



LAURA BRAVI

CORPORATE ENVIRONMENTAL AND SOCIAL MANAGEMENT





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CONTENTS

7	Chapter I Corporate Environmental Management
	1.1 The evolution of the sustainable development concept, 7 – 1.1.1 <i>The 2030 Agenda and the Sustainable Development Goals (SDGs)</i> , 10 – 1.2 Green Economy as an economic sustainable development model, 13 – 1.2.1 <i>Green Economy in Italy</i> , 18 – 1.3 Blue economy, 21 – 1.4 Environmental standards as business management tools, 25 – 1.4.1 <i>Product environmental certifications</i> , 30 – 1.4.2 <i>Environmental management system standards</i> , 38 – 1.5 Corporate environmental risk management, 76 – 1.5.1 <i>The information asymmetry explained by akerlof's theory</i> , 79.
81	Chapter II Corporate Social Responsibility Management
	2.1 The evolution of the concept of Corporate Social Responsibility, 81 – 2.1.1 <i>CSR up to the fifties</i> , 81 – 2.1.2 <i>The sixties</i> , 86 – 2.1.3 <i>The seventies</i> , 88 – 2.1.4 <i>The eighties</i> , 95 – 2.1.5 <i>From the nineties to today</i> , 98 – 2.2 Advantages and disadvantages of a CSR strategy, 104 – 2.3 Measuring and monitoring CSR, 106 – 2.3.1 <i>Cost–benefit analysis oriented to corporate social responsibility</i> , 106 – 2.3.2 <i>Sustainability Balanced Scorecard (SBSC)</i> , 113 – 2.3.3 <i>Ethical rating as a measurement form</i> , 116 – 2.4. CSR communication tools, 122 – 2.4.2 <i>The environmental report</i> , 128 – 2.4.3 <i>The sustainability report and the Global Reporting Initiative (GRI) standard</i> , 129 – 2.4.4 <i>The ethical code</i> , 130 – 2.5 The main rules for the management of CSR, 131 – 2.5.1

6 Contents

The Accountability 1000 standard, 131 – 2.5.2 ISO 26000 guidelines, 132 – 2.5.3 ISO 45001 standard, 135 – 2.5.4 SA 8000 standard, 138.

149 *Conclusions*

153 *References*

CHAPTER I

CORPORATE ENVIRONMENTAL MANAGEMENT

1.1 The evolution of the sustainable development concept

Starting in the 1970s, people began to become aware of the fact that economic and social development, linked exclusively to economic growth, would sooner or later cause the collapse of natural systems; just think of the oil shocks of the early 1970s or the emergence of environmental problems of global interest, such as the greenhouse effect and the ozone hole. In this context, the traditional development model entered into crisis and the relevance of a sustainable development model emerged. This derived from an ever greater human awareness of the exhaustion of the planet's resources and the consequent need to preserve the natural heritage, promoting more balanced development models than those adopted in the past.

The concept of sustainable development was first introduced during the 1972 UN Environment Conference in Stockholm, the first to address environmental issues on a global scale. However, it was in 1987, with the publication of the Our Common Future report, that a clear definition of this concept was reached; by sustainable development we mean a “development capable of ensuring the satisfaction of the needs of the present generation without compromising the possibility of future generations to realize their own”. In this sense, the responsibility between generations to safeguard the planet's resources and environmental balance is highlighted, thus creating the prerequisite for maintaining long-term well-being.

Another important step in the field of sustainability was the 1992 “United Nations Conference on Environment and Development” in Rio de Janeiro, which marked the definitive awareness, on a global scale, of the need to manage environmental issues; this in fact paved the way for a series of subsequent

initiatives, agreements and studies in which sustainable development is at the center of the debate. The Rio Conference, also known as the “Earth Summit”, was the first world conference of heads of state on environmental matters; 172 Governments and 108 Heads of State participated, as well as numerous representatives of non-governmental organizations (NGOs). The main results of the summit were:

- the *Rio de Janeiro Declaration on Environment and Development*, which defines the rights and responsibilities of nations in relation to sustainable development in 27 principles;
- the *Declaration of Principles for Sustainable Forest Management*, which recognizes the right of States to use forests but without infringing the principles of conservation and development of the same;
- the *Framework Convention on Climate Change*, which imposes general obligations with the aim of containing and stabilizing the production of gases that contribute to the greenhouse effect;
- the *Framework Convention on Biodiversity*, with the aim of protecting species in their natural habitats and rehabilitating those in danger of extinction;
- *Agenda 21*, which constitutes a global action plan for the pursuit of sustainable development, divided into four sections and forty objectives.

The multidimensional character of sustainable development also emerges from the Rio de Janeiro Conference, considered as the result of the interaction between three dimensions: the environmental dimension, the economic dimension and the social dimension. This type of approach is known as the Triple Bottom Line, a term coined in 1994 by John Elkington, according to which development can be defined as sustainable only if it is capable of generating economic sustainability, environmental quality and social equity, the so-called 3P (People, Planet and Profit) (Figure 1.1). In fact, these three pillars are not mutually exclusive but are strictly interconnected.

The environmental dimension, first at the center of the international debate on sustainability, should be understood as the ability to preserve and ensure the integrity and diversity of ecosystems, while maintaining the reproducibility of natural resources over time. Economic sustainability, on the other hand, concerns the ability to generate income and work by effectively combining resources. Finally, social equity is understood as the abili-

ty to ensure equity in access to conditions of well-being (safety, health, education).



Figure 1.1. The three dimensions of sustainable development.

The interaction between the three dimensions gives rise to the premise for considering a fourth dimension of sustainability, the institutional one. In fact, the transition to sustainability cannot be separated from the action of governments, companies or universities. Institutional sustainability can therefore be considered as the ability to ensure conditions of democracy, stability, training, information and justice.

After Rio, other conferences on sustainable development followed, including:

- *Aalborg (1994)*, the first European conference on sustainable cities, during which European cities undertook to promote the objectives of Agenda 21 and to adopt action plans aimed at sustainability, through the signing of the *Aalborg Charter*;
- *Kyoto (1997)*, which gave birth to the Kyoto Protocol, an international agreement aimed at regulating the emissions into the atmosphere of the main gases responsible for the greenhouse effect. This Protocol provided for the signing of no less than 55 nations that produced at least 55% of emissions, which is why it entered into force only in February

2005, thanks to ratification by Russia (www.reteclima.it). 176 countries adhered to the Protocol, which contributed over 63% to global emissions of polluting gases.

- *Johannesburg (2002)*, which puts at the center of the debate the state of implementation of the commitments undertaken in Rio de Janeiro ten years earlier in terms of environmental improvement and sustainable development, which proved to be disappointing and thus led the participants to formally reaffirm their commitment through the signing of an “Implementation Plan”;
- *Rio de Janeiro (2012)*, twenty years after the Rio Conference of 1992, during which the political commitment of the countries in pursuing sustainable development was renewed and the state of implementation of the international commitments undertaken in the last two decades was reviewed. The Conference focused on two main themes: the transition towards a “Green Economy”, aimed not only at environmental improvement but also at the pursuit of social and economic well-being; and the development of an “institutional framework for sustainable development”, with reference to the global governance system for sustainable development. The summit ended, after two years of negotiations, with a programmatic document entitled *The Future We Want* which initiates numerous international and national processes on issues considered crucial for the future of the planet, including the process of definition of new “Global Goals for Sustainable Development” and the creation of a “High Level Political Forum” in charge of monitoring the implementation of global sustainable development commitments.

1.1.1 The 2030 Agenda and the Sustainable Development Goals (SDGs)

The stages that have seen the evolution of the concept of sustainable development have been many over the years, driven by the need to limit the impact of man on the environment as much as possible; one of the last global agreements on the subject was the signing by the governments of 193 UN member countries of the 2030 Agenda. The latter was approved in September 2015 by the United Nations for Sustainable Development and poses new challenges to the global governance through the setting of 17 Sustainable Development Goals (SDGs) to be achieved by 2030. They are the following.

1. Put an end to all forms of poverty in the world.
2. End hunger, achieve food security, improve nutrition and promote sustainable agriculture.
3. Ensuring health and well-being for all and for all ages.
4. Provide quality, equitable and inclusive education, and learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure the availability and sustainable management of water and sanitation facilities for all.
7. Ensure access to affordable, reliable, sustainable and modern energy systems for all.
8. Encourage lasting, inclusive and sustainable economic growth, full and productive employment and decent work for all.
9. Building a resilient infrastructure and promoting innovation and fair, responsible and sustainable industrialization.
10. Reduce inequality within and between nations.
11. Making cities and human settlements inclusive, safe, long-lasting and sustainable.
12. Guarantee sustainable models of production and consumption.
13. Promote actions, at all levels, to combat climate change.
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of the ecosystem.
16. Promote peaceful and inclusive societies for sustainable development.
17. Strengthen the means of implementation and renew the global partnership for sustainable development.

The change process of each country in pursuing the 17 Goals is monitored through a system based on 169 Targets and over 240 indicators directly by the United Nations. Monitoring takes place annually at the UN Economic and Social Committee, during the High Level Political Forum; the last one, for 2018, highlighted that despite some important progress in the first years of implementation of the Agenda, the road to go is still long. Compared to ten years ago, in fact, more and more people are leading better lifestyles, but phenomena such as climate change, inequalities, conflicts, chronic poverty, rapid urbanization and food insecurity, are considerably hindering the commitment of many countries to walk the road of sustainability. Even the latest ASVIS report on the achievement of the Sustainable Development Goals re-

affirms that although most of the G20 countries have started the implementation of these Goals, significant gaps remain due to the way in which the latter are translated into institutional mechanisms by political leadership. This contradiction is reflected in real and available data: in 2017 nature was used 1.7 times faster than ecosystems can regenerate, that is to say having consumed 1.7 planets.

With the report *Sustainable Development in European Union: Overview of progress towards the SDGs in an EU context*, Eurostat analyzed the situation of Europe with respect to the achievement of each single Goal. In fact, Europe appears to be the most advanced area in the world with respect to the achievement of these Goals. In particular, it notes that the greatest progress in recent years has taken place with respect to Goals: 3 (health and well-being), 7 (clean and accessible energy), 11 (sustainable cities and communities), 12 (consumption and production responsible), 15 (life on earth). On the other hand, according to ASVIS, which based on Eurostat data assessed progress and setbacks in the performance of the Union, Europe is significantly withdrawing from two Goals: number 10, relating to inequality within and among nations, due to the existence of substantial inequalities among them (ASVIS calculates an index of 118.4 for Finland against 74.7 for Bulgaria); and Goal 15, relating to the protection and restoration of sustainable use of the terrestrial ecosystem, due to an increase in all Member States of the percentage of land covered by man-made works (ranking led by Slovenia and closed by Belgium). Beyond the situations of improvement and worsening of the aforementioned Goals, for all the others the situation remains almost static. In general, as far as the European Union is concerned, the desired change towards the full implementation of the 2030 Agenda has not yet been registered, indeed many problems have remained unresolved and have contributed to emphasizing conflicting positions that divert attention from the achievement of the Sustainable Development Goals (EUROSTAT, 2017a; EUROSTAT 2017b).

As regards Italy, in December 2017 the Interministerial Committee for Economic Planning (CIPE) approved the National Strategy for Sustainable Development with the aim of declining the principles and objectives of the 2030 Agenda at a national level. This Strategy is divided into five areas (People, Planet, Prosperity, Peace, Partnership) each consisting of a series of national strategic objectives specific to the Italian reality and complementary to the 169 Targets set by the Agenda. Despite the interesting and exhaustive articulation of the Strategy, however, the ASVIS 2018 Report stresses that it has

not yet played any role in guiding national policies and influencing legislative measures and concrete interventions.

The SDG Index and Dashboards Report for 2018 of the Bertelsmann Foundation and Sustainable Development Solutions Network (SDSN), the global study of greater depth in terms of distance of nations from the Sustainable Development Goals, affirms that no country is on the good way to achieve all the Agenda goals by 2030.

1.2 Green Economy as an economic sustainable development model

The affirmation of the concept of Sustainable Development has contributed to profoundly changing not only man's perception of the ecosystem, but the entire world economic system.

The economic model used up to that point was the linear economic model, according to which the production system is made up of a sequence of phases, starting from the extraction phase of the raw materials, and then continuing with that of processing and production, finally ending with the disposal of waste materials (Tamino, 2016) (Figure 1.2).

This model, thanks to the new vision based on the concept of Sustainable Development, has been joined by the circular economic model, based on the reuse of the materials used.

According to the European Commission, in fact, the circular economy is a particular strategy of economic development, which intervenes profoundly in what are the industrial production techniques and the methods of consumption of products, since it is a type of economy in which the scents obtained from a specific production process are reused in order to constitute an input for a further process (CE, 2014).

In other words, circular economy is a type of industrial economy in which the activities, carried out in the production process, are reorganized in such a way as to allow the waste obtained by someone to become a necessary resource for someone else, through the recycling of materials used (www.lpost.it).

This development strategy is based on continuous technological, social and organizational innovation (Romagnoli, 2016).

The affirmation of this new economic model has constituted the passage from a linear economy to a purely circular approach, which has contributed to constitute a further step forward in the creation of a new relationship between companies and environment.

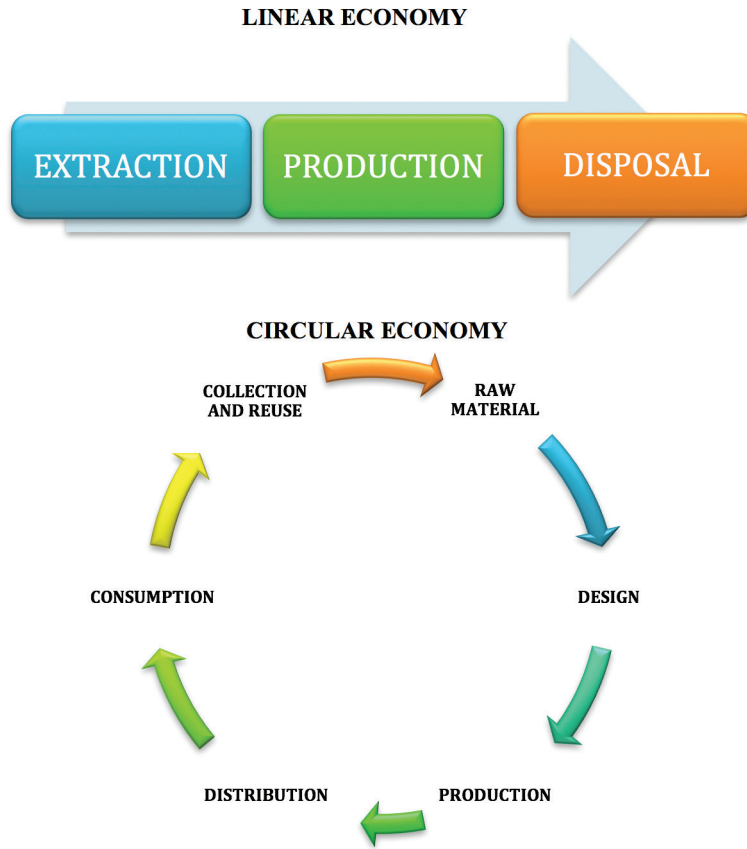


Figure 1.2. Linear and circular economy.

In this case, the advent of the new millennium and the changes that have affected the world economic system in the last decade have constituted a fertile ground for the creation of a new paradigm in the world economic and production scenario, able to combine on the one hand the economic needs of the moment, with the needs relating to a purely sustainable development: the Green Economy.

There are several definitions used to indicate this development model. The European Commission, for example, defines the Green Economy (GE) as: «an economy that generates growth, creates jobs and eradicates poverty by investing and safeguarding the natural capital resources on which the survival of our planet depends» (CE, 2011).

The Organization for Economic Cooperation and Development (OECD), on the other hand, identifies in the concept of Green Economy a growth that

aims at reducing pollution, through the control and reduction of greenhouse gases and waste, trying to preserve the most possible natural heritage and its resources (www.lamiaterravale.it). And again, UNEP defines it as: «an economy that produces human well-being and social equity, while reducing environmental risks and ecological scarcity. In its simplest expression, a green economy can be thought of as an economy with low carbon dioxide emissions, efficient in the use of resources and socially inclusive».

It is therefore a type of economy, oriented towards human well-being and social equity, with respect for and protection of the environmental heritage.

In general, that of the Green Economy, is a model that criticizes the traditional economic vision, which does not take into account the negative impact it has on the environment, especially for what concerns the closely connected sectors with a direct impact on the ecosystem. such as fishing, livestock, agriculture etc.

The concept of Green Economy, also called green economy or ecological economy, was officially born in 2006 on the occasion of the drafting of the Stern Report, which deals with an economic analysis about the effects of the environmental and economic impact due to climate changes on world GDP. According to the Stern Report, the damage caused by greenhouse gas emissions negatively affected GDP by 20%, generating a loss equal to that which occurred following the two great wars together (www.ilsole24ore.com).

It was born therefore, with the intention of combining three main objectives such as: the protection of social well-being, the maintenance of biodiversity present on the planet and the protection of the environment. Subsequently, the concept of GE acquired international relevance, following the publication of the *United Nations Environment Program (UNEP)* Report published in 2011, entitled *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, which demonstrates how implementation of a Green Economy does not represent a brake, but a new growth engine and, for this reason, the Report seeks to motivate policy makers around the world to create favorable conditions for a green transition of the economy through suggestions and examples.

Green Economy constitutes therefore a theoretical model of economic development, in which the benefits of a certain economic-productive regime are evaluated, whose environmental impact must be contained within pre-established limits in respect of the environment, by maintaining and the recovery of natural capital, the total or partial replacement of traditional energy sources, such as fossil energy, with alternative and renewable energy sources

such as solar, wind power etc., but above all it is an economy oriented to the implementation of sustainable consumption models (Milani, 2000).

According to these models, it is necessary for companies to invest in the four fundamental elements for the implementation of this type of approach (www.ecoage.com):

- *renewable energy*: renewable energy sources are generated by natural resources which, thanks to their ability to regenerate over time, can be considered inexhaustible. These types of resources include solar energy, wind power, water etc.;
- *energy efficiency*: it is necessary for companies to resort to particular types of technologies and techniques, capable of increasing the energy efficiency of the tools used in business processes, in order to reduce waste in economic terms and to guarantee an increase in production efficiency;
- *waste cycle*: to implement a green consumption model it is necessary for companies to study strategies aimed at reducing waste materials. Following certain production cycles, companies, by proceeding with differentiated collection cycles of materials, can partially guarantee the reuse of waste materials, so as to be able to generate, with them, new production cycles, which guarantee no minimal impact on the environment;
- *environment*: last but not least, indeed the cornerstone of the concept of the Green Economy, is the environment. In fact, businesses must preserve the business–environment relationship as much as possible, which should not be considered as a resource that can be exploited in an unlimited way, but on the contrary managed with care and attention. The environment must be “exploited” respecting biodiversity, reducing polluting actions considered harmful to the environment, but also to human health.

The concept of GE does not replace that of sustainable development, but recognizes that the achievement of the latter is based almost entirely on optimizing the economy. The aforementioned UNEP report specifies how the transition to a Green Economy requires specific conditions in order to take place: both at the national level, through changes in fiscal policy, reduction of subsidies harmful to the environment, implementation of new market-based tools, directing public investments towards green sectors, improving environ-

mental standards and regulations; and at an international level, by improving the market infrastructure and trade flows and by helping and promoting greater cooperation between countries. For this transition to take place it is essential to dispel two myths: the first, that there is an inevitable trade-off between sustainable development and economic progress; the second, that GE is a luxury that only rich countries can afford. UNEP identifies the main results that the Green Economy is able to generate; therefore, a Green Economy:

- recognizes value and invests in natural capital;
- is essential to alleviate poverty;
- creates jobs and improves social equity;
- makes it possible to replace fossil fuels with renewable energy and low-carbon technologies;
- promotes the increase of resources and energy efficiency;
- offers more sustainable urban life and low carbon mobility;
- it grows faster over time than a brown economy while maintaining the restoration of natural capital.

A further distinctive element of the Green Economy is the establishment of a new business–environment binomial, which for the first time sees the term sustainability alongside the term production, especially of an industrial type. This new coupling has allowed the overcoming of the concept according to which industrial production cannot be considered sustainable, thus making the industry sustainable and the concept of “industrial” sustainability (Rullani, 2010).

Already in 1992 Robert Frosch⁽¹⁾ introduces the concept of the relationship between natural and industrial ecosystems, treating the theme of industrial ecology as a system imputed in the reuse of waste materials. It is precisely from here that the concept of industrial symbiosis begins to assert itself in the world economic system. It is an integrated approach in which traditionally separate industries are involved, which, through joint work and the exchange of resources and skills, benefit from each other (Cutaia and Morabito, 2012).

Industrial symbiosis networks can be created following two types of approaches: the first is of the bottom-up type, so the relationship arises independently of a specific agreement, this is the case of industrial symbiosis dis-

(1) Robert Alan Frosch Freng, American scientist born in 1928, he was the fifth administrator of NASA in the years 1977–1981.

tricts. The second approach is top–down, so the relationship is planned and managed on the basis of the principles of ecology, as in the case of eco–industrial parks.

Ecologically equipped areas or eco–industrial parks in Italy are governed by Legislative Decree 112/1998, which in Article 26 are defined as: «industrial areas equipped with the infrastructure and systems necessary to guarantee the protection of health, safety and the environment».

In this new perspective, environmental problems do not constitute a brake on industrial development, on the contrary they represent an opportunity for the expansion of company businesses, offering the possibility of identifying new realities hitherto unexplored by competitors (Rullani, 2010).

1.2.1 Green Economy in Italy

The Green Economy strategic development model has affected, as previously stated, the global economy. This model has favored the emergence of an economy that is no longer oriented only to cost efficiency, but above all to the achievement of good quality standards. This has placed the environment and its protection at the center of corporate strategies; In fact, in order to compete, companies aim to consolidate elements such as Sustainability and Quality, through the implementation of targeted marketing strategies.

The GreenItaly report (2018) highlighted that in Italy there is a good propensity of companies to eco–invest, in fact, there are over 345,000 Italian companies that have invested in the 2014–2017 period, or plan to do so by the end of 2018 in green products and technologies.

The report clarifies how the reasons behind these choices are to be found in the fact that:

- green companies have shown dynamism on foreign markets that is clearly superior to the rest of the Italian production system; for example, in the manufacturing sector, 34% of companies that invested in green reported an increase in exports in 2017, compared to 27% of companies that did not invest. These companies also innovate more than the others (79% against 43% of non–investors).
- export and innovation benefit the turnover of green companies, in fact, always with reference to manufacturing, 32% of green companies saw an increase in turnover in 2017 against 24% of non–investing ones.
- green companies declare a greater employment increase (28% against

21% in 2017). An ISTAT survey on the labor force in 2017 recorded a quantity of employees corresponding to green jobs in Italy equal to 3 million units (approximately 13% of the total national employment), demonstrating the fact that choosing path of the green economy also benefits employment.

Observing the incidence of eco-investments in the various sectors of activity (industrial, manufacturing, public utilities, construction and services) in the period 2014–2017 and/or which would have invested in 2018 in products and technologies with greater energy saving and/or lower environmental impact on the total of companies, what emerges is that the sector in which the incidence of eco-investments is greater than the total of companies in the same sector is that of public utilities, followed by the manufacturing industry, services and constructions. Of the total number of Italian companies, 24.9% invested in green between 2014 and 2017 and/or intended to do so in 2018.

What has been said about the green trend of Italian companies has not only had positive repercussions on the performance of companies but has also pushed the entire Italian production system towards European leadership in environmental performance. In fact, Italy is positioning itself:

- third behind the United Kingdom and Luxembourg in the consumption of raw materials per million euro produced (307 tons);
- second in energy consumption (oil) behind the United Kingdom, rising from 17.3 tons in 2008 to 14.2;
- among the five major European economies in waste reduction, with 1.7 tons less than in 2008 and the country with the highest percentage of recycling out of total waste;
- third in the reduction of atmospheric emissions, behind France and the United Kingdom.

In addition to this, Italy also boasts records in the bio-economy and green chemistry, in renewable energy, in agriculture with respect to the use of irregular chemical residues, in the export of organic products and in sustainable mobility.

This high degree of environmental sustainability of Italy is also influenced by the fact that the Italian business fabric is mainly characterized by light industry, therefore less polluting, compared to the rest of the EU economy; moreover, Italian companies are located above all in the final stages of the val-

ue chain, an aspect which translates into a high intangible value of the products and therefore a lower environmental impact. It can be said that «Italian performance is favored by the very essence of Made in Italy, capable of creating economic value starting from intangible assets: design, quality of materials used, innovation, tailoring of production, image of products» (GreenItaly 2018, p. 57).

Green oriented trends are also more frequent as the size of the company increases, explained on the one hand by issues relating to the presence of economies of scale and on the other, by the fact that the larger size is often linked to higher environmental impact sectors (Figure 1.4).

As regards the geography of green businesses in Italy in the 2014–2017 period, most of these are concentrated, in absolute terms, in Lombardy, Veneto, Lazio, Emilia–Romagna and Campania. At the provincial level, the ranking is led by Rome and Milan, which together account for a percentage of eco-investing companies of about 14% of the country's total, followed by Turin, Naples and Bari.

The GreenItaly Report for 2018 specifies how

these results do not alone represent the solution to the country's ancient evils: public debt, social inequalities, the black economy and the criminal economy, the delay of the South, an ineffective and often suffocating bureaucracy. However, they are the portrait of a competitive and innovative Italy [...], new in many ways, on which to leverage to fight even those evils.

The Green Economy can therefore be seen as a “recipe” which, through the improvement of the country's environmental, social and economic performance, indicates the right way to go towards a more sustainable future.