rate volatility, and commodity price fluctuations. This type of long-term instruments is essential to encourage international trades and give MSME the possibility to access financial markets overcoming their credit ratings, such that international markets are generally limited to clients of high credibility. IFC's treasury client solutions are composed by four main subgroups of instruments: local-currency derivatives, partial credit guarantees, portfolio risk-sharing facilities, and securitizations.

As for loans and bonds, the corporation seeks to reach as many countries as possible structuring its financial products in different currencies to avoid exchange risk. IFC is one of the few multilateral organizations that provides long-term risk management derivatives to clients in emerging markets. It offers interest rate caps and floors[150], cross-currency swaps, forwards, put and call options, and many other hedging instruments designed in different currencies. To date, IFC has products structured in more than 70 currencies, opening access to financial markets even for companies from the smallest nations.

A partial credit guarantee is a special purpose instrument used by IFC, through which it promises the full debt service repayment up to a predetermined amount, encouraging international transactions between private parties by overcoming the possible low credit score of borrowers. The value of the guarantee is calculated as a percentage of the debt principal plus interest. It is typically designed to cover the whole amount of the debt in order to both reassure creditors and expand funding sources for borrowers, avoiding default risk. A guaranteed debt is secured by a reinstatement provision, that disposes IFC's intervention for the repayment process when the borrower goes through a period of illiquidity. If a default occurs, IFC offers the minimum guarantee amount needed to facilitate the recovery process in order to leave the responsibility for repayment upon the borrower. These products can be denominated in both local and foreign currencies, to cover also convertibility risk. Through its guarantees, IFC helps many MSME enter in capital markets for the first time, allowing them raise long-term funding that previously may have been unavailable. In 2019, IFC had outstanding guarantees for $2.89 billion. They are the principal risk management product issued by the corporation, as shown in Graph 3.3, which compares the volume levels of guarantees and derivatives provided during the last decade.

•Graph 3.3.

IFC's guarantees and derivatives in a decade



Note. Personal elaboration based on data from https://finances.worldbank.org/Projects/IFC-Investment-By-Product-Annual-Summary/4ahj-za8u. Data collected (2020) by Word Bank Group. In public domain.

[150] An interest rate cap is a derivative instrument in which the buyer receives payments, on a predetermined data, every time the interest rate exceeds the pre agreed interest rate level in a specific period. Similar to the cap, an interest rate floor is a derivative instrument in which the buyer receives payments, on a predetermined data, every time the interest rate goes below the pre agreed interest rate level in a specific period.

A risk sharing facility allows IFC's partners to transfer a portion of the risk associated in a portfolio of assets. It is a bilateral agreement between the corporation and a risky assets' owner by which IFC reimburses its client if a loss occurs. It is typically required when investors want to expand markets with the launch of new products but are exposed to high loss risks due to the shortage of historical data that can facilitate the feasibility of the initiative. By this product, IFC reimburses the buyer with a fixed percentage of the loss if this exceeds a predetermined threshold. It is applicable only on assets that meet some specific eligibility criteria, and if requested for a whole facility portfolio, new assets can be added in for a period up to three years, or until the portfolio reaches a pre-agreed maximum cap. In certain cases, the issuance of these instruments comprises also an advisory service offered by IFC over the specific asset.

IFC invests in domestic and international securitizations, which are forms of off-balance sheet financing that involve the sharing of financial assets in turn to the issuance of derivatives that will repaid through the cash flows generated by the pooled asset. In order to establish the seniority of parties, the risk of the investment is split in two or three tranches: the junior one, attributable to the original asset's holder, which will absorb first an eventual loss; the mezzanine one, that is held by originator's partners, less exposed to losses; and eventually the senior one, which is exposed by little risks and is structured to attract more investors. IFC generally holds the senior tranche and offers its products to provide more liquidity, facilitating the development of securitization processes.

e. Syndication Programs

IFC promotes private sector's development financing directly as well as indirectly by the mobilization of funds from other financial institutions. Syndications involve arrangements whereby investors offer participations in other's financing, sharing risks and profits. Instruments of this kind generally include a floating interest rate tied to a reference rate for the relevant currency, a spread, a commitment fee, and a front-end fee. IFC excludes from its syndications governmental institutions because these can bear risks without default issues, and the corporation's policy is that it helps only economies that really need assistance, as stated in its *Articles of Agreement*. Through mobilization of funding, it incentivizes transactions both of a domestic nature and cross-border, involving as many countries as possible to achieve the WBG's twin goals. As the lender of the initiative, IFC administers the financing coherently with participants' fiduciary duties, taking only actions that bring them financial benefits. Its syndication products include: Management Co-lending Portfolio Program (MCPP), B loans, parallel loans, and A loans participations. The agency was able to mobilize $7.23 billion only with these four products last fiscal year, raising about a total of $10.21 billion from other investors, calculating also funding derived from PPPs and global trade programs.

MCPP is a platform by which IFC creates diversified portfolios of syndicated loans targeting emerging markets and offers participations to possible investors. This instrument allows the corporation to raise more capital for financing by co-lending on commercial terms alongside third parties. MCPP structures loan portfolios that is indexed to IFC's account, providing opportunities of certain results. The agency and its clients sign an upfront *Administration Agreement* in order to determine the design of the portfolio based on pre agreed eligibility criteria for financing. Once investors have committed capital, IFC starts its management and when an eligible transaction is identified, it shares with partners the financial exposure derived from the deal. It is based on a blind pool approach, since that investors are encouraged to commit upfront funds by the fact that IFC will share the financing's results with them, aligning its interests with client's interests and ensuring that each decision will benefit both. With this product IFC raised $481 million in 2019.

IFC offers loan participations through its B Loan Program. When IFC finances projects with a loan, part of this is retained by the agency and accounted for its own (A Loan), while the remaining part is offered to investors (B Loan). So, there are two parts that relation with IFC: the borrower, that signs with the corporation a *Loan Agreement* for the full amount requested, and the participants, that subscribe a *Participation Agreement* only as regard as the amount of the B loan. This is a method to both share with partners the advantages derived from being a triple A rated corporation and provide diversified financing to the borrower. Eligible financial institutions for this program must have at least one investment grade long-term foreign currency rating from Standard and Poor's Global Ratings, Moody's, or Fitch, but cannot be official agencies, like export credit agencies, public agencies, and multilateral organizations. Moreover, participants cannot be registered in the same country of the borrower. Traditional partners in this program are commercial banks. IFC raised $1.78 billion last fiscal year through loan participations.

With the aim of extending its syndications also to those investors that are ineligible for B loans, IFC offers its assistance for parallel loans. It acts exactly as an arranger, identifying financial opportunities, managing the due diligence process, and taking part in the negotiations between borrowers and lenders. All parallel lenders sign a *Common Terms Agreement*, by which IFC records their commitments. The use of this approach benefits both sides of a loan because the intervention of IFC cuts costs and time. Typical users of this service are developmental financial institutions and local banks that are unrated. The corporation mobilized $3.73 billion with parallel loans in 2019.

An A loan participation is the sale of an A loan's portion to financial institutions. IFC uses this product in order to reduce its country exposure relatively to both corporate and project financing. Through a *Participation Agreement* it transfers shares of a direct loan typically to commercial banks, by pooling its financing with different investors. Clients benefit from A loan participations thanks to the direct management of IFC, sharing with it risks and results.

f. Advisory Services

Financing could not be sufficient to assist companies advising economic-financial challenges, so IFC advises its clients to help them address the complex development challenges that are increasing day by day. Thanks to its decennial experience in capital markets, the corporation is able to provide advisory services to firms that want to invest in each key business sectors mentioned in the previous paragraph. It drives small partners in expand their businesses in areas that they would not been able to access by themselves, making them more competitive, and helps stronger clients maintain a financial stability in the most sustainable manner possible. Last year IFC advisory services' portfolio was accounted for $1.53 billion. The corporation offers advice to companies, financial institutions and funds, which in change pay fees. It assists its clients in structuring international and domestic transactions, developing new business models and environmental-friendly products, optimizing their resources, cutting costs and time, establishing and strengthening infrastructure, and improving their development process. It also offers these services to governments, in order to help them structure PPPs and implement reforms that support the creation of jobs in its member countries. More than half of its advisory initiatives are managed through the C*reating Markets Advisory Window*, that is a three-year funding facility created to assist investors from developing countries, where the demand of these services increases time after time. In addition to direct advice, IFC offers many training courses for staff, webinars, and e-learning programs to enhance soft and hard skills needed for a better management of its products.

g. Asset Management

A good management of the investment portfolio is essential to achieve strong financial results. IFC is actively involved in the management of the products provided to its clients by constantly monitoring their performance. Thanks to continuous assessments, it can anticipate disruptive impacts that market's shocks may have on investments. Its management team performs a day by day analysis of market conditions, new opportunities, expected returns, financial trends, risk exposures, and volatilities in order to be as much informed as possible about the right business decisions to take. Investors are always informed about projects developments. In 2009 IFC created the Asset Management Company, an incorporated facility through that it mobilizes and invests the capital of third institutions in emerging markets, providing benefits for both the lenders and the countries where the financing is channelled. Through it, IFC manages investments from sovereign wealth funds, multilateral development organizations, international financial institutions, pension funds, and national development agencies. Since its birth, the Asset Management Company has raised $10.1 billion, invested in more than 120 development projects in emerging nations[151].

3.3 The Importance of Sustainability for IFC: Programs Implemented for the Integration of ESG Principles Into its Economic-Financial Strategies

Being strongly committed to the promotion of sustainable financial practices and solutions, IFC is commonly regarded as a world leader in responsible and impact investing, so much so that its operational policies, financial instruments, and guidelines for structuring green and socially beneficial investment's decisions are now recognized as market standards for every company, government, and financial intermediary

[151] IFC Asset Management Company. (2020). *About us*. https://www.ifcamc.org/about-us

directly involved in meeting the SDGs. Thanks to the experience accumulated over six decades and its commitment to helping developing countries, the corporation has the potential to catalyse the private investments needed to achieve the global sustainable goals, especially as regards the eradication of extreme poverty (SDG 1) and the reduction of social and economic inequality (SDG 10), which are essentially the primary objectives for which all IFC's financial policies are structured. Given the aforementioned need to create an international regulatory framework for sustainable financial practices, the organization has developed over the years many programs to offer its clients guidelines in this regard. Among the wide range of initiatives implemented, the most successful are the *Performance Standards on Environmental and Social Sustainability*, the *Green and Social Bond Programs*, the *Equator Principles*, and the *Operating Principles for Impact Management.*

a. Performance Standards on Environmental and Social Sustainability

As the largest international catalyst corporation for responsible investments from the private sector, IFC is committed to providing its clients and partners with guidelines to facilitate the development of sustainable initiatives in accordance with established standards related to the identification, measurement, management, and mitigation of social and environmental risks associated with financial activities. The adoption of this regulatory framework, which must always be applied in compliance with the laws in force in the country where the project is located, is of fundamental importance to ensure that institutions funded by IFC do not produce negative impacts on communities and ecosystems through their business operations. Firms and institutional investors that implement the *Performance Standards on Environmental and Social Sustainability*[152] are able to both guard against unexpected risks and improve their operative performance, since that the respect of these requirements offers them many benefits, such as optimizing ESG risks management systems, avoiding legal claims for harmful behaviours, decreasing operational costs, facilitating the access to new emerging markets in developing countries, enhancing the reputation, producing specific sustainable outcomes, easier aligning financial activities with broader development objectives, structuring best practices in order to address global social and environmental challenges, and targeting new investment opportunities. The Performance Standards, whose official icons are presented in Figure 3.2, are the following:

[152] International Finance Corporation. (2012, January 1). *Performance standards on environmental and social sustainability*. https://www.ifc.org/wps/wcm/connect/24e6bfc3-5de3-444d-be9b-226188c95454/PS_English_2012_Full-Document.pdf?MOD=AJPERES&CVID=jkV-X6h

•**Figure 3.2.**

IFC Performance Standards on Environmental and Social Sustainability

Note. Retrieved from https://www.ifc.org/wps/wcm/connect/9975cfbc-6337-4f19-8935-d067a88b2899/PPT_ESDueDiligenceforFIs_June2017_external.pdf?MOD=AJPERES&CVID=mTm0cYL. Copyright (2017) by International Finance Corporation.

1. *Assessment and management of environmental and social risks and impacts*.

The first standard, which should always be applied to all impact investments and responsible initiatives, outlines the importance of:

- An integrated ex-ante evaluation about ESG risks in order to identify all the environmental and social impacts that projects can produce and consequentially structure a decision-making process that aims at developing sustainable strategies to avoid harmful consequences.
- A transparent informational disclosure about all the matters that possibly affect the communities where the projects are launched, thus ensuring an effective stakeholders' engagement.
- A well-developed assessment and management system tailored with the size of the initiative to constantly measure and control the ESG performance during its entire life, so as financial entities can structure new actions to adjust wrong behaviours and improve the likelihood of achieving tangible positive social, environmental, and financial returns.

The latter must incorporate information and data about: the sustainability policies through which companies and investors both design their environmental and social goals and decide about the principles adopted to reach these objectives in a responsible way (e.g. the PRI, the *Equator Principles*, and the *Operating Principles for Impact Management*); the identification processes for external risks and impacts; the management programs aimed at avoiding negative impacts and, when this is impossible, at mitigating them; the internal organizational structure; the emergency preparedness systems by which financial entities establish response actions to address unexpected dangerous situations; the monitoring and reporting systems for the projects' outcomes; and the stakeholders' analysis and the engagement planning, since that an open and continuous dialogue with the societies and workers that can be affected by the initiatives' impact is always requested to develop sustainable activities.

2. *Labour and working conditions*.

The second standard highlights that the most important asset for companies is their workforce. It is fundamental for all organizations to establish a safe workplace and a transparent and fair worker-management relationship to ensure the respect of employees' rights. In order to develop sustainable business models, firms must promote an equal treatment for all workers by offering them equal wages and career opportunities, protect their employees, especially vulnerable categories, by providing social insurance and safe working conditions, be aligned with the labour laws that regulate the countries where the initiatives are located, and avoid the use of forced and child labour.

3. *Resource efficiency and pollution prevention*.

Since that the industrial activities can produce negative effects on water, land, air, and consequentially on people's health, organizations should establish an efficient resource management and operational system, aiming at avoiding pollution through prevention plans oriented to limit high levels of greenhouse gas emissions and natural resources overconsumption. By applying this standard, economic-financial institutions can be able to develop new eco-friendly technologies and strategies that are useful for meeting the SDGs and avoiding negative impacts on communities and the environment, thus reducing even operational costs and reputational damages.

4. *Community health, safety, and security*.

As well as harmful effects on ecosystems, industrial activities can negatively impact communities through the wrong use of equipment and materials. To anticipate and avoid adverse effects on the populations living in the areas where the projects are located due to operational misconducts, firms must evaluate all the possible risks and impacts that their activities can carry on people and workers, developing an assessment and management system useful to constantly monitor the state of the works and their compliance with local laws and human rights.

5. *Land acquisition and involuntary resettlement*.

One problem that can arise from the acquisition and use of land for operations linked to broader business projects is the so-called involuntary resettlement, which indicates both the physical and economic displacement of local communities. This phenomenon must be avoided by exploring alternative actions to launch the initiative or, when this is impossible, mitigated through the establishment of an appropriate land management system that is aligned with the host country's legal framework as regards this subject and by which offer a wide range of solutions to reimburse the displaced people with compensation and benefits. This fifth standard indicates so that the aim of sustainable activities must be to improve the living conditions of the societies where they are implemented, taking care not to cause any harm from land expropriation.

6. *Biodiversity conservation and sustainable management of living natural resources*.

Sustainable business models should be oriented towards the biodiversity conservation by structuring operational plans that taking into consideration the characteristic of the natural habitats where the activities are implemented, thus ensuring the attention for the preservation of local flora and fauna. Developing eco-friendly businesses through the use of renewable and low-emission resources results in many advantages not only for the environment, but also for the companies that implement them because they can obtain many benefits from their ecological commitment, such as the production's increment, the cut of operating costs, the reputation's enhancement, and positive results for the global sustainable development.

7. *Indigenous people*.

Among the vulnerable groups that can be more affected by the negative effects linked to companies' activities, there are the indigenous populations (i.e. mainstream groups that are distinct from the national society). Because of their limited economic and social status, they may be unable to defend their rights over lands and natural resources, and so firms should develop operations that do not damage them, ensuring the preservation of their culture and identity. Moreover, they represent possible projects' stakeholders, thus they should always be consulted, informed and included in the design process in order to tailor all the activities with their needs, avoiding devastating consequences on them and fostering an inclusive sustainable development.

8. *Cultural heritage*.

The last standard aims at guiding financial organizations and investors in preserving the cultural heritage by developing decision-making processes for the operational activities that carefully target at avoiding harmful consequences on properties and sites of historical, religious, cultural, artistic, and archaeological importance.

b. Green and Social Bond Programs

As stated in the previous paragraph, IFC is one of the most important international sustainable bond issuers, rated with the highest score of AAA by MSCI's *ESG Ratings* system (See Ch. 2, para 2.3) last fiscal year[153]. With the aim of aligning each investment activity as transparently as possible with the broader development objectives, the corporation has adopted the guiding *Green and Social Bond Principles* developed by the International Capital Market Association[154] to structure the principal instruments through which it manages to raise the majority of funds to finance its services, placing them at the baseline of both the *Green Bond Program*[155], by which IFC finances eco-friendly and climate-smart initiatives, and the *Social Bond*

[153] International Finance Corporation. (2020). IFC: A sustainable bond issuer. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ifc+a+sustainable+bond+issuer

[154] The International Capital Market Association is a no-profit organization headquartered in Switzerland that has nearly 600 members in 62 nations. Its goal is to promote an international partnership between its members by assisting them in developing financial activities in capital markets. Within the association, IFC is currently a member of the executive committee about sustainable bonds principles.

[155] International Finance Corporation. (2020). IFC's green bonds process. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/ifc+green+bonds+process

Program[156], through which it finances projects whose core business is to tackle the major social challenges currently faced worldwide. Both programs comply with the *Performance Standards on Environmental and Social Sustainability*.

Through the *Green Bond Program*, IFC has issued about 172 green bond types that account for nearly $10.39 billion since 2010, year of the project's launch[157]. This initiative is aligned with the *Green Bond Principles*, that are a set of guidelines for helping bond issuers structuring with higher transparency and disclosure their solutions towards the goal of encouraging more private investments in projects whose core business is the development of efficient facilities with regarding renewable energy and green production. Behind the directions dictated by these principles, IFC's *Green Bond Program* is based on four pillars, that concern about the use of proceeds, the process for project evaluation and selection, the proceeds' management, and the reporting process. The proceeds raised from the green bonds' issuance can be used only for the financing or re-financing of those projects which are structured with the goal of leaving a positive impact on the environment by addressing the problems caused by climate change. Initiatives eligible for green bond financing are extracted from those included in IFC's climate-related loan portfolio, which is composed by projects that satisfy the *IFC's Definitions and Metrics for Climate-Related Activities*, that is a document that summarizes all the types of financial projects that can be recognized as climate-related according to the vision of the corporation. This paper indicates that IFC, after having assessed a stringent due diligence process, can use green bonds' proceeds to invest in those activities located in developing countries characterized by a low level of greenhouse gas emissions and whose core business is the mitigation and adaptation against climate change's effects through an efficient use of renewable energy and low-carbon equipment. All the proceeds produced by the program are registered into a special account, called the Green Cash Account, thus ensuring a greater transparency as regards data and information about the portion of capital yet allocated into green projects and the remaining amount that can be disbursed to new initiatives of this kind. Finally, IFC follows the best practice recommended by the green principles also on reporting matters: it publishes a document annually in which are listed all the projects financed through green bonds' proceeds. In order to ensure transparency and disclosure, the corporation includes in this report the description of each project, the amount of capital disbursed for each investment, a study about the expected impact that projects should produce on ecosystems, and additional information on each investment contained into external public documents.

Through the *Social Bond Program*, IFC has issued about 33 social bond types that account for nearly $2.81 billion since 2017, year of the project's launch[158]. As well as the green program is aligned with the green

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[156] International Finance Corporation. (2020). IFC's social bonds process. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/ifc+social+bond+framework

[157] International Finance Corporation. (2020). *Green bonds*. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/grnbond-overvw

[158] International Finance Corporation. (2020). *Social bonds*. https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new/investor+relations/ir-products/socialbonds

principles, this initiative is aligned with the *Social Bond Principles*, that are a set of guidelines for helping bond issuers structuring their instruments with more transparency and disclosure in order to encourage more investments from the private sector in projects that address the biggest social issues of this century, such as extreme poverty and gender inequality. Behind the directions dictated by these principles, IFC's *Social Bond Program* is based on the same four pillars previously listed with regarding the *Green Bond Program*. The proceeds raised from the social bonds' issuance can be used only for the financing or re-financing of those projects which are structured with the goal of leaving a positive impact on communities by addressing broader social problems. Initiatives eligible for social bond financing must meet the requirements imposed by IFC's *Banking on Women* or those described by IFC's *MSME Definition* (See Ch. 3, para 3.1 for both topics). Projects that can be financed through social bonds' proceeds are those launched in developing countries and whose core business is the socioeconomic advancement and empowerment through the construction of affordable housing, the implementation of health and education services, the distribution of safe food and drinkable water, and the creation of new jobs. As well as green projects, the one of this kind are subject to a stringent due diligence process and a continuous performance monitoring. All the proceeds produced by the program are registered into a special account, called the Social Cash Account, thus ensuring a greater transparency as regards data and information about the portion of capital yet allocated into social projects and the remaining amount that can be disbursed to new initiatives of this kind. Finally, IFC follows the best practice recommended by the social principles also on reporting matters: it publishes a document annually in which are listed all the projects financed through social bonds' proceeds. The corporation, with the aim of ensuring transparency and disclosure, includes in this report the description of each project, the amount of capital disbursed for each investment, a study about the expected impact that projects should produce on communities, and additional information on each investment contained into external public documents.

c. Equator Principles

Also based on the *Performance Standards for Environmental and Social Sustainability*, the *Equator Principles*[159] constitute a voluntary international framework to enable financial institutions to identify, measure, and continuously monitor ESG risks through the observation of guidelines to facilitate the structuring of best practices in decision-making processes for financial activities and policies. Promoted by IFC in 2003, currently these principles are officially adopted by 105 organizations in 38 countries worldwide[160]. Companies and investors which incorporate them into the due diligence analysis are able to understand concretely how their investment activities will impact environmental systems and communities, so they are allowed to implement their financial projects more responsibly and through a better risk management process, aiming at facilitating the global sustainable development necessary to eliminate poverty, inequality, and climate change effects without damaging the planet. The *Equator Principles*, which can be applied in each sector and country,

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[159] Equator Principles. (2020, July). *The equator principles: July 2020*. https://equator-principles.com/wp-content/uploads/2020/05/The-Equator-Principles-July-2020-v2.pdf

[160] Equator Principles. (2020). *EP association members & reporting*. https://equator-principles.com/members-reporting/

are useful for the responsible development of five principal financial solutions, that are: project finance advisory services for new sustainable initiatives whose total costs are $10 million or more; project finance for investments in new social and environmental programs whose capital costs are at least $10 million; project-related corporate loans in new initiatives that require financing of $50 million or more, to be repaid in at least two years, and of which the majority of the lent capital is managed directly or indirectly by the client, which must therefore have the effective operational control over the projects; bridge loans[161] that are repaid in maximum two years and which will be refinanced through project finance or project-related corporate loans; and both refinancing and financing for the acquisition of projects structured according to the principles' framework, so as to allocate new capital to sustainable initiatives before their completion phase but without changing their initial scope. The *Equator Principles* are the following:

1. *Review and categorization*.

Financial institutions that want to invest in a project should first internally analyse its characteristics by looking at its social and environmental possible impacts and risks, inserting the initiative within one of the three classes described by IFC's environmental and social categorization process, that are: Category A (i.e. projects with the highest ESG risks and irreversible harmful impacts), Category B (i.e. projects with moderate ESG risks and calibrated reversible impacts which can be mitigated), and Category C (i.e. projects with minimal ESG risks and no harmful consequences on ecosystems and communities).

2. *Environmental and social assessment*.

In order to verify the feasibility of a sustainable project, investment organizations should be also informed externally about the possible environmental and social risks and impacts by the entity which requests the financing. The latter must develop and deliver an accurate and objective Assessment Documentation, in which there are also listed all the possible solutions to mitigate the potential harmful consequences linked to the initiative. Usually, for both Category A and Category B projects, the Assessment Documentation includes a climate change risk assessment and the evaluation of the adverse human rights impacts.

3. *Applicable environmental and social standards*.

Each sustainable project should be analysed not only through the evaluation of the possible risks and impacts, but also assessing if it complies with the applicable environmental and social standards currently regulating the country where it is located. The *Equator Principles*' framework indicates that the initiatives launched in industrialized states (designated countries) should be assessed through the relevant national laws as regards environmental and social issues while those located in less-developed countries (non-designated countries) should comply with the IFC *Performance Standards for Environmental and Social Sustainability* and the WBG *Environmental, Healthy, and Safety Guidelines*, which are a wide set of recommendations containing information on the best practices for sustainable investments applicable in different sectors. The principles

[161] Bridge loans are short-term financing usually used to offer capital to companies that need to cover operational costs until they obtain a long-term loan or repay an existing obligation.

also present a list of all the countries that are recognized as designated, where investments can anyway be assessed through IFC's ESG standards.

4. *Environmental and social management system and Equator Principles Action Plan*.

To be eligible for financing, the clients must structure both an environmental and social management system and plan, thus ensuring that the project complies with sustainable standards for the satisfaction of the investment organizations during its whole life. If the assessment outlines that the initiative does not fully comply with these standards, investors can structure together with the borrowers the so-called *Equator Principle Action Plan*, that is intended to overcome the gaps with respecting the applicable standards and implement anyway the financial activity by offering the client a grace period in which it has to develop the necessary actions to adjust compliance errors.

5. *Stakeholder engagement*.

Clients should also develop an informed consultation and participation process in order to communicate to the populations living in project site all the possible risks and impacts that the initiative will directly produce on them. This requirement complies with the concept of shareholders' engagement, since that the whole initiative's operational process must be assessed also looking at the needs of the vulnerable minorities and indigenous people, taking care of their will and opinion by aligning the project's activities with the guidelines set by the seventh IFC's performance standard. The implementation of a well-developed information process is necessary to ensure the project's compliance with the principles.

6. *Grievance mechanism*.

Clients should establish an appropriate grievance mechanism to be sure that local communities and workers can express their concerns and opinion about the project's performance with greater transparency and without costs. This is useful to implement actions that correct misconducts and resolve problems that can arise during the operational process. Each grievance mechanism should be tailored to the risks and impacts of the initiative, so Category A projects must have more refined mechanisms than those for less risky financial activities.

7. *Independent review*.

Financial institutions should ask for the intervention of an external independent environmental and social consultant in order to be sure that the project effectively complies with the principles and that both the entire documentation provided by the client and the internal assessment are objectively correct. An independent review is, indeed, extremely useful to evaluate the feasibility of a responsible financial activity before delivering the requested financing.

8. *Covenants*.

In order to ensure the greatest possible compliance with the sustainability principles, the entity requesting a loan to implement its project must not only demonstrate that it has set up the entire operational process in accordance with the environmental and social protection laws in force in the country where it intends to launch the initiative, but must also include covenants in the agreement with the investor aimed at constantly verifying compliance with these standards during the entire project's life. The client must also both offer a periodic reporting on the ESG performance to the investment organization and dismantle the facilities according to the pre-agreed decommissioning plan to avoid unnecessary costs.

9. *Independent monitoring and reporting*.

Other than the independent evaluation, the financial institution which is interested in investing in a sustainable project must appoint an external independent environmental and social consultant to constantly monitor the project's ESG performance and reporting on it too. This action ensures a greater transparency and disclosure of the initiative and its results.

10. *Reporting and transparency*.

In addition to the requirements set by the *Performance Standards on Environmental and Social Sustainability*, clients must ensure that: an abstract of the environmental and social assessment is always accessible online, an annual report on the greenhouse gas emissions is published every year, and that all ESG information and data are regularly shared with the Global Biodiversity Facility (i.e. an international research network whose principal goal is to offer open access to data and information about all types of life on the planet). Under this specific requirement, also investors must report annually on all their financial activities complying with the *Equator Principles*.

d. Operating Principles for Impact Management

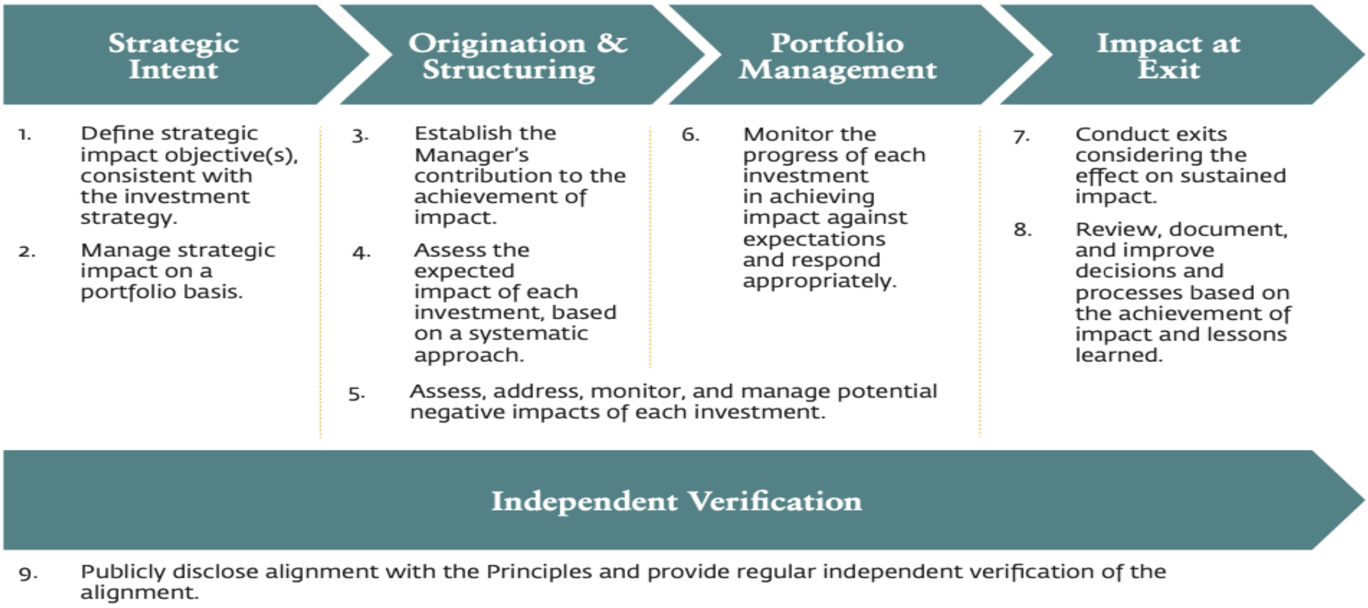
It is estimated that to meet the SDGs by 2030 at least $5 trillion per year should be disbursed for the development of impact investments[162]. IFC, being a leader also in this financial sector, launched last year an operational framework composed by a set of guidelines, called *Operating Principles for Impact Management*[163], that are useful for structuring in the best way investment activities oriented at the production of tangible social and environmental returns. The operating principles, designed on the observation of the best practices from asset managers, asset owners, development financial institutions, and institutional investors, suggest what processes should be implemented in order to align financial activities with the SDGs with the aim of intentionally providing positive impacts on communities and ecosystems through a correct management of capital assets. These guidelines, that were developed to fit with the specific needs of each type of organization worldwide, provide suggestions on how the latter should design their impact management systems through five main components, namely strategy, origination and structuring, portfolio management, exit evaluation, and independent verification. The *Operating Principles for Impact Management*, summarized in Figure 3.3 below within the respective operational components, are the following:

[162] International Finance Corporation. (2020). *Impact investing at IFC*. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/development+impact/principles

[163] International Finance Corporation. (2019, February). *Investing for impact: Operating principles for impact management*. https://www.impactprinciples.org/sites/opim/files/2019-06/Impact Investing_Principles_FINAL_4-25-19_footnote change_web.pdf

•Figure 3.3.

Operating principles for impact management



Note. Retrieved from https://www.impactprinciples.org/sites/opim/files/2019-06/Impact_Investing_Principles_FINAL_4-25-19_footnote change_web.pdf. Copyright (2019) by International Finance Corporation.

1. *Define strategic impact objective(s), consistent with the investment strategy.*

Investors and managers should calculate the impact that they want to produce by both establishing pre-determined objectives related to positive results on people and the planet and aligning each investment decision with the mission to meet the sustainable goals set by the international agreements. These objectives must always be tailored to the size of the single investment or the investment portfolio, thus ensuring that the achievement of tangible positive results is clearly feasible.

2. *Manage strategic impact on a portfolio basis.*

Investors and managers should develop a management process to constantly monitor the impact performance of both individual investments and financial portfolio, aligning also incentive systems with the achievement of pre-established impact goals.

3. *Establish the Manager's contribution to the achievement of impact.*

For each operation of an investment's process, the managers should structure a transparent informative document in which they describe all the activities implemented by them to produce tangible impacts, so as to provide a vision on their contribution to sustainable development.

4. *Assess the expected impact of each investment, based on a systematic approach.*

Investors and asset managers should implement an ex-ante assessment process in order to define the expected impact, its size, the magnitude of the activities' effects on communities and nature, the correlated risks and opportunities, and the likelihood that social and environmental results will be produced.

5. *Assess, address, monitor, and manage potential negative impacts of each investment.*

ESG risks must be evaluated by managers thus both developing operational decisions to avoid harmful consequences linked to impact investments and structuring mitigation and adaptation systems when negative results are impossible to be avoided.

6. *Monitor the progress of each investment in achieving impact against expectations and respond appropriately*.

Impact performance must constantly be measured using appropriate monitoring systems. The results of periodical assessments should be shared through public disclosure of information and data. When the performance evaluation outlines that the investment is not performing well as regards its impact purpose, managers should implement new financial actions to adjust misconducts and try to re-align the operations towards the initial expected results.

7. *Conduct exits considering the effect on sustained impact*.

Investors and managers which want to exit from an impact activity should carefully consider the effects of their choice, since that the investment's result can be critically affected if its structure is changed during its lifetime.

8. *Review, document, and improve decisions and processes based on the achievement of impact and lessons learned*.

The final evaluation of the investment's results must always be carried out by comparing the effective social and environmental outcomes with the initial expected goals, thus improving management systems for future investment decisions.

9. *Publicly disclose alignment with the Principles and provide regular independent verification of the alignment*.

Every organization which incorporates the *Operating Principles for Impact Management* into their impact investing activities must publicly disclose an independent evaluation each year as regards their effective commitment under these guidelines.

3.4 Solutions Used by IFC for the Evaluation of ESG Performance and Impact

Representing one of the core organizations of the WBG, all investments and financial strategies of the IFC are structured to meet the SDGs, especially the twin goals of eradicating extreme poverty and reducing inequality through shared prosperity. Being a widespread practice among the various international financial organizations, the corporation has also developed its own internal mechanisms for ESG performance assessment and socio-environmental impact measurement in order to calculate the actual contribution made directly or indirectly through its clients to the expansion of sustainable development. The agency commits to different levels of evaluations; indeed, it performs ex-ante assessments for both direct projects or advisory services for third initiatives by measuring what are the potential benefits with respecting to the context where the activities are launched, monitors the effective results through a constant control of the key performance indicators, implements ex-post assessments by comparing the social, environmental, and economic returns with the initially expected outcomes set and always aligned with broader sustainable development's objectives, and measures tangible long-term effects produced on the communities and ecosystems through the counterfactual analysis (See Ch. 2, para 2.4). To ensure that the ESG performance is objectively assessed and reported for every single investment, all IFC evaluations are carried out alongside the Independent Evaluation Group, that is a rating agency whose core business is improving the WBG's development results by helping its agencies in structuring efficient measurement, monitoring, accountability, and reporting systems for their financial activities, trying to address in the best way both ESG and economic issues linked to these.

In July 2017, IFC launched its *Anticipated Impact Measurement and Monitoring* (AIMM) system, that represents nowadays its principal tool to both decide which investment should be delivered, by looking at its possible outcomes, and to assess the effective tangible results that the implemented financial activities have produced in relation to the initial goals. To date, the corporation has assessed more than 750 investment initiatives through this instrument since its creation[164]. The AIMM provides five sets which comprise 25 different industrial sectors, so as the corporation is able to identify risks and opportunities of investment initiatives as regards the context where they are developed. The first set comprises financial activities linked to private investment funds, housing finance, insurance, water and wastewater, retail, and tourism. The second set comprises investments into power, micro and digital financial services, mining, oil and gas, and SME finance. The third set comprises financial operations into manufacturing, agribusiness, education, venture capital direct investment, and distressed assets. The fourth set comprises financial activities carried out into telecoms, media, and technology, airports, ports, and roads. Finally, the last set offers considerations about investments into health, trade finance, climate finance, capital markets, and property.

By using this tool for an end-to-end assessment, IFC first rates all the sustainable projects available for financing within international markets by evaluating the possible impacts related to them, measuring the expected project outcomes and the expected market outcomes, and then evaluates the final results comparing them with the latter. The final score for the ex-ante assessment, which ranges from zero to 100, is produced by applying the following equation:

$$\text{AIMM Score} = (\text{Potential Impact}\cdot\text{Likelihood Factor})_P + (\text{Potential Impact}\cdot\text{Likelihood Factor})_M$$

where the first term represents the project outcomes and the second term indicates the market outcomes.

Project outcomes indicate the direct effects of the initiative on stakeholders, the indirect economy-wide effects, and both the environmental and social returns. The assessment of the project's potential impact is performed through two analyses: the first one is needed to understand what is the development gap that the initiative is trying to cover within a specific country, using the gap spectrum[165] established by the corporation to compare projects within different geographical contexts, while the second consideration is implemented to measure impact's intensity, that represents the efficiency of the intervention. Higher development gap requires higher

[164] International Finance Corporation. (2020). *Anticipated impact measurement and monitoring (AIMM)*. https://www.ifc.org/wps/wcm/connect/CORP_EXT_Content/IFC_External_Corporate_Site/Annual+Report/Results/AIMM/

[165] According to the IFC's gap spectrum, the difference between the same industrial sector in different countries can be small, medium, large, or very large.

impact intensity. The evaluation of the likelihood factor means implementing considerations about the probability that the project will effectively produce some social, environmental, and economic returns. This analysis is carried out by measuring three main risk factors, which are the operational risk, the sector-specific risk, and the country risk. Through the likelihood factor's assessment, the corporation can understand if there is a low, medium, or high probability that the project will produce tangible benefits according to its size.
Market outcomes refer to the changes in the markets' structure caused by the initiative launched, resulting from positive or negative distortions in their competitiveness, resilience, integration, inclusiveness, and sustainability. As well as that for the project outcomes, the evaluation of the initiative's potential changes on markets is performed through two analyses: the first one is needed to understand what is the current status of the market where the project should be launched, using the market typologies' classification[166] described by the IFC in order to compare projects between industrial sectors within different countries, while the second consideration is always implemented to measure impact's intensity. The evaluation of the likelihood factor is implemented in the same way described above for the one as regards the project outcomes, but this time looking at the market dimension and so identifying the three principal risks previously mentioned plus the political risk.

The corporation, with the aim of constantly monitoring its financial activities to control their progress and if they are performing well as regards the initial expectations, uses in combination with the AIMM a set of key performance indicators called the *Harmonized Indicators for Private Sector Operations*, that are 28 sustainable indicators used by the largest international financial institutions. These measures are shown in Table 3.2.

•Table 3.2.

Harmonized indicators for private sector operations

SECTOR	INDICATOR	DEFINITION
Cross Sector	Direct employment-Operations and maintenance	Number of full-time employees
	Direct employment-Construction phase	Number of full-time construction workers
	Payment to governments	Amount of the total transfers to host governments (corporate income and profit taxes)
Agribusiness	Farmers reached	Number of farmers included into financial activities
	Total sales	Gross value of sales to farmers
Education	Students enrolled	Number of both full-time and part-time students enrolled
Energy	Power production	Energy delivered to off takers
Financial Intermediation	Number and amount of outstanding microfinance loans	Number and amount of microfinance loans in portfolios
	Number and amount of outstanding SME loans	Number and amount of loans to SME in portfolios
	Number and amount of outstanding housing loans	Number and amount of housing loans in portfolios

[166] According to the IFC's market classification, there are highly under-developed, under-developed, moderately-developed and highly-developed markets.

Private Equity And Investment Funds	Investments	Number of investments and volume of capital delivered
	Investee direct employment-Operations and maintenance	Number of full-time employees
	Investee direct employment-Construction phase	Number of full-time construction workers
Health	Patient served	Number of patient consultations provided
Housing	New dwellings	Number of new residential dwellings constructed (one family per unit)
	Improved dwellings	Number of residential dwellings refurbished (one family per unit)
Information And Communication Technologies	Number of mobile subscriptions	Number of mobile subscriptions (post-pay and pre-pay)
	Number of fixed data subscriptions	Number of fixed data subscriptions (post-pay and pre-pay)
	Number of fixed voice subscriptions	Number of fixed voice subscription (post-pay and pre-pay)
Industries And Services	Domestic purchases	Value of purchases of goods and services from domestic suppliers
	Total sales	Unit count and gross value of sales
	Export Sales	Value of export sales for products and services
Transportation	Containers handled	Twenty-foot equivalent units cargo transported
	Bulk cargo handled	Tonnes of bulk cargo transported
	Passenger use	Number of passengers using transportation
Waste And Sanitation	Water disposed	Amount of waste disposed
	Wastewater treated	Volume of wastewater treated
Water	Potable water produced	Volume of potable water produced

Note. Personal elaboration based on information from https://indicators.ifipartnership.org/wp-content/uploads/2014/06/harmonization_mou_14pg.pdf. Data collected (2013) by Harmonized Indicators for Private Sector Operations.

Conclusion

This third chapter illustrated how the ESG issues are effectively addressed by a real financial institution, presenting the example of the IFC, one of the five organizations comprising the WBG, that is most important multilateral financial organization worldwide and whose goal is to end extreme poverty and boost shared prosperity developing investments in line with the SDGs.

IFC, which focuses exclusively on the private sector, has a key role in the promotion of the world's economic and social development, especially targeting least-developed countries, where it finances initiatives and projects by using its own capital, mobilizing international financial markets, and providing consultancy and technical assistance to governments and companies. Trying to provide a remarkable impact in emerging markets with the help of its more than 2,000 clients, IFC is globally involved in different industries that have a great potential for a broad sustainable development, offering both direct and indirect investments in projects launched in sectors as agribusiness, infrastructure, services, employment, manufacturing, and financial markets. Strongly motivated to leave its footprint in the battle for the alleviation of poverty, the corporation addresses the financial issues related to these business sectors maintaining a special focus on the hardest social challenges of this century that also have an important economic impact, like climate change and gender inequality, by responsibly developing socio-environmental programs. IFC operates through a wide range of financial products and services, investing in many sustainable projects through direct loans, equity investments, debt securities, risk management products, and offering syndication programs, advisory services, and asset management. Playing a leading role in fostering a sustainable development, the corporation has developed many programs oriented at the creation of a common global framework for both responsible and impact investments, providing examples of how these types of financial activities should be structured. Among the most important initiatives launched in this regard, those that have been more successful and that are still adopted by many companies worldwide are: the *Performance Standards on Environmental and Social Sustainability*, namely guidelines to facilitate the identification, measurement, management, and mitigation of social and environmental risks associated with financial activities; the *Green and Social Bond Programs*, through which the IFC offers sustainable instruments, structured through responsible standards, to finance eco-friendly projects, climate-smart initiatives, and social interventions; the *Equator Principles*, that constitute a voluntary international framework to enable financial institutions to identify, measure, and continuously monitor ESG risks through the observation of some guidelines for the decision-making process; and the *Operating Principles for Impact Management*, that are useful standards for structuring investment activities oriented at the production of tangible social and environmental returns. IFC has also developed its own system for ESG performance assessment and impact measurement, called *Anticipated Impact Measuring and Monitoring* system, which ensures greater transparency and objectivity in the evaluation of its sustainable investments.

In conclusion, this chapter has shown how IFC may represent an international good practice to look up to for boosting a sustainable development and achieving the SDGs by 2030 thanks to its strong commitment to tackle climate change and the other principal socio-environmental issues which are affecting the world today. The corporation and its programs should be considered as examples by companies worldwide in order to implement more and more responsible and impact financial activities, thus encouraging an expansion of sustainable finance and making the planet a better place to live.

CHAPTER IV

A Qualitative Analysis to Understand how Different Financial Subjects Involved in Sustainable Investments Address Environmental, Social, and Governance Factors

By providing a qualitative data collection, the final stage of this cognitive path will give the reader the opportunity to better understand the real vision that the subjects commonly involved in responsible and impact investment processes adopt in relation to these topics. This fourth part will present, indeed, the results of a qualitative analysis conducted through semi-structured interviews, subjected to three different economic-financial entities linked to the world of sustainable finance.

In this Master Thesis, it has been stressed over and over again how, even if in the last few years there has been a considerable growth of the awareness regarding the importance of ESG issues for an effective development of responsible and impact investments (indeed, it should be remembered that investors' attention on these topics is consistently growing mostly thanks to the international agreements made over the last five years), there is still a huge amount of work to be done to bring the current state of the art regarding the assessment of extra-financial factors to a really efficient and satisfactory level. In the previous chapters, it has been suggested that one of the main problems related to this situation is the lack of a clearly defined and cohesive international framework, which could help institutions from different countries to use predefined analysis and management techniques based on common and easily comparable standards. This lack of standardization consequently leads to the possibility that some institutions may not be able to efficiently manage the ESG-related risks, or even that some organizations (or even governments) decide to act as free-rider by completely ignoring the requests of the international community. In turn, all this means that today it is next to impossible to develop in a concrete way the global partnership required by the SDG 17, which is necessary to achieve all the other sustainable objectives. Therefore, it is logical to observe that there is a need for another intervention at the institutional level, aimed at creating a standard global framework that includes new sustainable business models to be implemented through the fruition on the market of predefined tools and indicators easily accessible to any economic-financial entity. Until these actions are implemented, corporations can only address ESG issues in the way they consider most appropriate to their condition, using the tools currently available on the market or developing in-house technologies.

The last chapter of this dissertation, which is of an experimental nature, will be developed specifically with the aim of understanding how companies really deal with ESG issues, going to investigate:

- The influence that extra-financial factors exert in relation to the choice of the business policy.

- The technologies and analysis criteria used to assess, manage, and measure the impact of non-financial factors on investment operations.
- Subjective considerations regarding the current state of the art on knowledge of ESG criteria (e.g. managerial vision on topics such as greenwashing[167], rating systems for sustainability, and the achievement of the SDGs by 2030).

In order to carry out a research work that is as explanatory as possible and through which various qualitative information can be gathered, it was decided to select three organizations belonging to three different institutional categories that commonly represent the subjects involved in sustainable investment processes, identified as "Debt Investor"[168], "Equity Investor"[169], and "Consulting Firm"[170]. Representing the three organizations, their respective sustainability specialists were contacted. The data collection process has been carried out through the use of a series of open questions both technical, oriented to understand how corporations deal with ESG factors on a daily basis, and subjective, oriented to provide information useful to understand the vision that professionals in the sector have about these issues. The questions were submitted to the three companies' professionals through semi-structured qualitative interviews. It has been selected this data collection methodology because the instrument of the semi-structured interviews allow the researcher to adjust the flow of the interview according to each situation, providing the opportunity to ask additional questions. Even if the questions are the same for each respondent, during the interview their order may change, thus providing a greater flexibility for the researcher. Finally, it was considered correct to submit the ESG survey's questions in such a way that the respondents could freely range between the different topics covered, thus producing well-structured and detailed answers. Table 4.1 below presents the question set, which was used to conduct all the three interviews.

•Table 4.1.

ESG survey's questionnaire

#	QUESTION
1	How do ESG factors influence the organization's investment beliefs?
2	What is the firm management's view of the value of ESG factors?
3	What is the firm management's view of the overall maturity of the organization's ESG policy?

[167] The greenwashing is the practice of providing misleading or false information about how a company address environmental issues. In essence, the firms that perform this practice mislead consumers into believing that their products are environmentally friendly, even if they are not.
[168] A debt investor is a financial subject that lends money to a third entity in change of the repayment of the whole amount plus interests at a future date. Generally, the loans are secured, so the risk related to this type of transaction is low and the return is quite solid.
[169] An equity investor is a financial subject that purchases shares of external assets or third companies, thus gaining the ownership rights. Equity investments are unsecured, so they are riskier than debt investments but also have the potential for a higher return.
[170] A consulting firm is a financial subject that provides professional feedbacks to a third entity in change of a fee payment.

4	Do you think that the world of finance is now reacting well to ESG issues or that there could be implemented more remarkable actions? If the second case, what could be done in your opinion?
5	Where do you think we are now in the education process for extra-financial issues?
6	How do you balance principles and diversification in terms of extra-financial matters?
7	What is the biggest problem in measuring non-financial data?
8	What resources are generally dedicated to ensuring proper implementation of the sustainability policy in the organization?
9	How does the organization identify and manage material ESG-related risks and how it uses non-financial factors to create value?
10	Which are the most important ESG analysis criteria used by the organization?
11	How does the organization integrate ESG concerns into its due diligence review?
12	How frequently is the ESG evaluation reviewed?
13	Which ESG dimension (environmental, social, or governance) is, in your opinion, the most challenging for companies in emerging markets? Why?
14	Are you willing to sacrifice investment returns to meet a good ESG performance?
15	Based on your experience, can you state that a good ESG assessment reduces the overall risk of a project? Why and how?
16	Is, in your opinion, active or passive (impact investing or responsible investing) the best ESG approach?
17	What is, in your opinion, the best ESG strategy to align non-financial considerations with client's objectives? Why?
18	How the PRI's signature has changed the organization's policy?
19	Many ESG requirements dictated by international agreements could be difficult to be met by some realities, especially for those small entities located in the least-developed countries. How this problem should be addressed, in your opinion?
20	Do you think that new international standards should be established to align investment behaviours towards more sustainable objectives?
21	Are, in your opinion, the multiple rating services a problem?
22	Do you think that is possible to meet the SDGs by 2030? If no, what do we need to be more effective in their achievement by time?
23	Are you satisfied with the tools offered within the global markets for the measurement of the ESG performance? Do you think that there should be implemented new standard solutions to align international behaviours?
24	What do you think about the greenwashing practice? How should it be addressed?
25	What is, in your opinion, the next big challenge for sustainable finance?

Note. Personal elaboration.

To facilitate the reading of the results of the interviews and make easier the comparison of the answers provided, this fourth chapter will not be divided into paragraphs but will present three short sections, each one dedicated to one organization, followed by a final conclusion where a critical comment on the research results will be proposed. In each section there will be provided:

- The presentation of the institution.

- The way in which the interview was performed (i.e. company figure interviewed and means of communication used).
- A brief comment on the answers provided.

- ***IFC***

As an entity representing the category of "Debt Investor", it was obviously decided to select the IFC; indeed, although stressed that the organization is able to develop its financial operations through multiple instruments and channels (including equity investments), it was noted that most projects are implemented through the allocation of debt (e.g. direct loans and debt securities). Having already thoroughly analysed this institutional reality in all its operational aspects within the previous chapter, the description of the company will not be included in this section to avoid repetition (for detailed information on the corporation, See Ch. 3).

The interview was conducted through a video-call with a Principal Environmental Specialist from the corporation. In this case, due to a limited time availability, it was not possible to submit all the questions comprised in the survey to the subject, who nevertheless answered most of the points in the questionnaire more than exhaustively. The following Table 4.2 shows the answers provided by the respondent (the subjective questions, being based on the direct experience of the subject interviewed, do not necessarily represent the views of IFC and should therefore be understood purely as personal consideration of the respondent).

•Table 4.2.

ESG survey's answers: IFC

#	ANSWER
1	ESG criteria certainly play a crucial role for the whole organization. By performing its role of sustainable investor, the IFC incorporates in-depth considerations on non-financial factors into all its operations, analysing both the correlated risks and opportunities under every aspect.
2	Addressing ESG factors in the best possible way is a prerogative of the institution both in terms of individual project evaluation and portfolio management. We believe that proper investment management must be performed not only on financial risks but also on non-financial ones, so that we can make the most of the opportunity to combine a financial return with a positive development impact on the environment and society.
3	Having faced many changes over the years, it can be said that the organization has reached a good level of maturity in terms of sustainability policy, so much so that today it is one of the fundamental pillars on which all functions and all aspects of the company are based on.
4	I think that the world of finance is reacting very positively to ESG issues, especially in view of the increasing number of responsible and impact investments developed during recent years. I also expect that this expansion of the sustainable finance channel will be more pronounced in the near future.
5	-
6	We use our standards (*Performance Standards on Environmental and Social Sustainability* and *Corporate Governance Methodology)* to assess and manage ESG risks in our operations and functions. We think that the assessment of non-financial factors has a key function in the development of every investment. As a responsible investor, the IFC always considers the impact that its financial initiatives produce within the markets, so the ESG assessment process plays a principal role in the implementation of the sustainability policy.
7	-

8	-
9	As already mentioned, each project is subjected to a careful analysis both with regard to the context, thus measuring market conditions and risks related to ESG factors, and with regard to the profitability of the initiative in terms of financial, environmental, and social return, in addition to the development impact that the project will have on the ground. The risk management function is a fundamental part of the development of any investment, as the organization seeks to take advantage of the opportunities offered by non-financial factors to create value through a careful risk assessment.
10	We use our *Performance Standards on Environmental and Social Sustainability* to track, monitor, and evaluate the ESG criteria in our investment processes.
11	We use the *Performance Standards on Environmental and Social Sustainability* as benchmarks and our *Environmental and Social Review Procedure* to implement the due diligence process.
12	We carry out a constant process of reviewing ESG risks and mitigants, both on each client and on each project.
13	Environmental and social issues are, by their very nature, complex. The social dimension is challenging. This because it can be complicated to implement, manage, and ensure development initiatives that have a positive impact on all the entities involved.
14	There is no need to sacrifice returns to meet a good ESG performance. Our goal is to generate positive financial, environmental, and social returns.
15	Obviously, a good ESG assessment is necessary to perform a good risk management function. Tracking, measuring, and evaluating both financial and non-financial factors facilitate this function and ensure robust projects risk management.
16	Since the institution has the prerogative of having a positive impact on the environment and society, impact investing can certainly be the most appropriate strategy for developing financial transactions aimed at ensuring positive development impacts.
17	I believe that, in order to develop an effective project that leads to positive impacts, stakeholder engagement is extremely important.
18	I think that the principles related to IFC’s standards are very close to those represented by the PRI, so the adoption of the latter can be seen as a further process of implementation of the sustainability policy by the organization. The subscription to the Principles is, therefore, another demonstration of the institution’s intention to develop responsible and impactful actions on a daily basis through the application of high sustainability standards.
19	This issue is closely linked to the way in which the organization has structured its standards and its policy; indeed, I believe that we need flexibility to help those markets that have capacity constraints, going to measure, project by project and requirement by requirement, the context in which we find ourselves, thus proportioning each request to the actual size of the client.
20	-
21	It would certainly be useful to start a process of standardization of the rating systems offered within global markets, so as to offer the clients a greater transparency on the evaluation methodologies adopted.
22	-
23	-
24	Greenwashing can be mitigated by increased transparency of firms. Disclosure standards (e.g. the PRI) and the increasingly sophisticated control tools provided on the market can mitigate the incidence of this practice. Compared to the past, today the industry is able to identify more easily the issues related to public disclosure of information thanks to independent evaluations, thus managing to limit practices of false or incorrect reports.
25	I believe that the next big challenge that the world of sustainable finance will face in the near future is linked to the problems of climate change and biodiversity preservation. Already today we can observe how the market is moving in this direction, developing more and more initiatives that have a positive impact on the environment and on the protection of flora and fauna.

Note. Personal elaboration based on the answers given by IFC’s Principal Environmental Specialist during an interview.

From a first analysis of the answers provided by IFC's Principal Environmental Specialist, it can be immediately noted that attention to non-financial parameters is, as already stated in the previous chapter, a strong prerogative of the corporation for the development of all its operational processes (answers 1 and 2). It is emphasized that the evaluation of ESG criteria, constantly reviewed (answer 12) and useful for effective implementation of the development and risk management process regarding investments (answer 15), is rather necessary to integrate all the risks related to non-financial dimensions, helping the organization both to take advantage of opportunities that otherwise would not be identified (answer 7) and to produce a positive impact on the environment and communities (answer 16) without giving up the search for an economic return (answer 14).

According to the Principal Environmental Specialist's experience, addressing the social dimension (answer 13) is complicated especially for the establishment of a perfect coordination between all the entities involved in a project. Closely linked to the latter consideration, it is therefore suggested that one of the best ESG strategies to implement is the creation of a strong relationship with stakeholders, involving them as much as possible in decision-making and operational processes related to sustainable investments and through effective stakeholder engagement over the life of an investment (answer 17).

As regards the current international state of the art about the ESG considerations, it has been suggested that there is a need to:

- Start a process of standardization of rating systems (answer 21) to ensure greater transparency in disclosure and avoid the greenwashing practice (answer 24).
- Ensure greater flexibility with regard to ESG standards (answer 19), so that markets with capacity constraints can effectively manage the risks arising from climate change, indicated together with the preservation of biodiversity as the greatest challenge that the world will face in the present and in the near future (answer 25).

In conclusion, it can be noted that from this interview there is a fairly positive view of the current global situation related to the knowledge of ESG issues, although there is considerable room for improvement at both institutional and technical level.

- ***ARPINGE***

As an entity representing the category of "Equity Investor", it has been selected ARPINGE[171] (namely, Architetti Periti Industriali Ingegneri Geometri). Founded in 2013, this is a public limited company that invests internationally as a promoter in infrastructure, plant, and real estate, with the typical approach of project financing and with a vocation to invest in new works and upgrades. The founding members (Cassa

[171] Arpinge. (2020). *Chi siamo*. https://www.arpinge.it/?page_id=457

Geometri[172], EPPI[173], and INARCASSA[174]) have allocated €170 million of initial capital which, thanks to a moderate leverage and the help of third-party partners, can activate total investments between €200 million and €400 million. The element that characterizes ARPINGE's positioning strategy mainly concerns a focus on projects that have a significant greenfield component, in relation to which the company, in the starting phase of the investment, will take on the role of industrial/operational promoter, thus assuming responsibility for identifying on the market the technical structures with the necessary skills to ensure the development of the sites, with timing and costs that are appropriate to the forecast plans as well as to the project objectives set. Since its inception, the company has declined sustainability in its three dimensions: economic, environmental, and social. Always attentive to environmental and social impacts, it has decided to invest its entire assets in energy transition, more specifically in energy from renewable resources, smart mobility, and energy efficiency in order to promote a model of sustainable development and zero emissions, as established by the Paris Agreement. ARPINGE is committed to this through both its ESG investment policy and its careful discipline towards sub-holding companies and vehicles in adapting to the principles of sustainability in day-to-day management. This approach is based on the belief that integrating extra-financial criteria contributes to the creation of value for the firm, investors, and the community as a whole. It aims to contribute to the achievement of the SDGs (focusing in particular on goals 7, 8, 9, 11, 12, and 13). Since July 2019, it has been a member of the *Forum per la Finanza Sostenibile*[175]. Since January 2020, ARPINGE joined the PRI.

The interview was conducted through a video-call with the Sustainability Officer from the company, who kindly answered all the questions in the survey by setting out both technical and subjective considerations, commenting on the current state of the art regarding the development of sustainable investing and the ESG factor analysis' methodologies. The following Table 4.3 shows the answers provided by the respondent (the subjective questions, being based on the direct experience of the subject interviewed, do not necessarily represent an absolute truth with regard to ARPINGE's view on the topics covered and should therefore be understood purely as personal consideration of the respondent).

[172] Founded in 1995, Cassa Geometri represents an association under private law to which all freelance surveyors enrolled in the Professional Register are registered. It provides pensions, welfare benefits, and a wide range of integrated welfare services. Retrieved from: Cassa Geometri. (2020). *Chi siamo*. http://www.cipag.it/it/cassa/la-cassa/chi-siamo

[173] Founded in 1997, the Ente di Previdenza dei Periti Industriali e dei Periti Industriali Laureati takes care of the compulsory social security of all experts enrolled in the appropriate colleges. Retrieved from: EPPI. (2013). Statuto e regolamento previdenziale. https://www.eppi.it/index.php/l-ente?class=1&subItem=1&idItem=1&idCast=1

[174] The Cassa Nazionale di Previdenza ed Assistenza per gli Ingegneri ed Architetti Liberi Professionisti is an organization that provides social security protection for engineers and architects who work in the liberal profession and do not enjoy other social security covers. It provides pensions and guarantees the members welfare benefits. Retrieved from: INARCASSA. (2020). *Cos'è Inarcassa*. http://www.inarcassa.it/site/home/cose-inarcassa.html

[175] Founded in 2001, the Forum per la Finanza Sostenibile is a non-profit association whose mission is to promote the knowledge and practice of sustainable investment, with the aim of spreading the integration of environmental, social, and governance criteria in financial products and processes. Retrieved from: Forum per la Finanza Sostenibile. (2020). *Presentazione*. https://finanzasostenibile.it/presentazione/

•**Table 4.3.**

ESG survey's answers: ARPINGE

#	ANSWER
1	A three-level influence can be driven by ESG factors: • ESG factors might exclude some investment opportunities (e.g. non-sustainable sectors). • Among different investment opportunities, ESG factors might drive a ranking of priority. • Investment opportunities might be evaluated to satisfy ESG criteria, for instance by considering specific technical requirements or inspections and related costs.
2	The concept of sustainability has always been an intrinsic value of the firm, as it invests in areas that support energy transition since its inception. With all the various changes that have taken place over time, made necessary mainly by the numerous crises (e.g. resulting from climate change or the COVID-19 pandemic), ESG criteria have become increasingly important. Hence, the need to evaluate every impact generated by the company's investment decisions, obviously trying to implement more and more positive impacts while limiting negative ones.
3	The firm is steadily making great strides towards the maturity of its ESG policy. Through the adoption of an investment policy exclusively driven by the focus on non-financial factors, the company is strongly committed to contributing to the achievement of certain sustainability objectives (e.g. the SDGs). It can therefore be said that we are at a good point, although there is still a lot of work to be done, especially as regards the development of a system for translating extra-financial factors into economic values (a problem afflicting the whole market).
4	I would say that the world of finance is reacting well, not least because there is a real need to tackle certain problems as quickly and effectively as possible. There are certainly still a number of actions that need to be implemented (e.g. the construction of an analytical framework for ESG criteria that is as standardized, common, and shared internationally) and strengthened (e.g. more effective initiatives against climate change shared by as many countries as possible). Possible solutions to encourage these new actions can be: • The allocation of incentives based on the real contribution offered by the countries. • The implementation of a control system including sanctions against those governments that adopt a free-rider behaviour.
5	Having made great strides in recent years, I think we are well advanced in the education process for extra-financial issues. It is true that more emphasis could be placed on academia in order to share, through scientific basis, a greater awareness of the importance of ESG topics in today's society.
6	The pursuit of sustainable objectives cannot be an absolute goal and must be reconciled with an effective financial risk composition in the construction of sound and rigorous asset allocation. The proper balancing of investments in the energy transition sectors has, so far, helped to reduce and mitigate the risk profile of the portfolio, as these sectors have traditionally been de-correlated. Thus, an initial asset allocation, focused entirely on the sectors related to the energy transition, has already been able to achieve both the goal of sustainability and the correct allocation and mitigation of risks. However, recent technological and regulatory developments affecting the three energy transition sectors have led to changes affecting the balance of risks, in particular through an increase in their degree of correlation. To rebalance the portfolio, the company has identified new sectors to invest in, choosing those that can encourage rebalancing towards greater diversification and decorrelation of risks, always within the scope of eligibility for ESG. These sectors may be social housing, education, and more in general social infrastructure.
7	The biggest problem when talking about non-financial data is that often a proper unit of measure does not exist at all or, if it does, it is not commonly shared or agreed by the operators' community. Moreover, there are often dimensions of analysis which tend to be more qualitative than quantitative or which are particularly difficult to relate to quantitative terms.
8	We certainly use: • Human resources, appointing at least one professional manager specialized in dealing with ESG issues. • Economic resources, allocating money to cover the costs linked to the evaluation processes needed to properly structure sustainable investments (e.g. costs related to the due diligence, monitoring, and external technical services).
9	At present, the material ESG-related risks are simply included, through the use of specific analytical tools, within the typical risk matrix for the evaluation of each investment. However, the organization is working on the construction of a new analytical framework dedicated exclusively to the extra-financial dimension of the investments and, once structured and validated, it will integrate this with the standard analytical framework commonly used for the development of every financial project.

10	In our opinion, the main analysis criteria for the ESG assessment are: • The study of the sector (some sectors are excluded by political choice). • The evaluation of the contribution that a project makes to the achievement of the SDGs. • The compliance with the *Organization and Management Model 231*[176]. • The taxation. • The compliance with mandatory hiring regulations if the company requesting the investment has more than 15 employees. • The involvement of the community within the project. • The assessment of intentionality, measurability, and governance in the case of impact investments.
11	An internal preliminary screening is carried out to have a preliminary understanding of ESG factors (e.g. allowed sectors, ESG criteria already considered, and over costs to upgrade investments related to ESG criteria). Within the external due diligence, a specific review is carried out, in some case by specific advisors.
12	The ESG assessment review is carried out internally every day, while formal ESG Committee meetings are scheduled at least every two times per year (usually at the start and at the end of the year).
13	Since all the three dimensions are closely related, it cannot be said that one is different from the other and, therefore, no dimension should be approached more carefully than the other two, even though the issues linked to the social sphere are probably the most difficult for companies to be assessed.
14	In our opinion, there is no need to sacrifice investment returns to meet good ESG performances. Several studies and reports from primary asset managers show how implementing ESG criteria in taking investment's decisions lead to returns typically in line or slightly higher than those achieved through non-sustainable investments.
15	In our opinion, a good ESG assessment should reduce the risk profile of a project, for instance by reducing environmental issues or claims by stakeholders (commercial counterpart or public opinion).
16	In my opinion, both strategies are important and, indeed, should go hand in hand. I believe, in fact, that the best approach should be to combine profit-seeking with environmental and social objectives, thereby generating both financial and non-financial returns.
17	Since all the ESG strategies are effective and each can be best suited to different clients' objectives, the best solution would be to make a mix of two or more strategies (e.g. by flanking an exclusion one with the client's engagement).
18	It has certainly changed the company's organization positively, accelerating both the ESG integration process and the sustainable policy development, thus to be in line with the PRI's requirements.
19	This is a problem that we are also experiencing in Italy. The correct application of international standards, especially in relation to certain principles (e.g. *IFC Performance Standards on Environmental and Social Sustainability*), can be very difficult to implement. Although it is extremely difficult to find a possible solution to this issue, it could be useful to develop new international standards that take account of the context in which we operate.
20	Since there are already many international standards, I would not create new ones, but simply enclose the existing ones.
21	Yes, they are a problem because they can lead to staggering analyses both in terms of ESG criteria's integration and sustainable performance assessment, thus contributing to the phenomenon of greenwashing.
22	I do not think that the SDGs will be achieved by 2030. We would need both a greater coalition at all levels and more stringent targets, although to do this we need to first tackle a complicated process of cultural change globally.
23	We are satisfied above all in terms of quality, but a little less so in terms of quantity, since for unlisted companies like ours there are very few solutions currently available on the market. Therefore, new instruments and more available data should be structured and collected also for this type of organization.

[176] The Organization and Management Model 231 (*Model ex D. Lgs. n. 231/2001*) indicates, under the Italian legislation, an organizational model adopted by a legal person, or by an association without legal personality, aimed at preventing the criminal liability of the entities. Retrieved from: Camera dei Deputati. (2001, June 8). *Disciplina della responsabilità amministrativa delle persone giuridiche, delle società e delle associazioni anche prive di personalità giuridica, a norma dell'articolo 11 della legge 29 Settembre 2000, n. 300*. https://www.camera.it/parlam/leggi/deleghe/01231dl.htm

24	Greenwashing practice is clearly a problem. One way it can be managed is to identify an international supervisory body, which could be the PRI themselves, to monitor the effective implementation of sustainable policies and actions.
25	One big challenge could be performing a good technology selection. Nowadays new technologies offer several solutions to the same problem, for example: • Energy storage could be implemented through chemical batteries (made of different components, such as lithium, vanadium, or zinc), water pumping, solar storage, power-to-biomethane, power-to-hydrogen and so on. • Emissions-free mobility could be achieved through electric vehicles or through hydrogen-powered vehicles. Available technologies are often very different from each other, with different stages and costs of development. Figuring out the most promising horse to bet is hard but could doubtless be one of the most important critical success factors.

Note. Personal elaboration based on the answers given by ARPINGE's Sustainability Officer during an interview.

From a first analysis of the answers provided by the ARPINGE's Sustainability Officer, it can be immediately noted that ESG factors have always played a key role for the organization both in the definition of its business policy (answer 1) and in the development of investment decision-making processes (answer 2). Through its sustainable policy geared towards the achievement of the SDGs (answer 3) and aimed at the development of investments leading to a positive return in financial, environmental, and social terms (answer 14), the company is constantly carrying out a process of revision for non-financial factors (answer 12) both internally and externally (answer 11).

According to the Sustainability Officer's experience, the correct allocation and mitigation of ESG risk is a key point to address sustainability issues (answer 6) and develop profitable investments by controlling efficiently even the concerns linked to non-financial dimensions, especially those deriving from the social sphere, which is indicated as the most difficult to be addressed by companies (answer 13). In order to analyse the materiality of these risks and thus assess their specific weight within each investment, the organization still adopts the traditional risk matrix method (answer 9), thus managing to assess their qualitative rather than quantitative aspect. The latter consideration is explained by the fact that, according to the manager's replies, the use of instruments that lead to an effective measurement of ESG risks in quantitative terms is one of the main problems currently afflicting the market (answer 7), especially for not listed companies (answer 23).

As regards the current international state of the art about the ESG considerations, it has been suggested that there is a need to:

- Structure a standardized analytical framework for ESG criteria, by allocating incentives based on the real contribution offered by the countries and implementing a control system including sanctions against those governments that adopt a free-rider behaviour (answer 4).
- Place more emphasis on academia to share, through scientific basis, a greater awareness of the importance of ESG topics in today's society (answer 5).
- Enclose the existing international standards (answer 20).
- Develop new international agreements with requirements that take account the context, thus helping even the small realities in addressing ESG issues (answer 19).

In conclusion, from this interview it can be noted that there is a slightly positive view of the development that has taken place in recent years with regard to the knowledge of ESG factors by the world of finance, although it is recognized that there is considerable room for improvement to be pursued through the implementation of new actions aimed both at facilitating the management of non-financial risks and at achieving the SDGs by time, an objective that seems difficult to be met nowadays.

- ***RINA***

As an entity representing the category of “Consulting Firm”, it was decided to select the case of RINA[177] (namely, Registro Italiano Navale). Founded in 1861, this is a multinational public limited company primarily engaged in the classification of ships and whose core mission is to assess, with technical competence, the safety of vessels and their reliability and riskiness for insurance companies. Currently recognized as one of the top-ranking marine classification societies worldwide, the organization expanded its range of operational sectors over time, thus actually providing services for sectors such as the transport and the infrastructure ones, trying to optimize both the value and potential of assets while controlling that everything is performed in line with the standards set (e.g. controlling costs, work quality, and time). RINA strongly supports the sustainable growth of the energy sector by helping suppliers of renewable and clean energy to meet the ever-higher market demand for the use of power services that are in line with the international standards for environmental protection. Always taking into consideration the interests and expectations of the stakeholders, the organization performs its role of consultant by focusing on the principles of correctness and transparency. The cornerstones of RINA’s policy are[178]:

- Respect for human rights.
- Compliance with organization, management, and control models.
- Impartiality and prevention for conflicts of interest.
- Financial integrity and anti-fraud fight.
- Fight against corruption and bribery.
- Safeguard of the intellectual property.
- Fair competition and application of antitrust rules.
- Ensure loyalty, sense of responsibility, and good faith in the conduct of each operation.
- Build a strong relationship with stakeholders.
- Promotion of co-operation.
- Ensure health and safety work conditions and safeguarding the environment.

[177] Rina. (2020). *RINA at a glance.* https://www.rina.org/en/about-us/at-a-glance
[178] RINA. (2017). *Compliance*. https://www.rina.org/en/about-us/compliance

It aims to contribute to the achievement of the SDGs. RINA joined, in May 2016, the *United Nations Global Compact*, consequentially adopting the *Ten Principles*.

The interview was conducted through a video-call with the Corporate Compliance and Sustainability Specialist from the company, who kindly answered all the questions in the survey by setting out both technical and subjective considerations, commenting on the current state of the art regarding the development of sustainable investing and the ESG factor analysis' methodologies. The following Table 4.4 shows the answers provided by the respondent (the subjective questions, being based on the direct experience of the subject interviewed, do not necessarily represent an absolute truth with regard to RINA's view on the topics covered and should therefore be understood purely as personal consideration of the respondent).

•Table 4.4.

ESG survey's answers: RINA

#	ANSWER
1	Our sustainability policy is based on four pillars: • *Governance*, that comprises organizational, financial, and compliance issues and represents the organization's commitment in integrating sustainability criteria into the business model. • *People*, which regards the human rights and labour conditions and means that the institution always meets health and safety working requirements. • *Innovation*, which represents the organization's commitment in developing innovative solutions to meet sustainability standards. • *Planet*, that regards the impact that the firm's initiatives produce on the external environment.
2	Since the ESG factors are strongly embedded in the company's policy, the proper management of risks related to extra-financial factors certainly leads to a value creation within the initiatives developed by the organization.
3	I believe that, although constantly updated and always in line with the principles and standards provided by the market, we are in a time of transition regarding the implementation of even more effective sustainable technologies. I believe that the development of our sustainable policy goes hand in hand with the current international situation, so there is much work to be done to develop an even more advanced model of sustainability.
4	Surely the world of finance, like the whole world at large, is beginning to understand the importance of issues such as plastic consumption, air pollution, or the battle against corruption, so it can be said that, compared to years ago, there have certainly been positive developments with regard to the concept of sustainability. However, there is a need to take further steps to make the impact that the world of finance can have on the community and the environment even more effective through a proper management of ESG factors.
5	As stated earlier, I believe that the awareness of the importance of ESG factors is now well established in the mindset of large companies, so I think we are at a good point in the education process for extra-financial issues.
6	We use a set of pre-established key performance indicators created for these topics.
7	Until a few years ago, the measurement of non-financial data was not considered as important as the measurement of financial data. The biggest problem in this sense is to create a unitary framework that balances and translates these two types of information in the same terms.
8	Both human resources (e.g. privacy manager, health and safety manager, corporate social manager, security manager) and economic resources.
9	We are still working on the construction of a special system to measure extra-financial risks. We currently use a materiality analysis of the most significant ESG factors for each stakeholder.
10	We mostly use the criteria related to our four pillars. For example, we check in every project whether human rights are respected, if environmental protection regulations are met, if positive returns both under a financial and socio-environmental perspective can be achieved in the long-term, or if the workplace is safe.

11	Again, we perform the due diligence process by using our four pillars to assess if a project is feasible.
12	Formally it is evaluated annually through the analysis of certain targets. We are currently working on the creation of a system that gives us the opportunity to constantly review the ESG evaluation.
13	Even if all of them are extremely important, the governance dimension is the most complex challenge facing us today. The anti-corruption dimension, the creation of an appropriate cybersecurity system, and the client privacy assurance are at the centre of our attention.
14	I do not think it is necessary to sacrifice an economic return to pursue good ESG performance.
15	Obviously, a good ESG assessment can reduce the overall risk of a project.
16	I think that the best way to create value and meet the development goals, as well as those of the clients, is the impact investing, a strategy that will probably be increasingly adopted in the future by the investors.
17	Although we have not declared that we are excluding certain markets or sectors, we are trying to avoid investments in those realities that are not in line with our ethics. Therefore, I would say that the exclusion strategy is one of the most effective practices.
18	The organization has not yet adopted the PRI.
19	Work should be carried out on two fronts: • Improve local control systems, thus creating appropriate compliance bodies to verify in every aspect whether there are the right conditions to perform work according to optimal standards. • Optimize the management of the chains, by giving orders at the right time and with fair compensation, by educating a concept of safe work even in least-developed countries. This could lead to economic development in all the countries worldwide.
20	In my opinion, more than creating new international standards, we should amalgamate the existing ones.
21	I do not think that the multiple rating services are the main problem right now.
22	Although I do not think we are well on the way to achieving the SDGs, I think it is essential to have pre-established targets that catalyse efforts towards a common direction. Sustainable actions should be implemented in an effort to strengthen the global partnership.
23	We do not use external tools to measure the ESG performance of our projects.
24	Certainly, it was a big problem many years ago, because they were only made proclamations without actually making a solid check. Now large companies, having to make public all the information about their projects and being subject to the external audit on both financial and non-financial management, are less likely to create false or misleading reports.
25	I believe that the next big challenge for sustainable finance is directly linked to innovation. Investors must be able to effectively support the most innovative sectors, thereby channelling investments into new markets and new sustainable technologies while maintaining a long-term vision.

Note. Personal elaboration based on the answers given by RINA's Corporate Compliance and Sustainability Specialist during an interview.

From a first analysis of the answers provided by the RINA's Corporate Compliance and Sustainability Specialist, it can be immediately noted that the organization's business model is influenced by a well-structured sustainability policy (answer 1). Through careful materiality analysis (answer 9) implemented through internal tools (answer 23), RINA tries to manage in the best possible way any risk linked to ESG factors in all its operations, so as to reduce the overall risk of each project (answer 15), thus creating value for the client (answer 2).

According to the Corporate Compliance and Sustainability Specialist's experience, for every project should be assessed if human rights are respected, if environmental protection regulations are met, if the workplace is

safe, or if positive returns both under a financial and socio-environmental perspective can be achieved in the long-term (answer 10), since that one does not necessarily exclude the other (answer 14). In order to control all these non-financial factors, the organization performs the due diligence process based on the four pillars of its sustainability policy (answer 11), monitoring the progress of projects through the verification of internal key performance indicators (answer 6) and formally reviewing it once per year (answer 12).
As regards the current international state of the art about the ESG considerations, it has been suggested that there is a need to:

- Amalgamate the existing international standards (answer 20).
- Improve local control systems and optimize the management of the chains, trying to encourage economic development in all the countries worldwide (answer 19).
- Start a process for the development of new sustainable technologies (answer 25).

In conclusion, from this interview it can be noted that there is a strongly positive view on the current state of the art regarding the knowledge of ESG factors, with consequent satisfaction for the development made internationally during recent years. Nevertheless, it is stressed that we are currently still in a period of transition towards the implementation of even more effective sustainable technologies, so it is recognized that there is still a lot of work to be done to achieve a truly optimal level of knowledge of extra-financial criteria.

Conclusion

This last chapter, through a qualitative analysis using the tool of semi-structured interviews, conducted with three sustainability specialists belonging to as many organizations, tried to show how all the topics dealt with in the previous chapters are concretely addressed by professionals in the field. Indeed, it was considered consistent with the objective of this Master Thesis to conclude the work by trying to make the reader understand what are the most common problems that arise in dealing with ESG factors, presenting the testimonies of those who measure themselves with non-financial factors on a daily basis.

A final analysis of the results of the research, comparing the responses provided by the sustainability experts of their respective organizations, reveals clear and precise evidence: we are living in a historical period in which every institution, regardless of the size of the company, its investment style, and the sector in which it operates, finds itself having to integrate in its business model some processes of assessment, management, and measurement of non-financial factors. Every organization, whether more developed or less, is now using part of its economic and human resources to carefully weigh up the ESG risks associated with each financial transaction and not, by exploiting the tools currently available on the market (still not quite sufficient in terms of quantity) or by creating appropriate in-house technologies. This renewed focus on non-quantitative factors, as well as being, of course, encouraged by the international agreements developed in recent years, is the result of a growth process of the global awareness of the role that the financial world can perform as regards the preservation of the planet and community. It is finally being realized that the problems we are facing today, without targeted intervention, will certainly increase their magnitude, thus leading to catastrophic consequences. There is, so, a growing need to implement sustainable investments that actually have a positive impact on the external environment, rather than simply taking care not to cause damage. While there is a clear intention for the international community to tackle the issues related to these dimensions (i.e. to stop the damage caused by serious issues such as climate change, social inequality, or corruption) in the most sustainable way possible, it is also quite clear that we are only at the beginning of this challenge. Many professionals agree, indeed, that it is necessary to establish an analytical framework as cohesive as possible, through which to provide organizations all around the world with predefined standards and instruments useful to effectively manage both the risks and the opportunities related to these issues and translate qualitative factors into quantitative data. It is considered, as suggested by the SDG 17, that the formation of a global partnership led by governments and multinational development organizations (e.g. the World Bank) is the basis from which to achieve positive results in the immediate future. Specifically, there is an absolute need to implement concrete actions at the international level aimed at:

- Starting a process of standardization of rating systems, thus ensuring greater transparency in disclosure and avoid the greenwashing practice or legal claims.
- Ensuring greater flexibility with regard to the requests issued by international agreements by taking into account the geographical context, so that even small realities from less-developed countries can effectively contribute to the fight against the biggest challenges of this century, such as those related to climate change and extreme weather events.
- Structuring an international standardized analytical framework for ESG criteria by amalgamating the existing standards.
- Placing more emphasis on academia to share, through scientific basis, an even greater awareness of the importance of ESG topics in today's society.
- Starting a process for the development of new sustainable technologies and technical tools, especially those useful for the impact measurement.

Probably, together with the development of many other remarkable sustainable initiatives, also through the satisfaction of these needs the Sustainable Development Goals will be able to be achieved by time, thus allowing humanity to improve living conditions worldwide.

In conclusion, even if it can be observed that great strides have been made over the last years, especially as regards vocational and non-vocational education in relation to environmental, social, and governance issues, it is clear that there is still a lot of work to be done and definitely no more time to lose. The world must act quickly for humanity's good and for the good of future generations, otherwise there might not be a future.

ANNEX I

The Millennium Development Goals

In 2000, the United Nations launched a development program which was composed of eight sustainable goals, called the *Millennium Development Goals* (MDGs), which were supposed to be achieved by 2015. These objectives, together with the correlated 21 targets and 60 specific indicators[179], represent the precursors of the SDGs, since that the latter were structured similarly with the aim of continuing the MDGs' course by trying to pursue the needed economic and social growth through responsible and impact financial activities. This program has produced a lot of successful outcomes, such as halving the percentage of both the global poor population and undernourished people in developing countries, almost doubling the primary school enrolment rate, making great progress in the fight against communicable diseases (e.g. HIV/AIDS, Malaria, Tuberculosis, and Ebola), and spreading an easier and affordable access to drinkable water[180]. Despite these great results, many goals whose importance was fundamental for the expansion of development growth were not achieved in time, so this is the reason why the SDGs were created immediately after the deadline of the MDGs' program. The development objectives, whose official icons are shown in Figure I, are the following (all information and data about the results achieved for each Goal are retrieved from the MDG Monitor website[181]):

•Figure I.

United Nations Millennium Development Goals

Note. Retrieved from https://www.wikigender.org/wiki/the-millennium-development-goals-mdgs/. Copyright (2015) by Wikigender.

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[179] Wikigender. (2015). *The millennium development goals*. https://www.wikigender.org/wiki/the-millennium-development-goals-mdgs/

[180] United Nations Development Programme. (2020). *Millennium Development Goals*. https://www.undp.org/content/undp/en/home/sdgoverview/mdg_goals.html

[181] MDG Monitor. (n.d.). *Category: Millennium Development Goals*. https://www.mdgmonitor.org/millennium-development-goals/

1. *Eradicate extreme poverty and hunger*.

The first goal has three targets, namely, halve the proportion of people who live with less than $1.25 per day, achieve an inclusive and fair employment climate, and halve the proportion of people who suffer hunger. This MDG was achieved and also exceeded, seeing that the number of people living in extreme poverty dropped by more than half, from 1.9 billion in 1990 to 836 million in 2015, as well the percentage of undernourished persons worldwide dropped from 23.3% in 1990 to 12.9% in 2015.

2. *Achieve universal primary education*.

The second goal has just one target set, which is ensuring that children worldwide enrol and complete a full primary education course. This target was not achieved on time, since that many children worldwide, nearly 57 million and whose majority were from rural areas, were not able to attend primary school due to lack of adequate infrastructure.

3. *Promote gender equality and empower women*.

Even the third goal has just one target, namely the elimination of gender inequality in all levels of education courses. This objective was achieved, since that gender inequality has been eliminated from primary, secondary, and tertiary schools, but there is a lot of work to be done because statistics state that women remain more vulnerable than men to matters such as poverty and diseases.

4. *Reduce child mortality*.

The fourth goal's only target aims at the reduction of the under-five mortality rate by two-thirds. This goal was not achieved because the mortality rate of under-five children has been reduced nearly 50% globally, from 90 deaths per 1,000 live birth in 1990 to 43 in 2015.

5. *Improve maternal health*.

The fifth goal has two targets set, that refer to the reduction of maternal mortality ratio by 75% and the achievement of global access to reproductive health. Even this target was not achieved, despite the maternal mortality rate declined by about 45% worldwide from 1990 to 2015.

6. *Combat HIV/AIDS, Malaria, and other diseases*.

The sixth goal has three different targets, which are halting and reducing the spread of HIV/AIDS, offering an easier international access to treatments against this disease, and eliminating communicable mortal diseases such as malaria. The HIV infections were reduced by 40% and nearly 13.6 million persons received the anti-retroviral treatments needed. Over the years, diseases such as Tuberculosis and Malaria experienced an incredible reduction in their mortality ratio, thanks to the fundamental projects aimed at a wider distribution of the necessary medicines in less-develop countries.

7. *Ensure environmental sustainability*.

The seventh MDG has four targets, that are: to integrate the principles for sustainable development into the initiatives and policies of every country, by reducing the overconsumption of natural resources; to reduce biodiversity loss; to halve the percentage of the population who lack access to clean drinkable water and basic sanitation systems; and to achieve an improvement in the living conditions of at least 100 million slum dwellers. The environmental issues are even today important threats, but thanks to the commitment of many financial organizations, a wide range of sustainable initiatives have been developed, as shown in this dissertation. 147 nations have achieved the drinking water target, 95 nations the sanitation one, and 77 have achieved both.

8. *Develop a global partnership for development*.

The last goal has six targets, which are intended to further an inclusive and transparent international economic system, address the needs of least-developed countries, face those of small island developing nations, deal in the best way with the financial needs of these realities, provide access to medicines for communities living in less-developed states, and globally share the benefits that new technologies can bring. Under this goal many positive results have been achieved, seeing that money commitments of the industrialized nations reached $135.2 billion for development interventions within the poorest countries during the period between 2000 and 2014. Even a great increment in the communication systems has been observed, since that over 7 billion people owned a mobile-phone in 2015 and the Internet penetration increased to 43% in that year.

ANNEX II

Brief Overview and Historical Background of the World Bank Group

The World Bank Group (WBG) is the most important multilateral financial organization in terms of political influence and financing volume[182] provided to its member States[183]. Headquartered in Washington, D.C., it is not a bank in the ordinary sense but a unique global partnership that offers financial and technical assistance to developing countries worldwide in order to reduce financial vulnerabilities, contrast extreme poverty, and contribute to a shared macroeconomic stability. The most important strength of this group is that, through its agencies, it links public and private sectors with the purpose of better connect financial resources and sustainable solutions to help less-developed countries run an economic growth. By doing so, it improves the global economy.

The WBG is composed by five international institutions: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for Settlement of Investment Disputes (ICSID). Every agency is independent by the other in terms of affiliated governments, board of directors, governance, articles of agreement, and institutional policies, but all work as one to achieve the common goals set by the WBG. Each organization plays a different role and uses different instruments and strategies.

IBRD, actually owned by 189 member states, provides loans, guarantees, and advisory services to developing countries with middle or low-income and high credibility. It is the most representative organization of the WBG, since that it is the older and even the one with more associates. It prevalently helps middle-income countries[184] in their social and economic growth due to their strategical potential in finding sustainable solutions to the global challenges and also because these nations represent more than 60% of world’s poor people, so it is hard for them to raise financing on a stand-alone basis.

IDA, actually owned by 173 member states, provides financial support to the poorest developing nations through loans issued at heavily subsidized conditions, so through long-term credits with zero or low interest rates and long grace periods. It helps countries which fail to meet criteria for accessing to IBRD’s financing programs due to their extreme poverty, by investing in projects that enhance primary education, basic health, sanitation, and water supply. Its main objectives are the reduction of inequalities and the improvement of people’s living conditions, especially in rural communities. It constitutes, together with IBRD, the World Bank (WB), which is the core organization of the WBG for the public financing.

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[182] In 2019 loan disbursements were about $49.40 billion. Retrieved from: World Bank Group. (2019). *Annual Report 2019*. https://www.worldbank.org/en/about/annual-report/fiscal-year-data

[183] As of March 2020, the WBG has 189 member countries. Retrieved from: World Bank Group. (2019, February 16). *Member countries*. https://www.worldbank.org/en/about/leadership/members

[184] Middle-income countries are economies with a Gross National Income per capita between $1,006 and $12,235. Retrieved from: World Bank. (2019, November 5). *The World Bank in middle income countries: Overview*. https://www.worldbank.org/en/country/mic/overview

IFC, actually owned by 185 member states, provides loans, equity investments, guarantees, financial derivatives, syndication programs, advisory services, and technical assistance to the private sector of developing states. It is the unique agency of the WBG that does not require the guarantee of the host government to launch an investment for a project in a specific country. It invests mainly in private initiatives in order to create new markets easily accessible by less-developed nations, creating new opportunities for their people to improve their lifestyle standards and enhance their economies.

MIGA, actually owned by 181 member states, provides guarantees and insurances to foreign investors, covering political risks such as currency convertibility, expropriations, and damages caused by the arbitration of host governments. It protects and helps private and public institutions which want to invest in projects proposed in developing countries, with the objective of encouraging international transactions and expand emerging markets even in the poorest areas. MIGA also provides advisory services to both host governments and foreign lenders, trying to create synergies between least-developed nations and industrial ones.

ICSID, actually owned by 163 member states, provides legal assistance to both investors and host governments regarding disputes that could arise during international transactions. It is the legal arm of the WBG and it contributes to promote cross-border investments by offering impartial resolutions in dispute processes at a global level. Its instruments to settle causes are conciliations, arbitrations, and fact-finding, whose main futures are designed in the *ICSID Convention* and in the *ICSID Additional Facility Rules.*

The WBG was theoretically established in 1944 during the United Nations Monetary and Financial Conference (a.k.a. the Bretton Woods Conference) held at the Mount Washington Hotel in New Hampshire, where 730 delegates from 44 nations were called to decide about two important topics: the creation of an international economic system to avoid a post-war depression[185] and the creation of an international organization to refurbish the European countries devastated by the damages caused by the World War II. In response of the second need, 38 member states formed IBRD, which can be considered the first pillar of the WBG. It was initially financed by private capital markets and sustained by the pledges of its associates. The bank officially started its works on 27th December 1945 with the effective signature of its articles of agreement in Washington, D.C., and its first operation was a loan issuance of $250 million to France, approved on 9th May 1947. On 20th July 1956, in order to promote investments by the private sector, IFC was founded by 31 subscriber states. On 24th September 1960, IDA was created to provide sources of financing for the poorest and less creditworthy countries. It had 15 members at that time. On 14th October 1966, with the aim of providing conciliation and arbitration services to foreign investors and whose countries, ICSID was founded through the signature of 20 governments. By an agreement subscribed by 29 members for the establishment of MIGA on 12th April 1988, the WBG as known today became a reality[186].

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[185] The International Monetary Fund was created for this purpose. Nowadays its goals are the reduction of poverty, the facilitation of international trades, and the promotions of global monetary cooperation, high employment, and sustainable economic growth. Retrieved from: International Monetary Fund. (2020). *About the IMF*. https://www.imf.org/en/About

[186] World Bank Group. (n.d.). *World Bank Group archivists' chronology 1944-2013*. http://pubdocs.worldbank.org/en/186241442500110286/PDF-World-Bank-Group-Archivists-Chronology-1944-2013.pdf

The WBG has evolved many times during its history, changing missions and strategies in order to address the evolving needs of its members.

This organization had the original purpose of rebuild Europe and renovate the ancient prosperity of the continent, but soon it shifted its attention to the financing of infrastructure' constructions all around the world and, with the help of its engineers and technicians, many nations were able to build roads, electrical grids, dams, and irrigation systems. During this period, the majority of its resources was spent on: development projects concerning energy, telecommunication, power, and transportation; technical assistance for its clients and partners to help them better manage its financing; and training programs, for whose purpose the Economic Development Institute was created in 1955. It also enforced its reputation as a mediator in international economic disputes, taking an active and impartial role in the resolution of conflicts between governments.

By the 1970s, the WBG switched its focus from the reconstruction and development of countries to the reduction of extreme poverty, supporting education, sanitation, food production, and employment especially in developing nations, through the launching of programs that were first-of-their-kind and that contributed to remarkable economic growths.

The WBG has entered this new century taking care about: environmental issues, introducing new loans' requirements linked to the safeguard of the planet in line with those designed by the *Global Environment Facility*, that is a fund created in 1992 to help the group in this field; social challenges, introducing norms aimed at the protection of vulnerable groups and minorities; and the elimination of governments' corruption, which for the first time was seen not only as a political problem, but as a development problem too[187].

It actually has two main goals settled, which should be achieved by 2030: the first one is to end extreme poverty by decreasing the percentage of people living with less than \$1.90 per day (this threshold has been changed in 2015 from the precedent one of \$1.25 per day, a modification that shows how the poverty rate is declining) under the 3%, while the second one is to promote a shared prosperity between each country by increasing the income growth of the bottom 40% (i.e. an indicator of the economic growth of poor people)[188].

As stated by van Trotsenburg (2012), the actual World Bank Managing Director of Operations, "*from the ashes of a world wracked by the horrors of a war like none before, a new paradigm for peace was born*"[189].

[187] World Bank Group. (2020). *World Bank Group history: Exploring the archives.* *https://www.worldbank.org/en/about/archives/history/exploring-the-archives*

[188] World Bank Group. (2013). *The World Bank Group goals: End extreme poverty and promote shared prosperity* [Brochure]. https://www.worldbank.org/content/dam/Worldbank/document/WB-goals2013.pdf

[189] van Trotsenburg, A. (2012, July 12). *Bretton Woods: 75 Years of solidarity with Latin America and the Caribbean*. World Bank Group. https://www.worldbank.org/en/news/opinion/2019/07/15/bretton-woods-75

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