



# SUSTRAINY PROJECT

## ENVIRONMENTAL

### TOPIC N 2° ECOLOGY



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## Introduction to the topic

The term “ecology” was introduced by the German biologist Ernst Haeckel in 1866 and is a word of Greek origin. It derives from “oikos”, that is home, an environment in which to live. In a somewhat elaborate way, according to the nineteenth-century custom, Haeckel defined ecology as:

“The study of the economics of nature and the relations of animals with the inorganic and organic environment, especially the favourable and unfavourable relations, direct or indirect, with plants and other animals; in short, ecology is the study of all those complex interrelationships to which Darwin refers when he speaks of the conditions of the struggle for existence”.

Although Charles Darwin is above all famous for having understood and explained the mechanism of natural selection, which is fundamental for understanding the evolution of species, it is to him that we owe many of the ideas behind modern ecology, for example the idea that competition between species (the struggle for existence) is one of the fundamental phenomena that structure nature as we see it.

Coming to more recent definitions, in 1961 Andrewartha, one of the great modern ecologists, stated that ecology is “the scientific study of the distribution and abundance of organisms”, while another great ecologist, Slobodkin, suggested that “ecology, in general terms, deals with the interaction between organisms and their environment in the widest possible sense”. Compared to Andrewartha’s definition, Slobodkin’s definition has the merit of highlighting the importance of the concept of interaction. Modern ecology is not content to describe where organisms are on earth and in what number, but wants to explain the causes of their distribution in space and time. Therefore the definition that is perhaps best suited to what the international scientific community currently understands by ecology is that of Krebs (1972): “Ecology is the scientific study of the interactions that determine the distribution and abundance of organisms.

This science is part of biology, dealing with living systems at the highest level of integration. An important focus for ecologists is to improve the understanding of how biodiversity affects ecological function. Ecologists work to explain:

- Life processes, interactions, and adaptations
- The movement of materials and energy through living communities
- The successional development of ecosystems
- The abundance and distribution of organisms and biodiversity in the context of the environment.

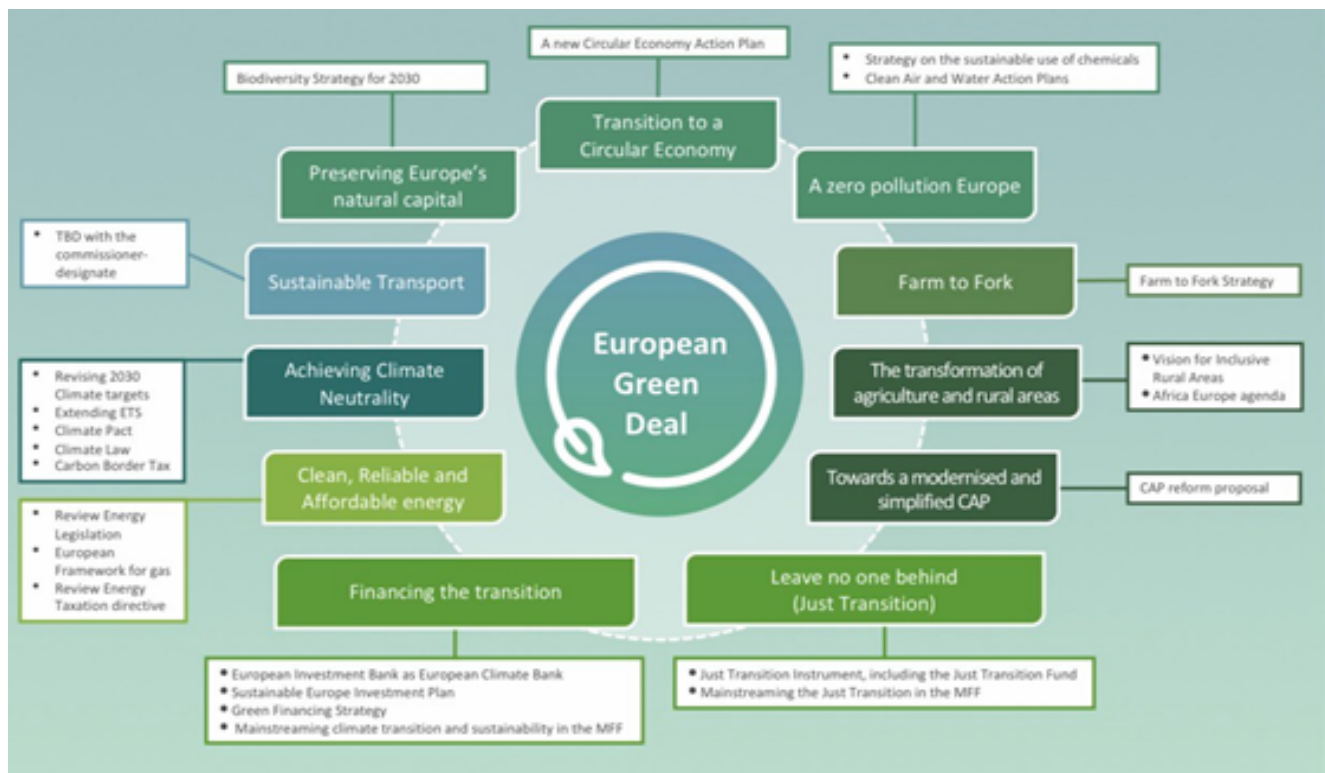


However, as it has to study the interactions of organisms also with the environment, ecology must be brought closer today to the recent mass interest in environmental problems and therefore also in ecological problems, and European policies on ecology are part of general environmental policy.

European environmental policy is based on the precautionary principle, the prevention and correction of pollution at source and the polluter pays principle. Multiannual environmental action programmes set the framework for future action in all areas of environmental policy. They are integrated into horizontal strategies and are taken into account in international environmental negotiations. Last but not least, implementation is crucial.

The legal basis is Articles 11 191, 192 and 193 of the Treaty on the Functioning of the European Union (TFEU). The EU is competent to act in all areas of environmental policy, such as air and water pollution, waste management and climate change. Its scope of action is limited by the principle of subsidiarity and the requirement for unanimity in the Council in the areas of taxation, land-use planning, land use, quantitative water management, choice of energy sources and energy supply structure.

The EU can and should use its influence and expertise and use its financial resources to mobilise and invite neighbouring countries and partners to chart a sustainable path together. The Green Deal is an integral part of this strategy to implement Agenda 2030 and the UN sustainable development objectives as well as the other priorities announced in President von der Leyen's political guidelines.



In the context of the Green Deal<sup>1</sup>, the Commission intends to refocus the macro-economic coordination process of the European Semester to integrate the UN sustainable development objectives to put sustainability and the well-being of citizens at the heart of economic policy and make sustainable development objectives the focus of EU policy-making and action. To achieve these objectives, it is essential to increase the value attributed to the protection and restoration of natural ecosystems (which we will explore in Chapter 1 “Biodiversity and Ecosystems”), to the sustainable use of energy and food resources (as we will see in Chapters 2 “Clean energy and green building” and 3 “Agroecology and Quality food”) all for the improvement of human health (which we will explore in Chapter 4 “Quality of life”). The objective is to have a zero climate impact EU in 2050. To this end, a European climate law has been proposed which turns political commitment into a legal obligation and investment incentive.

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<sup>1</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)



## Chapter 1 - Biodiversity and ecosystems

### 1.1 Concept of biodiversity and excursus on the Convention on Biological Diversity (CBD)

Biodiversity has been defined by the Convention on Biological Diversity (CBD) as the variability of all living organisms included in aquatic, terrestrial and marine ecosystems and the ecological complexes to which they belong. Interactions between living organisms and the physical environment create functional relationships that characterise different ecosystems ensuring their resilience, their maintenance in a good state of conservation and the provision of so-called ecosystem services.<sup>1</sup>

The Earth's biological resources are vital for the economic and social development of humanity. Consequently, there is increasing recognition that biological diversity is a global resource of enormous value to present and future generations. At the same time, the threat to species and ecosystems has never been greater than it is today. The extinction of species caused by human activities continues at an alarming rate.

In response, as early as November 1988 the United Nations Environment Programme (UNEP) convened an ad hoc working group of experts on biological diversity to explore the need for an international convention on biological diversity (the CBD). Shortly afterwards, in May 1989, it set up the ad hoc working group of technical and legal experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. The experts were to take into account "the need to share costs and benefits between developed and developing countries", as well as "ways and means to support innovation by local populations".<sup>2</sup>

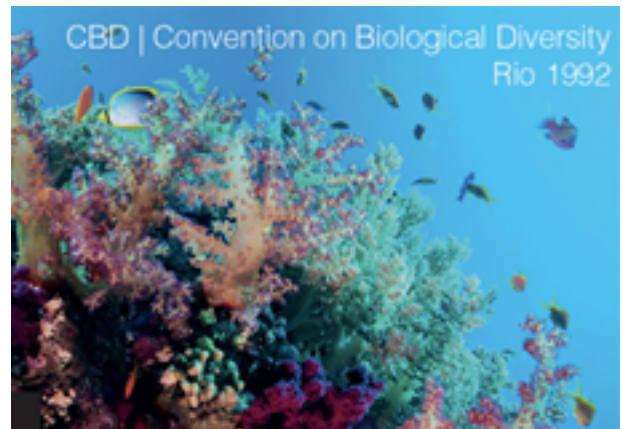
In February 1991, the ad hoc working group became the Intergovernmental Negotiating Committee. Its work culminated on 22 May 1992 with the Nairobi Conference for the adoption of the agreed text of the Convention on Biological Diversity, which entered into force on 29 December 1993. The Convention on Biological Diversity was inspired by the growing commitment of the world community to sustainable development. It represents a dramatic step forward in the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of genetic resources.

<sup>1</sup> <https://www.minambiente.it/pagina/cbd-convenzione-di-rio-de-janeiro>; <https://www.minambiente.it/pagina/biodiversita>

<sup>2</sup> <https://www.cbd.int/>



On 29 January 2000, the Conference of the Parties<sup>1</sup> to the Convention on Biological Diversity adopted an additional agreement to the Convention known as the *Cartagena Protocol on Biosafety*<sup>2</sup>. The Protocol aims to protect biological diversity from potential risks posed by living modified organisms arising from modern biotechnology. It establishes a prior informed agreement procedure to ensure that countries are provided with the information necessary to make informed decisions before accepting imports of such organisms into their territory. The Protocol contains a reference to a precautionary approach and reaffirms the language of precaution in Principle 15 of the Rio Declaration on Environment and Development. The Protocol also establishes a Biosafety Clearing-House to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.



A further supplement to the Convention on Biological Diversity is the *Nagoya Protocol*<sup>3</sup>. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising from the use of genetic resources; adopted on 29 October 2010 in Nagoya, Japan, it entered into force on 12 October 2014. Its objective is the fair and equitable sharing of benefits arising from the use of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity.

## 1.2 The objectives for the protection of Biodiversity and the active involvement of businesses

European diversity is unique, but the loss of biodiversity has accelerated unprecedentedly in Europe and the world. In Europe, around 42% of European mammals are endangered, along with 15% of birds and 45% of butterflies and reptiles.

2020 was called the ‘super year’ for nature, as it provided several key high-level opportunities to improve climate action, prevent further deterioration of nature and enhance action to protect biodiversity over the next decade. However, this ambitious global roadmap for 2020 has been overshadowed by the unprecedented crisis the world is currently facing. The COVID-19 pandemic exemplifies how negative human impacts on natural ecosystems can have humanitarian, social and economic consequences worldwide. The need to urgently improve the protection of biodiversity is more evident than ever, especially in the context of increasing hunger and poverty, but at the same time it has given the planet “breathing space” to the sensitive issue of CO<sub>2</sub> emissions, whose dramatic decline is a consequence of the various lock-downs implemented by individual countries, first and foremost China. 2020 has become a year of reflection, opportunities and solutions - an opportunity for the world to incorporate nature and climate into its recovery strategies.

<sup>1</sup> <https://www.cbd.int/programmes/>

<sup>2</sup> <http://bch.cbd.int/protocol/text/>

<sup>3</sup> <https://www.cbd.int/abs/>

In this context, the planned adoption of a new and ambitious post-2020 framework for the Convention on Biological Diversity at the Conference of the Parties (COP 15) in Kunming, China in 2021 remains critical to ensure a robust and ambitious outcome. To this end, a Biological Diversity Summit entitled “Urgent Action on Biodiversity for Sustainable Development” will be held on 22-23 September 2020. The objective of this Summit is to highlight the urgency of action in support of a global post-2020 biodiversity framework that will contribute to the 2030 Sustainable Development Agenda and put the global community on the road to achieving the 2050 Vision for Biodiversity. The theme of the International Day for Biological Diversity (22 May) will be “Our solutions are in nature” to highlight the hope, solidarity and importance of working together at all levels to build a future of life in harmony with nature.



**22 MAY 2020**  
**INTERNATIONAL DAY FOR**  
**BIOLOGICAL DIVERSITY**  
**Our solutions are in nature**

The need to involve business in achieving the objectives of the Convention was recognised by the Conference of the Parties at its eighth meeting in Brazil in 2006. Decisions were taken to establish the conditions that facilitate private sector engagement and encourage enterprises to “adopt practices and strategies that contribute to the achievement of the aims and objectives of the Convention and the objectives of Aichi Biodiversity Targets”. Decision X/21 encouraged companies to examine, share and adopt best practices available within their relevant industries, including with small and medium-sized enterprises, and invited companies to align investment, management and procurement policies with the conservation and sustainable use of biodiversity and ecosystem services. Businesses need to recognise their impact and their dependence on biological diversity and ecosystem services.

### 1.3 Programs and green product certifications

If you are interested promoting a greater „integration” between companies and biodiversity the Global Partnership for Business and Biodiversity is a useful tool and network. Currently composed of 21 national and regional initiatives, all working for a greater commercial commitment on issues related to biodiversity. The Global Partnership is, therefore, a network linking the various initiatives so that information and good practices can be shared and cooperation on joint projects with the aim of integrating biodiversity issues in companies. The aim of these efforts, taken together with those of partner organisations, is to increase the number of companies with a significantly reduced negative impact on biodiversity (or even a net positive impact) and to mobilise and enable them to act as positive influencers on other entities across the economy<sup>1</sup>. *Compliance with environmental standards and certification systems.* Companies are therefore the main players in this landscape and are responsible for their impact on biodiversity and ecosystem services. But, to act responsibly, they need information about where these risks and opportunities related to biodiversity impacts lie.



<sup>1</sup> [https://www.cbd.int/business/National\\_Regional\\_BB\\_Initiatives.shtml](https://www.cbd.int/business/National_Regional_BB_Initiatives.shtml)





The IUCN and the WBCSD have joined forces to develop a *handbook*<sup>1</sup> that describes the various existing knowledge products and explains how they can help companies assess, manage and report on their impacts and dependencies on biodiversity and achieve compliance with environmental standards and certification systems.

If you don't know it yet, *The Life + programme*<sup>2</sup> is a favourable channel for actions and projects related to biodiversity protection.. The Community funding programme LIFE was created in 1992 to contribute to the development and implementation of Community legislation and policy on the environment and from the outset also focuses its action on nature conservation, to contribute to the protection of habitats and species covered by the Habitats Directive 92/43/EEC and the Birds Directive 79/409/EEC.

For this sector, a specific LIFE-Nature line has been identified since 1996 and this has increased the effectiveness and efficiency of the instrument in this area, also highlighting the importance of migration routes and buffer zones for the conservation of biodiversity as well as the implementation of the protection of Community species and habitats.



Finally, consumers are increasingly aware of environmental issues and are increasingly looking for „green“ products. Companies are increasingly obliged to consider these issues in their business models, decisions, procurement and production methods. Biodiversity management is, therefore, a way to manage risk, which is why product certifications such as „ecolabel“ certification have been designed. The *“Ecolabel”*<sup>3</sup> is a European label used to certify the reduced environmental impact of the products or services offered by the companies that have obtained it. The Ecolabel is a voluntary Community instrument that certifies (according to Regulation (EC) No 66/2010) environmentally compatible products. In this way it allows the final consumer to recognize through a label the respect of the environment by the product (or service) throughout its life cycle, which can thus diversify from other competing products on the market, maintaining high environmental performance standards.

#### 1.4 Best practices - EU green week and the best projects<sup>4</sup>

Do you Know the *EU Green Week*<sup>5</sup>? It is the biggest environmental event in Europe. The LIFE Awards recognise the most innovative, inspirational and effective LIFE projects in the fields of nature protection, environment and climate action. EU Green Week 2020 is now scheduled for 20-22 October 2020, on the theme of nature and biodiversity. It will highlight the contribution biodiversity makes to society and the economy, and the role it can play in supporting and stimulating recovery in a post-pandemic world, bringing jobs and sustainable growth.

1 <https://portals.iucn.org/library/node/4336>. For other useful tools you can visit <https://www.cbd.int/business/resources/tools.shtml>

2 <https://ec.europa.eu/easme/en/life>

3 <https://ec.europa.eu/environment/ecolabel/>

4 <https://ec.europa.eu/easme/en/section/life/life-best-projects>

5 <https://www.eugreenweek.eu/en>



The recovery is an opportunity for a fresh start, in the knowledge that transformative change is possible. It's a chance to rethink our relationship with nature, to reconsider the activities that are driving biodiversity loss and the wider ecological crisis, and to weigh up the implications for our economy and society. EU Green Week will examine how EU policies such as the European Green Deal can help



protect and restore nature, leaving it room to recover and thrive. This year's Green Week will also act as a milestone on the path to the Conference of the Parties (COP 15) to the Convention on Biological Diversity, now planned for 2021, where world leaders will adopt a 10-year action plan for biodiversity – a new global deal for people and nature. In May 2019, the LIFE Programme announced the winners of the LIFE 2018 awards. The three winners come from Italy (Nature category), Spain (Environment category) and Greece (Climate Action category).

LIFE Award for Nature: LIFE WOLFALPS (Italy)<sup>1</sup> – coordinated conservation actions in the Alpine regions of France, Italy and Slovenia. Minimising conflict with people has helped increase the number of wolf packs and the species' range.

The *LIFE WOLFALPS* project, co-funded by the European Union in the framework of the LIFE+ 2007-2013 „Nature and Biodiversity” programme, aims to implement coordinated actions for the long-term conservation of the Alpine wolf population. Among the objectives of LIFE WOLFALPS, there is the identification of functional strategies to ensure a stable coexistence between the wolf and traditional economic activities, both in areas where the wolf is already present for a long time and in areas where the process of natural recolonization is currently underway.

Operation M10.1.19<sup>2</sup> focuses on result-oriented and focused Rural Development Programme (RDP) interventions to stabilise endangered habitats, species and plants and thus reverse the decline of biodiversity in Austria's agricultural regions. To fight the ongoing decline of biodiversity in Austria, it is necessary to adopt result oriented, focused and specific interventions in targeted regions that are habitats for endangered species. Operation M10.1.19 - Nature conservation provides targeted solutions to achieve this. The primary objective of Operation M10.1.19 is the conservation and enhancement of endangered habitats, species and plants. It supports activities like the implementation of specific combinations of nature protection commitments, which are decided by farmers, ecologists and the nature conservation departments of the federal provinces. Evaluation studies show that the abundance of the Whinchat (a small, perching migratory bird), which is an indicator species for traditionally cultivated hay meadows, increased in accordance with the type of interventions adopted. Nature conservation commitments had positive effects on a high proportion of arable land. About 31% of the breeding areas for the Great Grey Shrike (a large songbird) had adopted nature conservation commitments.

<sup>1</sup> <http://www.lifewolfalps.eu/il-progetto-in-breve/>

<sup>2</sup> [https://enrd.ec.europa.eu/projects-practice/nature-conservation-austrian-rural-development-programme\\_en](https://enrd.ec.europa.eu/projects-practice/nature-conservation-austrian-rural-development-programme_en)



## Chapter 2 - Clean energy & green building

### 2.1 From Silent spring to the 2030 agenda

The 2030 Agenda for Sustainable Development, adopted by all UN Member States in 2015, provides a shared vision for peace and prosperity for people and the planet, now and in the future. At its core are the 17 Sustainable Development Goals (SDGs)<sup>1</sup>, which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognise that ending poverty and other deprivation must go hand in hand with strategies that improve health and education, reduce inequalities and stimulate economic growth - all while tackling climate change and working to preserve our oceans and forests, which is so obvious and necessary today.

In particular, Objective 7 aims to „Ensure access to affordable, reliable, sustainable and modern energy for all” and Objective 11 aims to „Ensure sustainable patterns of production and consumption”. Yet this has not always been the case in human history and political choices. We have to go back to the not so distant 1962, when *Silent Spring*, written by what was called the „mother of environmentalism”, Rachael Carson<sup>2</sup> was printed in the United States. At that time the word „environment was not part of any political challenge” (cit. Al Gore, intro to the text *Silent Spring*), and began to take shape thanks to Rachael Carson’s denunciation of the massive use of pesticides and the danger they cause to flora and fauna and to human health itself - an obvious connection between population and exploitation of resources. Data on ecological and biological mechanisms began to be monitored.



1 <https://unric.org/it/agenda-2030>

2 <https://www.rachelcarson.org/>

The first national and international conferences on environmental issues began in 1968, in connection with anthropological activities, as well as non-profit, non-governmental and governmental associations, including the EPA (Environmental Protection Agency) in 1968, Friends of the Earth in 1969, Greenpeace in Canada in 1971, the Worldwatch Institute in the USA in 1975, etc. The limits of „environmental exploitation”, however, conflicted with the needs and problems of poor countries, which instead denounced mismanagement of resources. 1987 is a historic date with the Brundtland Report (better known as Our Common Future), followed in 1992 by the Earth Summit held in Rio de Janeiro, where more than 178 countries adopted Agenda 21, a global plan of action to build a global partnership for sustainable development to improve human lives and protect the environment. The unanimous Millennium Declaration at the UN Millennium Summit in New York in September 2000 was followed by the Johannesburg Declaration on Sustainable Development and the Plan of Implementation, adopted at the World Summit on Sustainable Development in South Africa in 2002, where they reaffirmed the global community’s commitments to poverty eradication and the environment including a stronger emphasis on multilateral partnerships.

The process culminated with the subsequent adoption of the 2030 Sustainable Development Agenda, with 17 SDGs at its centre, at the UN Summit on Sustainable Development in September 2015. More than 48,000 young Europeans –like you - also had the opportunity to express their views on the future of Europe and the policies that impact on their lives by participating in the large-scale consultation process, which ended in February 2018 and whose results were grouped into 11 thematic areas. The last European Youth Conference, held in Sofia, Bulgaria, from 17 to 19 April 2018, outlined the „YouthGoals”<sup>1</sup>, the objectives of youth policies based on these 11 thematic areas, in particular, Objective 10 looks towards a greener and more sustainable Europe.



## 2.2 Renewable energies and the building sector

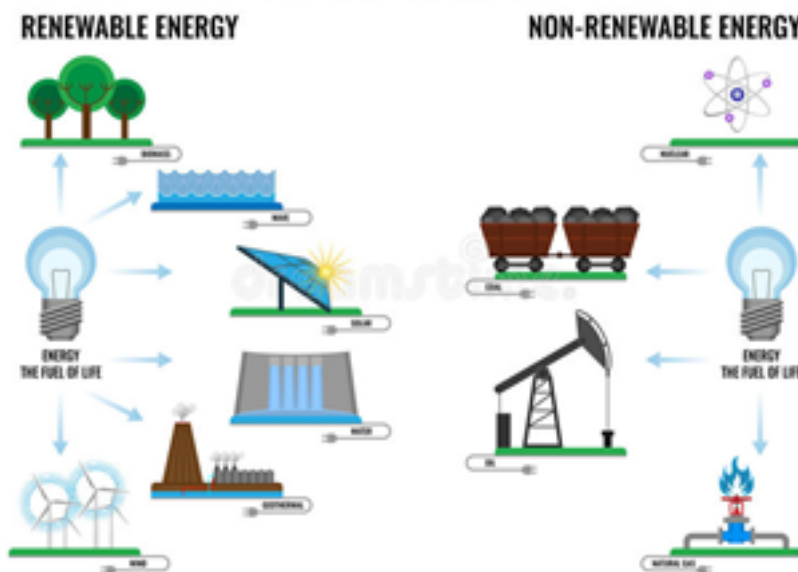
The 10th „YouthGoals” reads: „Nowadays we consume in ways that our environment cannot sustain. But our society cannot solve a problem that it is not willing to recognize”. That is why everyone, including young people, must start taking responsibility for their actions and the impact on the lives of future generations. Becoming sustainable is not a choice, it is an obligation. By 2020, the Commission will propose Europe’s first „climate law” to establish the conditions for a fair and effective transition, ensure predictability for investors and ensure that the transition is irreversible. In this way, the objective of climate neutrality by 2050 will be enshrined in law.

The EU has already begun to modernise and transform the economy with the objective of climate neutrality. Between 1990 and 2018 it reduced greenhouse gas emissions by 23 %, while the economy grew by 61 %. However, by maintaining current policies, the reduction in greenhouse gas emissions will be limited to 60 % by 2050. Much remains to be done over the next decade, starting with more ambitious climate action.

<sup>1</sup> <https://youthforeurope.eu/european-youth-goals-2019-2027/>



## ENERGY SOURCES



Energy production and use in different economic sectors account for more than 75 % of EU greenhouse gas emissions. Priority must be given to energy efficiency. An energy sector-based to a large extent on renewable sources needs to be developed, with the simultaneous rapid elimination of coal and the decarbonisation of gas.

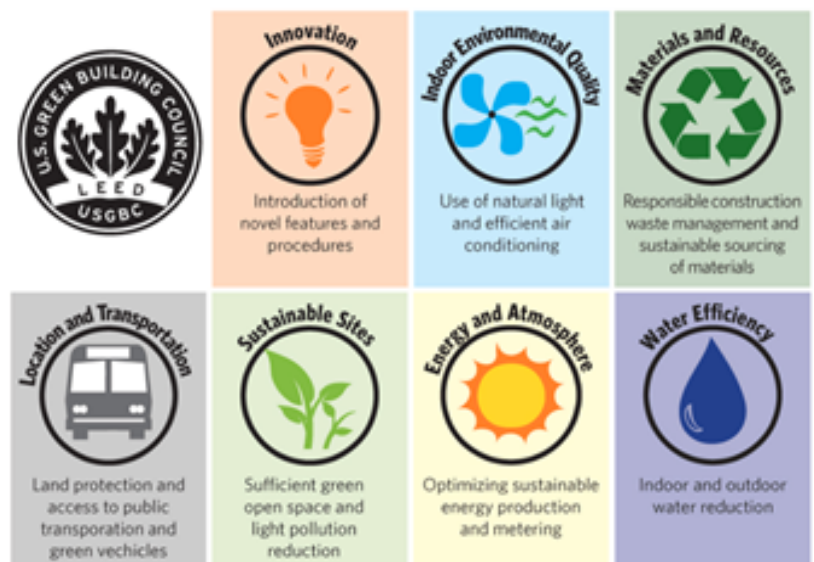
The transition to clean energy should involve consumers and benefit them. Renewable energy sources will play a key role, as will increase offshore wind production, thanks to regional cooperation between the Member States. Smart integration of renewable energy, energy efficiency and other sustainable solutions in all sectors will help to achieve decarbonisation at the lowest possible cost. The transition to climate neutrality also requires smart infrastructure. The construction, use and renovation of buildings absorb significant amounts of energy and mineral resources (such as sand, gravel, cement). Buildings are also responsible for 40 % of energy consumption. Currently, the annual rate of renovation of the building stock in the Member States varies from 0,4 % to 1,2 %, a rate which will need to be at least doubled if the EU's energy efficiency and climate targets are to be met.

To meet the dual challenge of energy efficiency and affordability of energy, the EU and the Member States should launch a „wave of renovations” of public and private buildings. In parallel, the Commission proposes to work with stakeholders on a new renovation initiative in 2020. The initiative will include an open platform bringing together the building and construction sector, architects and engineers and local authorities to tackle barriers to renovation. Innovative financing schemes will also be envisaged under InvestEU which could be used by building associations or energy service companies, which could also implement renovations through energy performance contracting. A key objective would be to organise restructuring efforts into larger blocks so that they can benefit from better financing conditions and economies of scale. The Commission will also work to remove national regulatory barriers to investment in energy efficiency in rental and timeshare buildings. Particular attention will be paid to the renovation of social housing to help families struggling to pay energy bills, including schools and hospitals, as the money saved through increased efficiency can be used to support education and public health.

## 2.3 Leed certification and the Expert for Energy Management

The Commission will rigorously enforce energy performance legislation in the buildings sector, starting with an assessment of Member States' long-term national renovation strategies to be carried out in 2020. In the context of wider action to ensure that relative prices of different energy sources provide appropriate signals for energy efficiency, the Commission will also start working on the possibility of including emissions from buildings in emissions trading. It will also examine the Construction Products Regulation which should ensure that all stages of the design of new and renovated buildings are in line with the needs of the circular economy and lead to greater digitisation and an increasing climate resilient building stock. The increase in specific diseases such as asthma and childhood allergies is also linked to the VoC emissions of materials, massive deforestation, the degree of recyclability of materials and the consumption of Co2 needed to produce them are highly topical issues.

A Useful tool is *LEED certification*. It's a certification program that can be applied to any type of building and promotes a sustainability-oriented approach, recognizing the performance of buildings in areas such as energy and water saving, emission reduction, improvement of interior quality, materials and resources used, design and site selection. The system is based on the allocation of 'credits', which also vary according to the materials and systems used. The analysis of the contribution in terms of credits of the individual products is called „mapping“ the Leed characteristics of the product.



*EGE: the EXPERT IN ENERGY MANAGEMENT.* This is a European system for certification in energy management that meets the technical standard UNI CEI 11339. The Energy Management Expert (EGE) is a modern, interdisciplinary professional figure called upon to act in the context of the new European energy market, based on principles such as market liberalisation, energy and environmental measures contained in the Climate and Energy Package (20-20), a skills-based qualification system and a harmonised framework of rules. The EGE is called upon to best interpret the changes that have affected the sector over the last decade, changing the balance of interests between consumers, energy suppliers, network operators and Energy Service Companies.

Based on work experience, the EGE can be certified according to two areas of expertise:

- Expert Energy Management Industrial sector: activities in production processes and systems, distribution and production of energy, water, gas, transport systems (where applicable);
- Expert Energy Management civil sector: activities related to plants, service systems, infrastructure, logistics, and commerce in civil applications, public and private buildings.

## 2.4 BEST PRACTICE - “Schoonheid” Keyword of Studio Roosegaarde

Studio Roosegaarde: Pioneers of the livability of future landscapes. Clean air, clean water, clean energy and now clean space are their values. As a social design laboratory, Dutch artist and innovator Daan Roosegaarde<sup>1</sup> and his team of designers and engineers connect people and technology in works of art that improve everyday life in urban environments, stimulate the imagination and combat the climate crisis.

Internationally renowned works include **WATERLICHT** (a virtual flood that shows the power of water), **SMOG FREE PROJECT** (the world’s first largest outdoor air purifier that turns smog into jewellery), **SMART HIGHWAY** (streets that load during the day and shine at night) and **SPACE WASTE LAB** (viewing and recycling space waste).<sup>2</sup>

Roosegaarde’s mantra ‘Schoonheid’ is a Dutch word with two meanings: ‘beauty’, which comes from creativity; and ‘clean’, which comes from clean air and clean energy. For Roosegaarde this should be a fundamental condition in everyday life.

In his recent book, Phaidon published by Daan Roosegaarde says: „People will not change because of facts or numbers. But if we can unleash the imagination of a new world, this is the way to activate people”. I don’t believe in utopia, but in protopia, which improves the world around us step by step. Art is our activator”.

Studio Roosegaarde is located in a former glass factory in the port of Rotterdam NL, also known as the Factory of Dreams. Here innovations are developed, from concept to art installations. The Studio has extensive experience in public space commissions in cities like Rotterdam, Beijing, Paris, Eindhoven and Stockholm. Roosegaarde has exhibited at the Rijksmuseum Amsterdam, Stedelijk Museum Amsterdam, Design Museum London, Tate Modern, Mori Art Museum Tokyo, Musee des Arts Decoratifs Paris, Google Zeitgeist and Victoria & Albert Museum, and has won numerous international awards for innovation such as the Shenzhen Global Design Award.

<sup>1</sup> [https://www.ted.com/talks/daan\\_roosegaarde\\_a\\_smog\\_vacuum\\_cleaner\\_and\\_other\\_magical\\_city\\_designs](https://www.ted.com/talks/daan_roosegaarde_a_smog_vacuum_cleaner_and_other_magical_city_designs)

<sup>2</sup> [www.studioroosegaarde.net/project/gates-of-lights](http://www.studioroosegaarde.net/project/gates-of-lights), [www.studioroosegaarde.net/project/van-gogh-path](http://www.studioroosegaarde.net/project/van-gogh-path)



## Chapter 3 - Agroecology and Quality Food

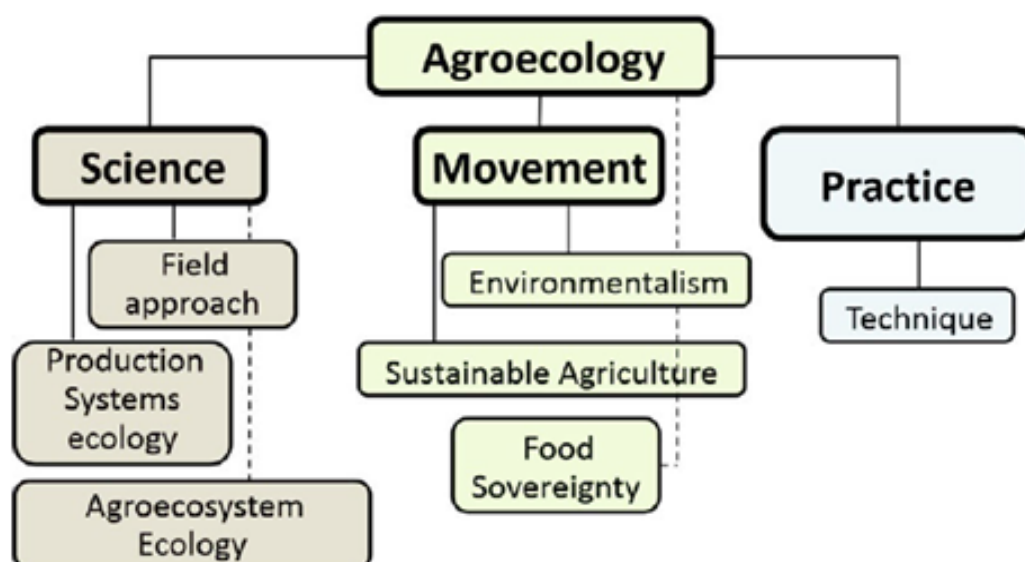
### 3.1 Agroecology between science and movement

Agroecology is a concept in which science, practice and movement are equally important and where there is a constant exchange between the three pillars.

**Science:** it privileges active research, holistic and participatory approaches, transdisciplinarity that includes different knowledge systems.

**Practice:** it is based on the sustainable use of local renewable resources, on the knowledge and priorities of local farmers, on the wise use of biodiversity to provide services and resilience to ecosystems and solutions that offer multiple benefits (environmental, economic, social) from local to global.

**Movement:** defends smallholder farmers and family farming, rural communities, food sovereignty, local and short food supply chains, diversity of seeds and indigenous breeds, health and food quality.<sup>1</sup>



<sup>1</sup> <https://www.agroecology-europe.org/our-approach/our-understanding-of-agroecology/>



Agroecology uses the disciplines of modern agricultural science, but its approach is also influenced by indigenous knowledge systems on land, plants, etc. that have nurtured traditional agricultural systems for millennia. Agroecology focuses heavily on soil and regeneration methods, which again helps soil fertility and the creation of healthy soil. Agroecology does not promote individual technical recipes but rather principles, it is process-based agriculture. In addition to science and practice, agroecology also refers to a wide variety of social movements aimed at environmental protection, the development of sustainable agricultural systems and food sovereignty. The concept of „movement” is used to highlight the vision of the positive social and economic impact that agroecology has for sustainable rural development. Despite the strong influence of ecology as a fundamental discipline, agroecology also enjoys the influence of social sciences such as ethnoecology, rural sociology and ecological economics. Agroecology uses a holistic approach, therefore it provides the knowledge and methodology necessary for the development of agricultural systems that are both ecologically sound and highly productive, socially equitable and economically viable.

Industrial agriculture was only partially successful in meeting the global food needs of the 20th century, as the food crises in the late 1970s had already become a reality. What are the main problems with industrial agriculture?

- the environmental impact
- social problems

Now the threats and impact of the practices and policies followed raises the need for a paradigm shift towards a truly sustainable food production system. A sustainable food production system is a collaborative network that integrates different components to improve the environmental, economic and social well-being of a community. It is built on principles that further promote the ecological, social and economic values of a community and region.

If you want to recognize sustainable food production systems, they must provide the following benefits to the stakeholders involved:

- Economic: generates a fair income for all parties involved in food production and trade; helps to strengthen local economies; economically evaluates environmental services;
- Social: provides a healthy working environment for workers and healthy food for consumers. Tradition and cultural values are reflected in production methods and variety selection, but at the same time producers have access to innovative knowledge;
- Environmental: sustainable food systems also aim to preserve water and soil quality, improve biodiversity both on the farm and in the landscape, while being climate-friendly, so they also have a strong environmental aspect.<sup>1</sup>

<sup>1</sup> [https://www.researchgate.net/publication/337260958\\_Agroecologia\\_un\\_nuovo\\_paradigma\\_per\\_la\\_sostenibilita\\_dei\\_sistemi\\_agroalimentari\\_e\\_la\\_salute\\_dell\\_umanita\\_e\\_dell\\_ambiente](https://www.researchgate.net/publication/337260958_Agroecologia_un_nuovo_paradigma_per_la_sostenibilita_dei_sistemi_agroalimentari_e_la_salute_dell_umanita_e_dell_ambiente)

### 3.2 “From Farm to Fork” for Quality food

To cope with population growth and changing eating habits, world food production must double by 2050. It faces the impact of climate change on biodiversity, soil and water quality and the needs of the global market.

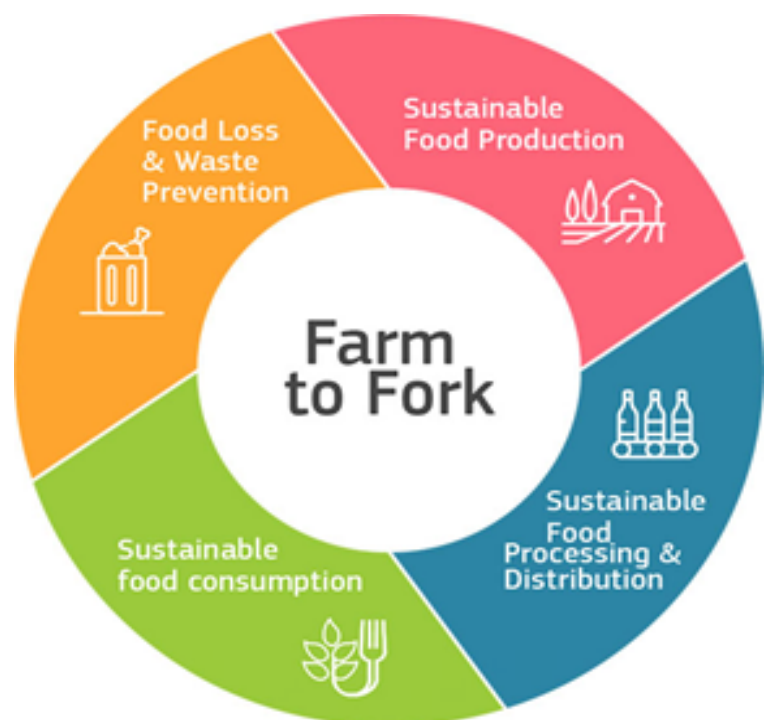
EU agricultural policy has changed considerably to help farmers meet these challenges and to respond to changing public behaviour and expectations. EU agricultural policy covers a wide range of areas, including traceability, trade and promotion of EU agricultural products and food quality.



The EU supports farmers financially and encourages sustainable and environmentally friendly practices, as well as investing in the development of rural areas. The EU institutions cooperate in the design, implementation, monitoring and evaluation of food and agricultural policies. With reference to the objectives of the European Green Deal, the EU aims at a strategy called „From Farm to Fork”<sup>1</sup> which includes measures, including legislation, to significantly reduce the use of chemical pesticides and related risks, as well as the use of fertilizers and antibiotics in agriculture, aiming at a healthier and more sustainable European food system, the cornerstone of the European Green Deal (reduce the use and risk of chemical pesticides by 50% by 2030; reduce the use of more dangerous pesticides by 50% by 2030; reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility; reduce fertilizer use by at least 20% by 2030). Organic farming is an environmentally friendly practice that needs to be further developed.

The Commission will promote the development of the EU organic farming area to achieve (25% of total agricultural land) organic farming by 2030.

„The coronavirus crisis has shown how vulnerable we all are and how important it is to restore the balance between human activity and nature. At the heart of the Green Deal, the Biodiversity and Farm to Fork strategies,” said Frans Timmermans, Executive Vice-President of the European Commission, „aim to achieve a new and better balance between nature, food systems and biodiversity; to protect the health and well-being of our people and, at the same time, to increase the EU’s competitiveness and resilience. These strategies are a crucial part of the great transition we are undertaking”.



<sup>1</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/farm-fork_en)

### 3.3 EU guidelines on food certification

To ensure healthy, accessible and sustainable nutrition for Europeans, the EU has established Guidelines on best practices for voluntary certification schemes for agricultural products and foodstuffs<sup>1</sup>. Although some certification schemes for agricultural products and foodstuffs concern compliance with mandatory standards, these guidelines deal specifically with voluntary certification schemes. These are designed to ensure certain levels of quality in terms of taste, colour and smell as well as, for example, environmental factors, animal welfare and fair trade. The guidelines aim to make these voluntary certification schemes more effective:

- indicating best practices;
- clarifying the requirements of the schemes;
- increasing market opportunities and reducing costs for farmers and producers;
- protecting the responsibility and reputation of wholesalers and retailers concerning the product and label claims;
- providing consumers with reliable and trustworthy information about the product;
- ensuring compliance with EU internal market rules, in particular about anti-competitive behaviour.

The guidelines indicate that while schemes may be developed by expert groups, they should be structured in such a way as to encourage the participation of all interested parties, i.e. producers, farmers, public authorities, interest groups and customers.

The schemes should have the following characteristics:

- certification must be carried out by an independent body;
- regular inspections of scheme participants should be carried out, adopting clear criteria and checklists;
- thresholds for penalties should be determined with clear procedures for dealing with non-compliance;
- feedback mechanisms must be in place, with continued participation in future development.

The EU will work with non-member countries and international actors to support a global move towards sustainable food systems, including by proposing mandatory harmonised nutrition labelling on the front of the pack and developing a sustainable food labelling framework covering the nutritional, climate, environmental and social aspects of food products

Also, €10 billion will be allocated under Horizon Europe to invest in R&I related to food, the bio-economy, natural resources, agriculture, fisheries, aquaculture and the environment. CAP farm advisory services and the Farm Sustainability Data Network will be essential to assist farmers in moving towards a more „sustainable“ agriculture. A sustainable food labelling framework will facilitate consumer choice and ensure a competitive advantage for European farmers.

<sup>1</sup> [https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=legisum:030301\\_1](https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=legisum:030301_1)



### 3.4 Best practices

#### *Italian Food Experience.*<sup>1</sup>

If you want to know more about the quality of Italian food I suggest you to visit IFE ([www.italianfoodexperience.it](http://www.italianfoodexperience.it)) . IFE is an organization committed to promoting Italian territories, products and producers through the world of food. IFE is committed to enhancing food as a tangible culture, which inevitably passes through Italian gastronomy and culinary traditions, almost as much as the tables of Italians. Not only gastronomy, but a history of quality products from North to South of Italy to understand, know and explore the depths of Italian culture, full of colours and flavours. A tool to know and enhance the food and the supply chains that make Quality their strong point, from production to the table. On IFE courses you can learn more about Italian companies that have chosen quality and sustainability, such as Rigoni di Asiago<sup>2</sup> or Alcenero<sup>3</sup>.



*Orivárzea*<sup>4</sup> is a company and Association of rice producers. It also manages a production area of 959 ha and carries out other activities such as the drying, storing, milling, blanching, packing and marketing and selling of the rice (*Oryza sativa* L.). Before receiving Rural Development Programme (RDP) support Orivárzea used an inadequate irrigation infrastructure that was over 30 years old. The old system was energy consuming, leaked and therefore wasted water. To improve its production efficiency, while also protecting the environment, Orivárzea upgraded its irrigation infrastructure in about two thirds of the production area (661.9 hectares). This was done by replacing the pumping system and improving the water distribution network to the seedbeds/rice fields. Investment in the pumping system has allowed an increase in the efficiency of the water catchment capacity, i.e. with less powerful / energy consuming systems. The new pipelines make it possible to maintain the same low, yet sufficient, water level across all the rice beds. In terms of the efficiency of production the costs for water, energy, pesticides, fertilisers and labour decreased while the production yield increased.

1 <https://www.italianfoodexperience.it/>

2 <https://www.italianfoodexperience.it/storie/rigoni-di-asiago/>

3 <https://www.italianfoodexperience.it/storie/alce-nero/>

4 [https://enrd.ec.europa.eu/projects-practice/modernization-rice-growing-farm-portugal\\_en](https://enrd.ec.europa.eu/projects-practice/modernization-rice-growing-farm-portugal_en); <http://www.orivarzea.pt/pt>



## Chapter 4 - Quality of life

### 4.1 Ensuring human health

If ecology studies for the protection of terrestrial species, then we cannot fail to address the issue of the protection and prevention of the Human Being, who is responsible for his own protection and health. The quality of human life is, in fact, a consequence of the same human policies related to the environment. If the planet is well, then also its „inhabitants” are well. Health is in fact linked to Objective 3 of Agenda 2030, which aims to ensure health and well-being for all and for all ages. To achieve sustainable development it is, in fact, essential to ensure a healthy life and promote the wellbeing of all at all ages<sup>1</sup>.

Great progress has been made in increasing life expectancy and reducing some of the most common causes of death linked to infant and maternal mortality. Significant progress has been made in access to clean water and sanitation, in reducing malaria, tuberculosis, polio and the spread of HIV/AIDS. Nevertheless, many more efforts are needed to completely eradicate a wide variety of diseases and to address many different health issues, whether recent or persistent. This can be achieved by ensuring access to quality food, clean water and care for all.

The EU has a duty to ensure that human health is protected in all policies and to work with the Member States to improve public health. The EU Health Programme sets out the strategy for good health and healthcare and is part of the broader Europe 2020 strategy, which aims to make the EU a smart, sustainable and inclusive economy that promotes growth for all. To achieve this goal, good health is essential.



COVID-19 has had a major impact on medical and healthcare staff, patients and health systems in Europe. The pandemic has revealed a clear need to strengthen crisis management and health systems.

<sup>1</sup> <https://unric.org/it/obiettivo-3-assicurare-la-salute-e-il-benessere-per-tutti-e-per-tutte-le-eta/>

EU4Health<sup>1</sup> is the EU's response to this challenge. By investing €9.4 billion, this programme will:

- boost EU's preparedness for major cross border health threats
- make sure health systems are resilient and can face epidemics as well as long-term challenges such as an ageing population and inequalities in health status.

## 4.2 The EU Health Programme

*The Health Programme*<sup>2</sup> is a funding instrument to support cooperation among EU countries and underpin and develop EU health activities. The legal basis for the Health Programme is agreed with the European Parliament and the Council for a period of several years. Regulation (EU) 282/2014 is the legal basis for the current Health Programme. With a budget of €449.4 million and throughout 23 priority areas, the Health Programme serves four specific objectives:

Promote health, prevent disease and foster healthy lifestyles through 'health in all policies',

Protect EU citizens from serious cross-border health threats

Contribute to innovative, efficient and sustainable health systems

Facilitate access to high quality, safe healthcare for EU citizens.

The Programme is implemented by means of annual work programmes agreed with countries on a number of annually defined priority actions and the criteria for funding actions under the programme. On this basis, the Consumers Health Agriculture and Food Executive Agency<sup>3</sup> (Chafea) organises calls for proposals for projects and operating grants, as well as calls for joint action and tenders. Direct grants are signed with international organisations active in the area of health. Proposals are evaluated by the Chafea, assisted by external experts. External experts are selected through calls for expression of interest.

The Commission wants to directly support the healthcare systems of EU Member States in their fights against the coronavirus pandemic through measures that can best be taken at EU level. For this purpose and based on the solidarity principle, the Commission will complement in a fast, flexible and direct way the ongoing efforts at national level.



1 [https://ec.europa.eu/health/funding/eu4health\\_en](https://ec.europa.eu/health/funding/eu4health_en)

2 [https://ec.europa.eu/health/funding/programme\\_en](https://ec.europa.eu/health/funding/programme_en)

3 [https://ec.europa.eu/chafea/index\\_en.htm](https://ec.europa.eu/chafea/index_en.htm)



The Emergency Support Instrument provides support to help Member States in their efforts to address the COVID-19 pandemic. It provides a broad EU tool-box to respond to needs which can be best addressed in a strategic, coordinated manner at European level. As a financing arm of the Joint European Roadmap towards lifting COVID-19 containment measures, the instrument helps mitigate the immediate consequences of the pandemic and anticipate the needs related to the exit and recovery.

To finance this action, the Commission is mobilising €3 billion from the EU budget, of which €2.7 billion will be channelled through the Emergency Support Instrument and €300 million through the rescUE medical equipment capacity. Additional contributions will be possible from Member States and also individuals, foundations and even crowdfunding.<sup>1</sup>

### 4.3 Health@work

In a logic of ecosystems, the working environment for man must also be thought of as an environment to be protected, because it is still a place of danger for the health and protection of the human being. Looking at man in his habitat, therefore, we must pay attention to the workplace, the context in which he spends many of his daily hours and understand what health needs are related to work. The needs have become increasingly complicated and should involve not only „defensive” but also active approaches, promoting individual, collective and environmental health.



Damage is still measured by counting occupational accidents and illnesses, which, by the way, is only possible in 2/3 of the working population.

For the future, we can expect an increase in the attempt to ‚hide’ accidents, and an increase in ‚multi-factorial’ psycho-physical pathologies, of not simple causal interpretation, more and more on the border between work and extra-work life (and this obviously also with regard to cancer).

In the meantime, dramatic situations persist in various areas of the country involving workers and citizens, with productions that are not only harmful to those who work but also polluting and a source of damage - current and future - to health for the citizens of those territories.

<sup>1</sup> [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/public-health\\_en](https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/public-health_en)

Society as a whole, in addition to thinking about the most frequent common diseases and their management and sometimes prevention, should also pay attention to the consequences of work on health. It is necessary to invest in the culture of prevention: every penny spent on prevention produces successes and savings not only in terms of health but also economically. Yet in a large part of the planet, and also in our country, it is difficult to accept this awareness and to deal with it consequently, bearing in mind that people's health, their life expectancy, their hope of recovery from (and prevention of) disease, are inextricably linked to the social condition and the 'health' and justice of the country in which they live.<sup>1</sup>

Safety and work certification. It is undeniable that managing Health & Safety in the workplace is not only a legal requirement; it is also the morally correct thing to do. Structuring your Health and Safety management system around an accepted standard and achieving Health & Safety Certification not only makes sense, it gives an organization the opportunity to prove to regulators, customers and employees alike that health and safety is recognized for its importance.

The more globally recognized European standard OHSAS 18001:2007, we offer accredited certification to both of these standards.

Occupational Health and Safety management system certification, OHSAS 18001, AS/NZS 4801 and ISO 45001, basically require the organisation to monitor and manage its hazards that may result in harm to its employees.

The new ISO (International Organization for Standardization) standard, ISO 45001, is set to replace the other standards over the next few years.

An assessment and certification to the Work Safe Warranty management system standard is more user friendly more cost effective options usually suited more to small to medium sized organizations<sup>2</sup>.

#### 4.4 Best practices from Health Programmes Database

Examples and best practices have been taken from the Health Programmes DataBase<sup>3</sup>. The European Union funds projects to improve public health, to prevent illness, and to eliminate threats to physical and mental health in European countries. To date, approximately 993 projects and actions, in conjunction with 7405 organisations across Europe, have been funded by its three multiannual health programmes. This database provides information on the nature of projects and their results. It is managed by the European Commission's Consumers, Health, Agriculture and Food Executive Agency (Chafea).

1 <https://www.puntosicuro.it/sicurezza-sul-lavoro-C-1/tipologie-di-contenuto-C-6/sorveglianza-sanitaria-malattie-professionali-C-60/l-evoluzione-del-lavoro-delle-necessita-per-la-tutela-della-salute-AR-18724/>

2 <https://intlcert.com/health-safety-certification/>

3 [https://webgate.ec.europa.eu/chafea\\_pdb/health/](https://webgate.ec.europa.eu/chafea_pdb/health/)



*EUPAP - An European Physical Activity on Prescription model*<sup>1</sup> - Organisations from ten EU member states will be partners in this 3-year project for facilitating the transfer of the Swedish best practice model for physical activity on prescription (FaR). The overall objectives are to promote good health and to prevent of non-communicable disease through implementing country-based physical activity on prescription (PAP) programs in health services in several countries.



This proposal focus on this transfer of best practice acknowledging the need for collaboration between countries and added value of interdisciplinary and policy-practice-research collaboration. The prescription of physical activity is a method that can reach and enable different population groups enhancing their physical activity for prevention and treatment of non-communicable diseases. Moreover, given access to health services this includes also socially disadvantaged groups leading to reduction in health inequalities. This means that the present proposal has the potential to contribute to meeting the objects and priorities in the work programme.

Target groups are organisations, stakeholders and end-users included in the local implementations. Target groups for dissemination will be health care educators and practitioners, physical activity suppliers, as well as patients and the general public. Special emphasis will be placed on involving policy and decision makers from authorities at national, regional and local level.

Starting an Adult Rare Tumor European Registry [STARTER]<sup>2</sup> - This project aims to set-up a clinical registry for the European Reference Network (ERN) on Rare Adult Cancers (EURACAN) which is focusing on 10 out of the 12 families of rare cancers, each corresponding to a EURACAN “domain”.

This project will:

- Develop the IT infrastructure of the Registry exploiting tools defined by the European Rare Disease Registry Infrastructure. The IT will be interoperable with other rare disease registries and compliant with the FAIR (findable, accessible, interoperable and reusable) principles.
- Identify the core data set for each of the EURACAN domain. The core data set will include data on patient characteristics, exposure (disease, devices, procedures, treatments etc.) and outcomes. Standard terminology will be used to ensure the “semantic” interoperability.
- Address ethical, legal and privacy issue to ensure the data collection establishing a legal structure to ensure legal agreements between all partners involved (related to use of data, IP, confidentiality, etc.).
- Define the Registry governance to clarify the rules and procedures to access and manage the Registry.
- Develop the sustainability strategy to secure future funding for data acquisition and management at the end of this project.

Different stakeholders including EURACAN members; rare cancer patients; researchers (including all disease-based collaborative groups for clinical and translational research on rare adult solid cancers); scientific societies will be informed and engaged in setting up and, more important, fully use the Registry also after the end of this project.

<sup>1</sup> [https://webgate.ec.europa.eu/chafea\\_pdb/health/projects/847174/summary](https://webgate.ec.europa.eu/chafea_pdb/health/projects/847174/summary)

<sup>2</sup> [https://webgate.ec.europa.eu/chafea\\_pdb/health/projects/947604/summary](https://webgate.ec.europa.eu/chafea_pdb/health/projects/947604/summary)



## Chapter 5 – JOIN THE MOVE

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It is a network of protected areas covering Europe's most valuable and threatened species and habitats. It is the largest coordinated network of protected areas in the world, extending across all 28 EU countries, both on land and at sea. The sites within Natura 2000 are designated under the Birds and the Habitats Directives. Natura 2000 sites are therefore considered as the contribution from EU Member States to the Pan-European Emerald Network of the Bern Convention. The two networks are fully compatible and use the same methodology and information tools. Whereas Natura 2000 applies to the EU Member States, Emerald applies to the rest of Europe. The European database of Natura 2000 sites consists of a compilation of the data submitted by the Member States of the European Union. This European database is generally updated once a year to take into account any updating of national databases by Member States. However, the release of a new EU-wide database does not necessarily mean that a particular national dataset has recently been updated.

The descriptive data in the European database are based on the information that national authorities have submitted, for each of the Natura 2000 sites, through a site-specific standard data form (SDF). In addition to other site-specific information, the standard data form provides the list of all species and habitat types for which a site is officially designated. The spatial data (outlining the boundaries of sites) submitted by each Member State are validated by the European Environment Agency (EEA).

Clean energy [The EU Strategy on Green Infrastructure](#)

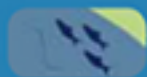
Quality of life: [Best practices from CHAFEA portal](#)



## Potential components of a Green Infrastructure



Core areas of high biodiversity value which act as hubs for GI, such as protected areas like Natura 2000 sites



Core areas outside protected areas containing large healthy functioning ecosystems



Restored habitats that help reconnect or enhance existing natural areas, such as a restored reedbed or wild flower meadow



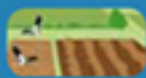
Natural features acting as wildlife corridors or stepping stones, like small watercourses, ponds, hedgerows, woodland strips



Artificial features that enhance ecosystem services or assist wildlife movement such as eco-ducts or eco-bridges, fish ladders or green roofs



Buffer zones that are managed sustainably and help improve the general ecological quality and permeability of the landscape to biodiversity, e.g. wildlife-friendly farming



Multi-functional zones where compatible land uses can join forces to create land management combinations that support multiple land uses in the same spatial area, e.g. food production and recreation



Attiva  
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## Chapter 6 – TO GO FURTHER

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### Clean Energy Article

This paper aims to analyse the sustainable and renewable energy utilization potential for the city of Izmir, Turkey, with the view of reduction of the overall carbon footprint

### An Innovative Farming Model for the Next Generation | Clara Coleman

No stranger to what makes farming successful, Clara Coleman has a clear plan for a new collaborative farming model that responds to today's particular challenges and embraces entrepreneurial diversification. She calls this the ARC Farming Project—Agrarian Resource

### Amartya Sen interview on Quality of life (in particular from time 14' and 45'')



## Chapter 7 - PRACTICAL ACTIVITIES

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Rusdela EU project toolkit and network for Agroecology

### Exercises

The RUSDELA – Rural Sustainable Development for Local Actors – is a EU co-funded project that aims to create a new methodology and knowledge-base about sustainability and rural development for decision makers of small rural communities in disadvantaged regions in Europe.

### A Guide to Biodiversity for the Private Sector

A guide designed to help companies operating in emerging markets better understand their relationship to biodiversity issues and how they can effectively manage those issues to improve business performance and benefit from biodiversity.

Resources and library from National Geographic:

[online catalogue course of National Geographic](#)



## Conclusion: This is a beginning - My action

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We've given you some advice; now it is time to turn this info into action... your action!  
Write here your own remarks:



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