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# Compilation of indexes by second generation of MPs (FINAL REPORT)

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# 1. Foreword

## THE INTERREG MED GREEN GROWTH COMMUNITY

The [Interreg MED Green Growth Community](#) (GG Community) builds upon the achievements of the first phase of the Horizontal Project “SYNGGI – Synergies for Green Growth Initiatives – Energising the Impact of Innovation in the Mediterranean” (2016-2019). The GG Community promotes green growth and the circular economy in the Euro-Mediterranean region. The GG Community gathers, under a common umbrella, 14 thematic projects – the so-called **Modular Projects** (MPs) and 3 capitalized ones<sup>1</sup> – the so-called **PLUS Modular Projects** – connecting 165 partners from 13 countries in the Mediterranean, addressing the same general objectives and tackling main topics of **food systems, eco-innovation, smart cities and waste management**. Among them, on 2020 the MPs ARISTOIL, GRASPINNO and PEFMED have been capitalized by the programme, hereafter “PLUS” projects, with the aim to transfer to new territories the know – how achieved during the previous projects (a specific section of this report will focus on their main results).



FIGURE 1 - GG COMMUNITY FOCUS AREAS

<sup>1</sup> For the PLUS projects see Chapter 5.



The GG Community supports the MPs in their knowledge sharing, communication and capitalisation efforts, thus increasing their visibility and impact at policy level and ensuring their potential transfer and replication of results in **the Mediterranean region and beyond** through the [Green Growth Capitalisation Platform \(GGCP\)](#). The activities of the GG Community are aligned to the current European policies and strategic agendas and support the efforts of the [UN Agenda 2030](#), the [EU Green Deal](#) and the [EU Circular Economy Action Plan](#) in developing a future-oriented regenerative growth model. The GG Community contributes to the vision of a greener, climate-neutral and more competitive Europe by applying an integrated and territorially based cooperation approach to support the sound management of natural resources, enhance cross-sectoral innovation and promote green jobs and social justice. The GG Community thereby informs European policy and governance, inspiring innovative, green and circular business models that support the EU's efforts, notably in terms of sustainable industry, energy efficiency and greener buildings and the [Farm to Fork strategy](#)'s vision of a healthy and sustainable EU food system.

The [Union for the Mediterranean \(UfM\)](#) labelled the GG Community in October 2019, thereby acknowledging its potential to advance cooperation in the transition to a green and circular economy and to deliver concrete benefits to the citizens of the Mediterranean region.

You can download [here](#) the GG Community brochure to learn more about its objectives or visit the Interreg MED GG Community [website](#) and the Interreg MED GG Community [Capitalisation Platform](#).

## WHY THE INTERREG MED GREEN GROWTH INDEXES

The objective of the [Interreg MED Green Growth Indexes \(GG Indexes\)](#) is to measure the impact of the MPs of the GG Community on three main aspects of green growth – environment, society and economy - in the Mediterranean area. “Green growth is about fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies”<sup>2</sup>. In the design of policies aimed at the promotion of green growth, indicators constitute an essential instrument to raise awareness, measure progress and identify potential opportunities and risks. The GG Indexes can be therefore used by the Interreg MED Programme and Public Authorities to assess the impact of the MPs on distinct aspects of green growth. Moreover, they can also help the general public to better understand how these projects can contribute and support the transition to a greener economy in the Mediterranean region.

The GG Indexes are based on indicators selected from existing dashboards and measures used by international actors ([OECD](#), [GGGI](#), [European Union](#), [World Bank](#), [UNEP](#), [European LIFE projects](#) etc.), and adapted to the

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<sup>2</sup> OECD, [Green Growth Indicators 2014](#)



thematic areas of the GG Community. In some cases, new indicators were created to accommodate the distinct characteristics of the MPs. The existing indicators have been applied to describe and/or measure an order of magnitude to a given condition, as well as to forecast trends. These aspects will be further addressed in the chore chapters 2 and 3 of the report.

## THE REPORT'S AIM AND STRUCTURE

The present report aims at presenting the impact of the GG Community's MPs in the field of green growth on the base of their response to the GG Indexes at programme and project level. In chapter 2, the report starts by giving a definition of green growth, out from recent publications of key international actors involved in the area of green growth. It continues by presenting an overview of the existing and most relevant GG Indexes at European and international level that have been taken into consideration by the GG Community. Chapter 3 explains how the GG Indexes have been built upon the existing literature, have been structured (Programme level vs Project level), represented online through the graphs on the GGCP. Chapter 4 presents the main results that the GG Indexes survey has produced in terms of measuring the MPs impact on green growth domains in the Mediterranean region. Chapter 5 describes the main results about the GG Indexes survey with a specific focus on the capitalized projects (ARISTOIL PLUS, GRASPINNO PLUS, and PEFMED PLUS) and their contribution to the overall results.

## 2. Scientific background/state-of-art about GG indexes in Europe and internationally

"Green growth" is a relatively new concept that links economic growth with environment impact recognizing the potential degradation of natural capital, climate change and social effects of an entirely liberalized economy. Many relevant organizations (e.g. UNEP, OECD, World Bank, GGGI, etc.) defined green growth eventually giving more relevance on specific interdependencies – but all focused on analysing possible ways of measuring performance in achieving sustainability targets. The Green Growth indexes measure how territories are working on a green environment to improve life from different perspectives in respect of given targets. It is important to raise awareness and knowledge around them, as only 25% of the 115 countries ranked in these indexes are close to reach their targets.

Green growth affects our lifestyle in so many ways that just one approach to the problem cannot be sufficient to raise our health condition. Therefore, all around the world, public and private organisations are working to



put pressure on governments to improve green growth policies each focusing on specific aspects that need to be improved.

In 2015, the United Nations set the Sustainable Development Goals known as UN 2030 Agenda as they need to be achieved before 2031. The SDG's is a collection of 17 global achievements in the areas of poverty, hunger, industry, economy, and education that need to be reached in a sustainable way to secure a better future to next generations.

European and international organizations are putting in place projects both to educate stakeholders and to sustain green growth initiatives, looking for new ways to categorise and implement our lifestyle and economy in line with the UN 2030 Agenda for a more sustainable perspective of development. These organizations have delivered interesting studies and measurement systems related to green growth and sustainability. Following is a list of most known and relevant organizations considered for our research.

## 2.1. The United Nations Environment Program (UNEP)

The United Nation Environment Program (UNEP) aims to help developing countries meet the 17 Sustainable Development Goals specifically on the environment protection perspective. In 2008, UNEP launched the Green Economy Initiative whose objective is to provide analysis and policy support to investments in green sectors. A huge amount of real-time data, platforms and reports has been collected as a key part of the initiative activities. The collected information has been analysed to define a set of indexes now available to support policy definitions and investments. The indicators defined can be divided into three main categories: environmental, policy, well-being and equity. Each category has a specific role in the overall green growth. The environmental indexes focus on resources and how to use them in a greener way (e.g., Recycling), policy indicators define those strategies that governments can implement to improve sustainable economy in their countries, well-being and equity give advice on the impact not only economic of policy choices.

## 2.2. The Food and Agriculture Organisation (FAO)

The Food and Agriculture Organisation of the United Nations (FAO) has the mission of improving technology in poor countries where agriculture is the key economic activity. From this perspective, FAO is also working alongside governments, universities, and associations to invest more and promote new projects to let all the countries reach the SDGs. In addition to a relevant volume of raw data collected, FAO is the custodian of 21 SDG indicators, most of them under SDG 2-Zero Hunger, the remaining under SDG 5-Gender equality, 6-Clean water and sanitation, 12-Responsible consumption and production, 14-Life below water, 15-Life on land.



## 2.3. The non-governmental Organisation for Economic Co-operation and Development (OECD)

The non-governmental Organization for Economic Co-operation and Development (OECD) started focusing on green growth in 2009 with the definition of a Green Growth Strategy to be submitted to governments for consideration. A first effort was set for the definition of indicators to classify and compare achievements among different countries and ultimately make green growth visible and measurable. The criteria used to identify these indicators were analytic soundness, measurability, and policy relevance.

OECD defined about 30 indicators, grouped into 4 categories:

- a) **Environmental and resource productivity:** to monitor the efficient use of natural capital, considering CO<sub>2</sub>, energy, material, water and multifactor productivity.
- b) **Natural asset base:** natural resources are important in human economy if used in the best way. It considers the index of natural, freshwater, forest, fish, mineral, land, soil and wildlife resources.
- c) **Environmental dimension of quality of life:** health problems, natural risks and sewage can influence human life and economics, therefore they need to be checked and avoided.
- d) **Economic opportunities and policy response:** the environment can also be a resource for a country's economic and social growth, and governments must encourage green innovation.

## 2.4. The Global Footprint Network

This organization, founded in 2003, has been engaging countries, cities and partners at global level, to drive high-impact policy and investment decisions by scientific insights. The Global Footprint Network investigates the human demand on nature, promoting an ecological approach supported by a framework of indicators and open data available on specific apps. They are characterized by a strong communication approach that presents in an easy way the complexity of the sustainability scenario. The initiative they are most known for is the Earth Overshoot Day: an annual campaign that marks out the day when humanity has exhausted nature's budget for an entire year. Last year was on 22nd of August.



## 2.5. The World Bank

The World Bank is a financial institution focused on countries' development, aiming to face poverty around the world. Their approach is based on a multi criteria analysis that should enable analysts identify trade-offs and synergies in order to present the right information to the decision makers. The cost/benefit indicators identified through this approach are grouped in three area: environmental, economic and social. Index as reduction of gas emission is classified in the environmental area, while build more wind turbine is an economic index due to his importance in the economic trade of a country. The social category refers to those actions - like the creations of jobs - that improve human life.

## 2.6. The Green Growth Knowledge Platform (GGKP)

The Green Growth Institute, UNEP, OECD and World Bank are using the Green Growth Knowledge Platform (GGKP) to work together in order to find green growth indicators that can help the public to understand of how to move to a green economy. In 2013, they published a list indicators divided per categories, mostly based on OECD one:

- a) **Natural asset base:** to identify the potential threats of an unwarranted natural asset or degradation to minimise the risks of unsustainable developments in growth. Some of these indicators are the volume of forests, available reserves of minerals and volume and quality of renewable resources.
- b) **Environmental and Resource Productivity/Intensity:** to measure if growth or output and consumption can be achieved with fewer natural resources input. Energy consumption per capita, water productivity and waste collection are some of these type of indicators.
- c) **The Environmental Quality of Life:** unsustainable development patterns can cause and be affected by degraded environmental quality and environmental conditions that impact people's health and wellbeing. In this category can be found indicators such as population exposure to harmful levels of air pollution and quality of the drinking water.
- d) **Policies and Economic Opportunities:** to identify synergies and trade-offs among different policy objectives and green and growth goals. These indicators concern employment (green job training), policy instruments (fossil fuel taxation, energy pricing) and international cooperation.

- e) **The Socio-Economic Context:** to guide the choice and design of adequate green growth policies. These indicators can also be used to track social and economic outcomes and highlight transitional developments that require policy action.

## 2.7. The European Union

The European Union is committed on green growth since 2001 when first was set the European Development Strategy (EDS). In fact, EDS and its updates (2006, 2009) were the major input to the UN 2030 Agenda. The strategy was supported by a relevant number of indicators grouped in 10 thematic areas. The indicators relevant to green growth are mainly listed in three themes: Sustainable consumption and production, Climate change and energy, Natural resources. The climate change and energy theme indicators have been improved inside the Europe 2020 strategy – an update of the Development Strategy published in 2010 for the coming 10 years.

A program more focused on sustainability is defined in the Roadmap to a Resource Efficient Europe (REE) set up in 2011 with a horizon to 2050. The REE measurement system is defined in the Resource Efficiency Scoreboard that compounds of program tracking indicators along with content specific indexes (Materials, Land, Water, Biodiversity, Circular Economy, Efficient buildings, Mobility).

A list of useful indicators cannot be totally separated by the underlining data collection and the tools in support of indexes performance monitoring.

European Commission is promoting a variety of tools in support of resource-efficient, green and competitive low-carbon economy. Is worth to mention the following:

- Environmental Technology Verification (ETV)
- EU Eco-labelling
- Product Environment Footprint and Organization Environment Footprint (PEF & OEF)
- EU Eco-Management and Audit Scheme (EMAS)
- Green Public Procurement (GPP)

In addition to previous overarching initiatives, some specific programs have relevance for a comprehensive list of elements affecting sustainability and green growth indexes.



## 2.8. The LIFE Funding Program

The LIFE program is an EU funding instrument instituted in 1992 to encourage environment and climate actions. Each project of the LIFE program is monitored on the real improvement obtained by the project through a set of indicators specific of the intervention area PLUS a list of general indicators. The set of indicators is divided into categories as below.

- a) **Improved environmental and climate performance:** focusing on emissions and air quality, reduce waste and improve water quality.
- b) **Better use of natural resources:** focusing on water and raw materials, including use of renewable energy sources.
- c) **Sustainable land use, agriculture and forestry:** to have a more efficient land due to a sustainable agriculture and reforested areas.
- d) **Improved nature, species, and biodiversity:** protecting habitats and species to avoid extinction while limiting the number of alien species.
- e) **Economic performance, market uptake and replication:** try to improve occupation in a more efficient way, sizing markets in relation of the consumers and reducing costs per unit.
- f) **Communication, dissemination, awareness rising:** improve communication through better websites and information to have a behavioural change in society.

## 2.9. The European Tourism Indicator System (ETIS)

Given the growing economic relevance and environment impact of tourism, the European Union is placing special focus on supporting ecological tourism through the implementation of a European Tourism Indicator System (ETIS). This is composed by 27 core indicators and 40 optional ones, which can be used to measure and monitor the sustainable tourism performance. These indicators are divided into 4 categories: destination management, social and cultural impact, economic value and environmental impact. In addition to the index system, UE gives a how-to-improve guide for tourism workers to help them achieve those indicators while improving the experience they offer.

### 3. The Indexes of the Interreg MED Green Growth Community

As it has been extensively enlightened in Chapter 2, the complexity of green growth requires a wide range of monitoring tools and distinct Green Growth Indexes have been developed by several organisations. *The Green Growth Excellence Group*<sup>3</sup> selected relevant indexes from the existing indicators presented in the previous chapter and adapted them to the thematic of Interreg MED Green Growth Community. In some cases, new indicators were created to accommodate to the distinct characteristics of the MPs. The Interreg MED Green Growth Community Indexes (GG Indexes) are composed of both **Programme level indicators** and **Project level indicators** and their nature and structure are presented in this chapter.

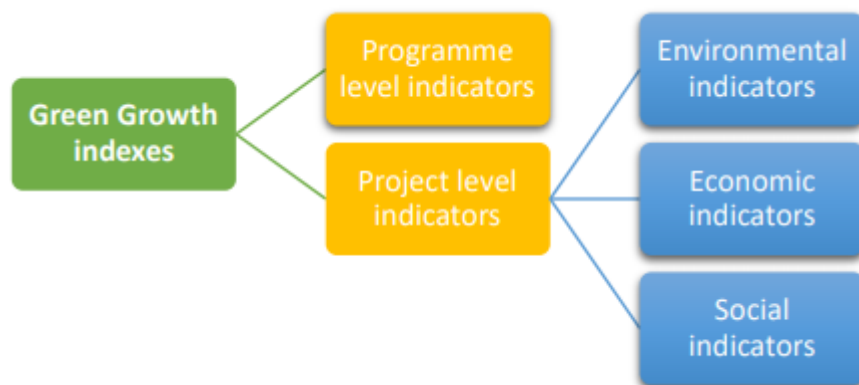


FIGURE 2 - THE TWO LEVELS OF THE GG INDEXES

<sup>3</sup> The Green Growth Excellence Group was a technical working group in force during the former project SYNGGI, whose aim was to define and implement the GG indexes, as well as starting the collection of the MPs' data. This group was composed by qualified representatives of three project partners (UVic, Ecosistemi and CUEIM) and it is not in force during the second phase of the Green Growth Community.

## PROGRAMME LEVEL INDICATORS

The GG Indexes include a set of indicators at the Interreg MED **programme level** that focus on general issues and provide **qualitative information** about the MPs' characteristics, actions and areas on which they are working on. The Programme level indicators are:

- **Basic information on the Modular Project:**
  - Acronym Modular Project
  - Type of project (M1 study, M2 test , M3 capitalization)
  - Duration of the project (months)
  - Number of partners (including associate partners)
  - Budget (in €)
- **Countries involved in the project:**
  - Albania
  - Bosnia and Herzegovina
  - Cyprus
  - Croatia
  - France
  - Germany
  - Greece
  - Italy
  - Portugal
  - Slovenia
  - Spain
- **Economic activities targeted:**
  - Agriculture, forestry and fishing
  - Transportation and storage
  - Mining and quarrying
  - Information and communication
  - Manufacturing
  - Human health and social work activities
  - Services activities
  - Construction
  - Professional, scientific and technical activities
  - Wholesale and retail trade
  - Administrative and support service activities



- Accommodation, food service and tourism
- Education
- NGO's
- **Environmental sectors targeted:**
  - Protection of ambient air and climate
  - Waste water management
  - Waste management
  - Protection and remediation of soil, groundwater and surface water
  - Noise and vibration abatement
  - Protection of biodiversity and landscapes
  - Protection against radiation
  - Use and management of inland waters
  - Use and management of natural forest resources
  - Use and management of wild flora and fauna
  - Production of energy from renewable resources
  - Heat and energy saving and management
  - Minimization of the use of fossil energy as raw materials
  - Management of minerals
  - Research and development activities
  - Other environmental protection activities
- **Environmental tools used to promote Green Growth:**
  - Market-based instruments and fiscal (consumption side)
  - Market-based instruments and fiscal (production side)
  - Cooperative agreements
  - Information disclosure
  - Regulations
  - Environmental management
- **Types of actions:**
  - Development of clusters and networks
  - Development of models and tools
  - Transfer of knowledge
  - Awareness-raising
  - Capitalisation activities
  - Training and changing practices
  - Elaborating policy plans



- Pilot projects
- Others (specify)
- **Investments priorities of the InterregMed Programme:**
  - Promoting business investment in R&I
  - Developing links and synergies between enterprises, research and development centres and the higher education sector
  - Promoting investment in product and service development
  - Technology transfer
  - Social innovation
  - Eco-innovation
  - Public service applications
  - Demand stimulation
  - Networking
  - Clusters and open innovation through smart specialisation, and supporting technological and applied research
  - Pilot lines
  - Early product validation actions
  - Advanced manufacturing capabilities and first production
- **Stakeholders engagement:**
  - Public institutions: National / Regional / Local
  - Networks: PA's networks / Scientific networks / Thematic networks
  - Decision makers/Policy makers: EU level / National level / Regional level / Local level
  - End-users/Target groups: Large enterprises / SMEs / Trade associations / Clusters / Research & University Institutions / Public Authorities / Citizens / NGOs

## PROJECT LEVEL INDICATORS

A more specific set of **Project level indicators** focus on the potential areas of contribution of the MPs to green growth and impact on green growth promotion. These indicators are classified into three main categories: **environment, economy and society**. These three pillars have been further divided in **sub-categories**, until the definition of single, **specific aspects**. The Project level indicators described in this paragraph, are developed on the basis of the **OECD and GGGI indicators** mainly, which have been readapted **to accommodate** the respective **characteristics, types of actions, necessities and priorities of the MPs**. Those latter aspects of the MPs are conveyed by the aggregate results of the Programme level indicators and accessible by consulting the MPs' materials available on the [GGCP](#) as well as the projects respective websites. Diverse literature sources from the





most relevant organizations, institutions and initiatives active in the field of green growth and promoting sustainable development have been taken into account to explain the list of indicators in this chapter. The selection of information and data has been guided by the aim and necessity to describe in what aspects/thematics of green growth the MPs of the GG Community can better impact.

#### A) ENVIRONMENT INDICATORS

They monitor the MPs' contribution to environmental sustainability aspects and to the adoption of tools and technologies for sustainable production and consumption.

#### ENVIRONMENTAL SUSTAINABILITY

The indicators under this category measure the MPs' contribution to different aspects of environmental sustainability including the efficient use and management of natural resources, climate change, energy management, and waste prevention.

In 1987, the World Commission on Environment and Development (WCED), also known as Brundtland Commission, defined sustainable development as *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*<sup>4</sup> A key element in this definition is the integration of economic development with the environment and social dimension. It was stated that, the two terms, "environment", since then perceived as a sphere separate from human emotion or action, and "development", a term habitually used to describe political goals or economic progress, were more likely to be interpreted and understood in relation to each other.<sup>5</sup>

In 2001, responding to the global call to draw up strategies for sustainable development in time for the 2002 World Summit on Sustainable Development, the EU adopted its own strategy together with the other signatories of the 1992 United Nations' "Rio declaration on Environment and Development".<sup>6</sup> The EU Development Strategy was revised in 2006, when it adopted a **long-term vision for sustainability in which economic growth, social cohesion and environmental protection were seen to go hand in hand and mutually supporting each other.**<sup>7</sup> In 2009, sustainable development formally became one of the EU's long-term goals under Article 3(3) of the

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<sup>4</sup>[https://eurlex.europa.eu/summary/glossary/sustainable\\_development.html#:~:text=SUSTAINABLE%20DEVELOPMENT,to%20meet%20their%20own%20needs](https://eurlex.europa.eu/summary/glossary/sustainable_development.html#:~:text=SUSTAINABLE%20DEVELOPMENT,to%20meet%20their%20own%20needs)'.

<sup>5</sup> [https://en.wikipedia.org/wiki/Brundtland\\_Commission](https://en.wikipedia.org/wiki/Brundtland_Commission)

<sup>6</sup> <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52001DC0264:EN:HTML>

<sup>7</sup> Ibidem

Treaty on European Union.<sup>8</sup> The EU Development Strategy set overall objectives and concrete actions for seven key priority challenges for the period until 2010, many of which are predominantly environmental (including climate change and clean energy, sustainable transport, sustainable consumption & production, or the conservation and management of natural resources).<sup>9</sup> In 2010, the EU adopted the EU 2020 Strategy, which laid the foundations for a more sustainable future built on smart, sustainable and inclusive growth. The recent **EU Green Deal**, poses at its heart **climate neutrality by 2050**, and introduces new legislation on the **circular economy, building renovation, biodiversity, farming and innovation** in line with the UN 2030 Agenda on Sustainable Development Goals.

### 1. Use of natural resources:

#### - Reduced use of raw materials

The use of raw materials from natural resources and the related production and consumption processes have environmental, economic and social consequences, in countries experiencing high economic growth and beyond their borders.<sup>10</sup> Many international organisations, such as the EU and the OECD, stress the importance of the reduction in the use of raw materials, through the implementation of “recycle, reduce and reuse” policies. Among current initiatives at EU level, it can be mentioned [Horizon 2020](#) Programme that funds research and innovation projects on raw materials to help the development of European resource efficient and circular economies, and the [European Innovation Partnership on Raw Materials](#) providing high-level guidance to the European Commission, EU countries and private actors on innovative approaches to the challenges related to raw materials.

Indicators and sources on reduced use of raw materials that have been taken into consideration for the Interreg MED Green Growth Indexes (GG Indexes) are the following:

OECD: [“Material consumption” indicator](#)

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<sup>8</sup> “The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.”

<sup>9</sup> <https://ec.europa.eu/environment/eussd/#:~:text=The%20strategy%20set%20overall%20objectives,Sustainable%20consumption%20%26%20production>

<sup>10</sup> <http://www.oecd.org/environment/environment-at-a-glance/Circular-economy-waste-and-materials-May-2020.pdf>

“Domestic material consumption (DMC) refers to the amount of materials (in terms of weight) used in an economy, i.e. materials extracted or harvested in the country, PLUS materials and products imported, minus material and products exported. The data refer to metals, non-metallic minerals (construction minerals, industrial minerals), biomass (wood, food) and fossil energy carriers.”

**SDGs:** Sustainable waste and materials management is part of the UN 2030 Agenda for Sustainable Development under [Goal 8](#) “Promote inclusive and sustainable economic growth, employment and decent work for all”, [Goal 12](#) “Ensure sustainable consumption and production patterns” and [Goal 14](#) “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”.

**EU (Eurostat):** Eurostat provides circular economy indicators that are divided into 4 thematic areas: 1. Production and consumption; 2. Waste management; 3. Secondary raw materials; 4. Competitiveness and innovation

**GGGI:** under the dimension “Efficient and sustainable resource use” the institute developed the indicator category “Material use efficiency” and the specific indicator “ME2 Total material footprint (MF) per capita (Tons per capita)”. “Material use efficiency refers to delivering more services or products per unit of raw material used and reducing material demand through increased recycling, longer-lasting products, and component re-use, among others (Allwood, Ashby, Gutowski, & Worrell, 2011; Lifset & Eckelman, 2013).”<sup>11</sup>

#### - **Reduced water consumption**

“Freshwater resources are of major environmental and economic importance. Their distribution varies widely among and within countries. In arid regions, freshwater resources may at times be limited to the extent that demand for water can be met only by going beyond sustainable use in terms of quantity.”

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** [“Water withdrawals” indicator](#)

“Water withdrawals, or water abstractions, are defined as freshwater taken from ground or surface water sources, either permanently or temporarily, and conveyed to a place of use. If the water is returned to a surface water source, abstraction of the same water by the downstream user is counted again in compiling total abstractions: this may lead to double counting. The data include abstractions for public water supply, irrigation, industrial processes and cooling of electric power plants. Mine water and drainage water are included, whereas

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<sup>11</sup> P. 3 <https://greengrowthindex.gggi.org/wp-content/uploads/2021/01/2020-Green-Growth-Index.pdf>



water used for hydroelectricity generation is normally excluded. This indicator is measured in m<sup>3</sup> per capita (a cubic meter is the equivalent of one thousand 1 litre bottles)."

**SDGs:** [Goal 6](#) Ensure access to water and sanitation for all

**GGGI:** under the dimension "Efficient and sustainable resource use" the institute developed the indicator category "Efficient and sustainable water use" and the specific indicator "EW1 Water use efficiency (USD per m<sup>3</sup>)". "Efficient and sustainable water use refers to delivering more services or products per unit of water used, reducing environmental impact resulting from water scarcity and pollution, and improving water allocation among competing uses (UNEP, 2014; Wang, Yang, Deng, & Lan, 2015)."

**EU (Eurostat):** "Water exploitation index": "It is used to monitor progress towards a resource efficient Europe, complementing the lead indicator on the area of water. Monitoring the efficiency of water use by different economic sectors at national, regional and local level is important for ensuring that rates of extraction are sustainable over the long term."

#### - **Conservation of soil resources**

OECD defines soil conservation as the protection of soil from erosion and other types of deterioration, so as to maintain soil fertility and productivity. It generally includes watershed management and water use.

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** ["Land cover change" indicator](#)

"Loss of natural and semi-natural vegetated land is presented as a proxy for pressures on biodiversity and ecosystems. This includes tree cover, grassland, wetland, shrubland and sparse vegetation converted to any other land cover type. Gains of natural and semi-natural vegetated land are conversions in the opposite direction. The denominator used is the 'stock' of natural and semi-natural land at the start of the period."

**GGGI:** under the dimension "Efficient and sustainable resource use" the institute developed the indicator category "Sustainable land use" and the specific indicator "SL2 Share of organic agriculture to total agricultural land area (Percent)"; under the dimension "Natural capital protection" the institute developed the indicator category "Cultural and social value" and the specific indicator "Share of terrestrial and marine protected areas to total territorial areas (Percent)."



#### - Increased biodiversity protection

“Biodiversity is fundamental to sustaining life, supplying critical ecosystem services such as food provisioning, water purification, flood and drought control, nutrient cycling, and climate regulation. These services are essential to support human well-being and economic growth. Yet despite the significant economic, social and cultural values of biodiversity and ecosystem services, biodiversity worldwide is being lost, and in some areas at an accelerating rate.”<sup>12</sup>

The indicators taken into account for the purposes of the GG Indexes are the following:

##### OECD: [“Threatened species” indicator](#)

“Number of threatened mammal species expressed as percentage of total known species. The threatened category refers to critically endangered, endangered and vulnerable species, that is those plants and animals that are in danger of extinction or likely soon to be (for further information, see the IUCN Red List Categories and Criteria: Version 3.1, Second edition). Data refer to 2015 or latest available data.”

[GGGI](#): under the dimension “Natural capital protection” the institute developed the indicator category “Biodiversity and ecosystem protection” and the specific indicators “BE1 Average proportion of key biodiversity areas covered by protected areas (Percent)”, “BE2 Share of forest area to total land area (Percent)”, “BE3 Above-ground biomass stock in forest (Tons per hectare).”

#### - Reduction of the use of chemicals

FAO observes that “Chemicals are used in every facet of life and are present in a bewildering range of products and applications. Growing knowledge of the wide distribution and impact of chemicals in the environment and the human body has underscored the need for their regulatory control and careful management. Agricultural pesticides are an important subset of chemicals and pose specific challenges.”<sup>13</sup>

The indicators taken into account for the purposes of the GG Indexes are the following:

[GGGI](#): “Biodiversity and ecosystem protection refers to the protection of species, habitats, and ecosystems as well as the services they provide, with protected areas as an important measure to achieve biodiversity conservation (UNEP-WCMC & IUCN, 2016; IPBES, 2018).”

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<sup>12</sup> <http://www.oecd.org/env/resources/OECD-work-on-biodiversity-and-ecosystems.pdf>

<sup>13</sup> <http://www.fao.org/3/ai551e/ai551e00.htm>

LIFE: indicator number 5. Environment and health (including chemicals and noise) and sub-indicators number

## 2. Climate change and energy:

### - Reduced CO2 emissions

#### OECD:

“Progress towards green growth can be assessed against trends in CO2 emission productivity from production and demand perspectives, and the level of decoupling achieved between CO2 and other GHG emissions and economic growth.”

- **Production-based CO2 productivity**, i.e. GDP generated per unit of CO2 emitted in production. Production-based emissions refer to gross direct CO2 emissions from fossil fuel combustion, emitted within the national territory and excluding bunkers, sinks and indirect effects.
- **Demand-based CO2 productivity**, i.e. real national income per unit of CO2 emitted. Demand based emissions are production-based emissions PLUS emissions embodied in imports minus emissions embodied in exports. They reflect the CO2 emitted during the various stages of production of the goods and services consumed in domestic final demand, irrespective of where the various stages of production occurred. Since reductions in national emissions can be achieved by offshoring domestic production and thus the related emissions, evidence of decoupling gained from production based measures may reveal only part of the story.

The indicators taken into account for the purposes of the GG Indexes are the following:

#### OECD: “Air and GHG emissions” indicator

“Greenhouse gases refer to the sum of seven gases that have direct effects on climate change: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3). The data are expressed in CO2 equivalents and refer to gross direct emissions from human activities. CO2 refers to gross direct emissions from fuel combustion only and data are provided by the International Energy Agency. Other air emissions include emissions of sulphur oxides (SOx) and nitrogen oxides (NOx) given as quantities of SO2 and NO2, emissions of carbon monoxide (CO), and emissions of volatile organic compounds (VOC), excluding methane. Air and greenhouse gas emissions are measured in thousand tonnes, tonnes per capita or kilogrammes per capita except for CO2, which is measured in million tonnes and tonnes per capita.”

GGGI: under the dimension “Natural capital dimension” the institute developed the indicator category “Environmental quality” and the specific indicator “EQ1 PM2.5 air pollution, mean annual population-weighted



exposure (Micrograms per m<sup>3</sup>); and the indicator category “Greenhouse gas emissions reductions” and the specific indicators “GE1 Ratio of CO<sub>2</sub> emissions to population, including AFOLU (Tons per capita)”, “GE2 Ratio of non-CO<sub>2</sub> emissions to population, excluding AFOLU (CO<sub>2</sub>e per capita)”, “GE3 Ratio of non-CO<sub>2</sub> emissions in agriculture to population (CO<sub>2</sub>eq tons per capita).”

- **Reduced energy consumption**

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** [“Electricity generation” indicator](#)

“Electricity generation is defined as electricity generated from fossil fuels, nuclear power plants, hydro power plants (excluding pumped storage), geothermal systems, solar panels, biofuels, wind, etc. It includes electricity produced in electricity-only plants and in combined heat and power plants. Both main activity producer and autoproducer plants are included, where data are available. Main activity producers generate electricity for sale to third parties as their primary activity. Autoproducers generate electricity wholly or partly for their own use as an activity supporting their primary activity. Both types of plants may be privately or publicly owned. This indicator is measured in gigawatt hours and in percentage of total energy generation.”

- **Use of energy from renewable sources**

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** [“Renewable energy” indicator](#)

“Renewable energy is defined as the contribution of renewables to total primary energy supply (TPES). Renewables include the primary energy equivalent of hydro (excluding pumped storage), geothermal, solar, wind, tide and wave sources. Energy derived from solid biofuels, biogasoline, biodiesels, other liquid biofuels, biogases and the renewable fraction of municipal waste are also included. Biofuels are defined as fuels derived directly or indirectly from biomass (material obtained from living or recently living organisms). This includes wood, vegetal waste (including wood waste and crops used for energy production), ethanol, animal materials/wastes and sulphite lyes. Municipal waste comprises wastes produced by the residential, commercial and public service sectors that are collected by local authorities for disposal in a central location for the production of heat and/or power. This indicator is measured in thousand toe (tonne of oil equivalent) as well as in percentage of total primary energy supply.”



GGGI: under the dimension “Efficient and sustainable resource use” the institute developed the indicator category “Efficient and sustainable energy” and the specific indicator “EE2 Share of renewable to total final energy consumption (Percent)”.

### 3. Waste prevention and management:

#### - Reduced waste production

Preventing products and materials from becoming waste for as long as possible and turning waste that cannot be avoided into a resource are key steps to achieve a greener, more circular economy.<sup>14</sup>

The indicators taken into account for the purposes of the GG Indexes are the following:

GGGI: under the dimension “Natural capital protection” the institute developed the indicator category “Environmental quality” and the specific indicator “EQ3 Municipal solid waste (MSW) generation per capita (Tons per year per capita)”.

#### OECD: “Municipal waste” indicator

“Municipal waste is defined as waste collected and treated by or for municipalities. It covers waste from households, including bulky waste, similar waste from commerce and trade, office buildings, institutions and small businesses, as well as yard and garden waste, street sweepings, the contents of litter containers, and market cleansing waste if managed as household waste. The definition excludes waste from municipal sewage networks and treatment, as well as waste from construction and demolition activities. This indicator is measured in thousand tonnes and in kilograms per capita.”

#### - Increased separate collection

The European Environment Agency defines separate collection “the collection of individual components of solid waste from any source, usually separated into different collection containers, in order to recover, reuse or recycle the material or to facilitate its collection and disposal.”

The indicators taken into account for the purposes of the GG Indexes are the following:

#### OECD: “Municipal waste” indicator

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<sup>14</sup> [https://ec.europa.eu/environment/green-growth/waste-prevention-and-management/index\\_en.htm](https://ec.europa.eu/environment/green-growth/waste-prevention-and-management/index_en.htm)



“Municipal waste is defined as waste collected and treated by or for municipalities. It covers waste from households, including bulky waste, similar waste from commerce and trade, office buildings, institutions and small businesses, as well as yard and garden waste, street sweepings, the contents of litter containers, and market cleansing waste if managed as household waste. The definition excludes waste from municipal sewage networks and treatment, as well as waste from construction and demolition activities. This indicator is measured in thousand tonnes and in kilograms per capita.”

GGGI: under the dimension “Natural capital protection” the institute developed the indicator category “Environmental quality” and the specific indicator “EQ3 Municipal solid waste (MSW) generation per capita (Tons per year per capita)”.

- **Recycling rates**

The recycling rate is one of the most widely used indicators for monitoring progress in waste recycling and resource-saving activities.

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** [“Material productivity” indicator](#)

“Material productivity is expressed as the amount of economic output generated (in terms of GDP) per unit of materials consumed (in terms of DMC). This indicator is measured in USD constant prices using 2010 base year and Purchasing Power Parities (PPPs).”

## **ADOPTION OF TOOLS FOR SUSTAINABLE PRODUCTION AND CONSUMPTION**

These indicators estimate the MPs’ impact on the adoption of different tools such as environmental technologies, product certification, environmental management, and green public procurement.

### **4. Environmental Technologies:**

- **ETV promotion (Environmental Technology Verification)**

ETV is a new tool to help innovative environmental technologies reach the market. Claims about the performance of innovative environmental technologies can be verified by qualified third parties called “Verification Bodies”. The “Statement of Verification” delivered at the end of the ETV process can be used as evidence that the claims made about the innovation are both credible and scientifically sound. With proof of performance credibly assured, innovations can expect an easier market access and/or a larger market share and the technological risk is reduced for technology purchasers.

More information: [http://ec.europa.eu/environment/ecoap/etv/verifiedtechnologies\\_en](http://ec.europa.eu/environment/ecoap/etv/verifiedtechnologies_en)

#### 5. Certification of products:

- **PEF (Product Environmental Footprint) promotion / OEF (Organization Environmental Footprint) promotion**

A company wishing to market its product as environmentally friendly in several Member State markets faces a confusing range of choices of methods and initiatives. Sometimes they have to use different ones for different markets. This results in costs for companies and confusion for consumers. The European Commission proposes the Product Environmental Footprint and Organization Environmental Footprint methods as a common way of measuring environmental performance.

More information: <http://ec.europa.eu/environment/eussd/smgp/index.htm>

“The Product Environmental Footprint (PEF) is a multi-criteria measure of the environmental performance of a good or service throughout its life cycle. PEF information is produced for the overarching purpose of seeking to reduce the environmental impacts of goods and services taking into account supply chain<sup>1</sup> activities (from extraction of raw materials, through production and use, to final waste management). This PEF Guide provides a method for modelling the environmental impacts of the flows of material/energy and the emissions and waste streams associated with a product throughout its life cycle.”<sup>15</sup>

“The Organisation Environmental Footprint (OEF) is a multi-criteria measure of the environmental performance of a goods/services-providing Organisation from a life cycle perspective. OEF studies are produced for the overarching purpose of seeking to reduce the environmental impacts associated with organisational activities, taking into account supply chain<sup>1</sup> activities (from extraction of raw materials, through production and use, to final waste management). The Organisations involved include companies, public administrative entities, non-profit organisations and other bodies. OEFs are complimentary to other instruments that focus on specific sites and thresholds.”<sup>16</sup>

- **Ecolabel promotion**

The functioning of the EU Ecolabel is set through a Regulation of the European Parliament and of the Council. Its daily management is carried out by the European Commission together with bodies from the Member States

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<sup>15</sup> <https://ec.europa.eu/environment/archives/eussd/pdf/footprint/PEF%20methodology%20final%20draft.pdf>

<sup>16</sup> [https://ec.europa.eu/environment/archives/eussd/pdf/footprint/OEF%20Guide\\_final\\_July%202012\\_clean%20version.pdf](https://ec.europa.eu/environment/archives/eussd/pdf/footprint/OEF%20Guide_final_July%202012_clean%20version.pdf)

and other stakeholders. The EU Ecolabel is a voluntary scheme, which means that producers, importers and retailers can choose to apply for the label for their products. The life cycle of a product begins with extraction – the mining or cultivation of the raw materials, such as cotton (for textiles) or wood (for paper products). It continues with manufacturing and packaging, distribution, use and finally the “end of life” stage, when the product is disposed of or recycled. When developing EU Ecolabel criteria for products, the focus is on the stages where the product has the highest environmental impact, and this differs from product to product. In addition, product-specific criteria ensure that any product bearing the EU Ecolabel is of good quality with high performance.

More information: <http://ec.europa.eu/environment/ecolabel/eu-ecolabel-forbusinesses.html>

#### **6. Environmental Management:**

##### **- Promotion of EMAS registration**

The Eco-Management and Audit Scheme, EMAS is a premium management instrument developed by the European Commission for companies and other organisations to evaluate, report, and improve their environmental performance. EMAS is open to every type of organisation eager to improve its environmental performance. It spans all economic and service sectors and is applicable worldwide.

More information: [http://ec.europa.eu/environment/emas/index\\_en.htm](http://ec.europa.eu/environment/emas/index_en.htm)

#### **7. Green Public Procurement:**

##### **- GPP promotion and implementation**

GPP is the most powerful tool that public authorities have at their disposal to change their consumption modes and to influence at the same time the demand side, by stimulating the uptake of environmental technologies and eco-innovative practices by enterprises. Public authorities that adopt GPP use their purchasing power to choose “green” goods, services and works, by including environmental criteria into their procurement procedures.

More information: [http://ec.europa.eu/environment/gpp/index\\_en.htm](http://ec.europa.eu/environment/gpp/index_en.htm)

#### **B) ECONOMY INDICATORS**

They monitor the creation of new green jobs and innovative business activities fostered in the framework of the MPs.

#### **GREEN JOBS AND INNOVATION ACTIVITIES**



The transition towards green growth brings the possibility to reshape the labour market, create new employment opportunities and innovative business initiatives. The UN 2030 Agenda for Sustainable Development under Goal 8 recognises the encouragement of entrepreneurship and job creation as key elements for the promotion of sustainable economic growth, higher levels of productivity and technological innovation. The GG Community's MPs, with their actions and activities, have the potential to contribute to this trend. The level of their contribution has been measured through the following list of indicators.

#### 8. Job creation

- **New jobs**
- **Adaption of workers skills**

The creation of new jobs by green projects and initiatives has been measured by several organisations including the [OECD](#), [International Labour Organisation \(ILO\)](#) and the [World Bank](#). GG Indexes "New Jobs" and "Adaption of workers skills" took inspiration mainly from the **LIFE Program Indicator number 13 Jobs**. New jobs are intended as "the number of fully employed persons throughout a year in a way that makes employments comparable even though some work less and others work more hours over that period."<sup>17</sup>

#### 9. New activities and innovation

- **New businesses**

New businesses can give an important contribution to green growth by adopting greener management approaches and new business models, developing and using new technologies, carrying out research and development (R&D) and spurring innovation.

The indicators taken into account for the purposes of the GG Indexes are the following:

##### **OECD: ["Starting a business" indicator](#)**

"This indicator covers two factors which are important when starting a business: Financial account holders : This indicator is the number of men (women) aged 15+ who report having an account (by themselves or together with someone else) at a bank or another type of financial institution, or report having personally used a mobile money service in the past 12 months, divided by the total number of men (women) aged 15+. Borrowing : This indicator is the number of men (women) aged 15+ who report borrowing money to start a business over the last

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<sup>17</sup> [https://ec.europa.eu/environment/archives/life/toolkit/pmttools/life2014\\_2020/documents/160215\\_LIFEproject\\_level\\_outcome\\_indicators.pdf](https://ec.europa.eu/environment/archives/life/toolkit/pmttools/life2014_2020/documents/160215_LIFEproject_level_outcome_indicators.pdf)



12 months, divided by the total number of men (women) aged 15+ in this sex. This indicator is measured by gender in percentage of total employed men or women.”

- **New products/services**

The creation of new products and services can positively contribute in advancing a green and circular economy.

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD: [“Starting a business” indicator](#)**

“This indicator covers two factors which are important when starting a business: Financial account holders : This indicator is the number of men (women) aged 15+ who report having an account (by themselves or together with someone else) at a bank or another type of financial institution, or report having personally used a mobile money service in the past 12 months, divided by the total number of men (women) aged 15+. Borrowing : This indicator is the number of men (women) aged 15+ who report borrowing money to start a business over the last 12 months, divided by the total number of men (women) aged 15+ in this sex. This indicator is measured by gender in percentage of total employed men or women.”

[GGGI](#): under the dimension “Green economic opportunities” the institute developed the indicator category “Green innovation” and the specific indicator “GN1 Share of patent publications in environmental technology to total patents (7 yrs moving ave.) “

- **Replication / transfer**

Replication and transfer of innovative project results and tools is key to broadening the scope of local and regional initiatives in the area of green and circular economy.

- **Pilot lines**

Pilot lines are pre-commercial production lines that produces small volumes of new technology-based products, or employs new production technology that could be transformed in commercialized new products.

- **Early product validation actions**

The early validation of new products is part of the process that enable the introduction in the market of new or improved products, services, processes and solutions.



- **Clusters and open innovation through smart specialisation, and supporting technological and applied research**

**OECD: [“Triadic patent families” indicator](#)**

“A triadic patent family is defined as a set of patents registered in various countries (i.e. patent offices) to protect the same invention. Triadic patent families are a set of patents filed at three of these major patent offices: the European Patent Office (EPO), the Japan Patent Office (JPO) and the United States Patent and Trademark Office (USPTO). Triadic patent family counts are attributed to the country of residence of the inventor and to the date when the patent was first registered. This indicator is measured as a number.”

- **Advanced manufacturing capabilities and first production**

Advanced manufacturing has the potential to open up entirely new markets or underpin and enhance existing markets through accelerating technological progress, and can lead to trickle-down effects on productivity and efficiency.<sup>18</sup>

**C) SOCIETY INDICATORS**

They monitor social inclusion progresses and initiatives developed to spread green culture through information and awareness raising campaigns, stakeholders’ involvement, training and sustainable management of projects.

**SOCIAL INCLUSION**

Social inclusion indicators monitor the MPs’ impact in terms of: income, reduction of economic inequalities, improvement of health conditions, and improved access to education.

**10. Income:**

- **Reduction of economic disparities**

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD: [“Income inequality” indicator](#)**

“Income is defined as household disposable income in a particular year. It consists of earnings, self-employment and capital income and public cash transfers; income taxes and social security contributions paid by households are deducted. The income of the household is attributed to each of its members, with an adjustment to reflect

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<sup>18</sup> [https://ec.europa.eu/growth/content/smart-value-chains\\_nl](https://ec.europa.eu/growth/content/smart-value-chains_nl)

differences in needs for households of different sizes. Income inequality among individuals is measured here by five indicators. The Gini coefficient is based on the comparison of cumulative proportions of the population against cumulative proportions of income they receive, and it ranges between 0 in the case of perfect equality and 1 in the case of perfect inequality. S80/S20 is the ratio of the average income of the 20% richest to the 20% poorest; P90/P10 is the ratio of the upper bound value of the ninth decile (i.e. the 10% of people with highest income) to that of the first decile; P90/P50 of the upper bound value of the ninth decile to the median income; and P50/P10 of median income to the upper bound value of the first decile. The Palma ratio is the share of all income received by the 10% people with highest disposable income divided by the share of all income received by the 40% people with the lowest disposable income.”

**GGGI:** Under the dimension “Social inclusion” the institute developed the indicator category “Social equity” and the specific indicator “SE1 Inequality in income based on Palma ratio (Ratio).”

## 11. Health:

### - Improvement of health conditions

Improving health conditions is one of the main objectives to be reached in the UN 2030 Agenda. Goal 3, Target 8 says: “Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all”.

**OECD** developed a set of Health data including:

- Doctors consultations
- Health spending
- Child vaccinations rates

**GGGI:** under the dimension “Social inclusion” the institute developed the indicator category “Social equity” and the specific indicator “SP2Universal health coverage (UHC) service coverage index (Index).”

## 12. Education:

### - Improved access to education

Education and culture are drivers for job creation, economic growth and improved social cohesion.

The indicators taken into account for the purposes of the GG Indexes are the following:

**OECD:** [“Enrolment rate in secondary and tertiary education”](#)

Enrolment rates in secondary and tertiary education are expressed as net enrolment rates, which are calculated by dividing the number of students of a particular age enrolled in these levels of education by the size of the population of that age. Generally, figures are based on head counts and do not distinguish between full-time and part-time study. In some OECD countries, part-time education is only partially covered in the reported data.”

**GGGI:** Under the dimension “Social inclusion” the institute developed the indicator category “Social equity” and the specific indicator “SE3 Share of youth (aged 15–24 years) not in education, employment, or training (Percent).”

## GREEN CULTURE

Green culture may be defined as a lifestyle where one deliberately and consciously makes choices and decisions that are oriented towards a sustainable use of resources, and understands the crucial importance of its actions for the society where he/she lives and its future wellbeing. Green culture is therefore recognized as a key element for the achievement of a green and circular economy development. Nevertheless, for many reasons and variables that cannot be analysed in this report, different societies and their multiple components may have different levels of sustainability awareness. Some actions can be identified and implemented in order to encourage a “green mind-set” and educate on a sustainable behaviour, thus paving the way for the transition into green and circular economies and societies.

The GG Community has identified several indexes aiming at measuring the impact of MPs’ on the level of green culture among the different components of society that have been addressed by the projects’ actions (e.g. Individuals, Families, Communities, Local governments, Local businesses, Trades and crafts, Local organizations, Regional governments etc.). The indexes are clustered around four main categories: 14. Information and awareness raising, 15. Stakeholders’ involvement, 16. Training and 17. Green management of projects. Each category is composed of a variable number of indexes aimed at measuring the quantity of the single actions implemented (e.g. No. of articles on the press), when the information is available, and the impact of the same action during the project lifetime and in the medium and long-term on achieving a green culture in the components of society addressed.

The Green Culture indexes are inspired mainly from the **LIFE project level outcomes indicators**.<sup>19</sup>

The Green Culture indexes under the category **14. Information and awareness raising**, are inspired from the **LIFE indicator number 11: Information and awareness raising of the general public**, and the respective sub-

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<sup>19</sup>[https://ec.europa.eu/environment/archives/life/toolkit/pmtools/life2014\\_2020/documents/160215\\_LIFEproject\\_level\\_outcome\\_indicators.pdf](https://ec.europa.eu/environment/archives/life/toolkit/pmtools/life2014_2020/documents/160215_LIFEproject_level_outcome_indicators.pdf)



indicators **11.1 Website** and **11.2 Other tools for reaching/raising awareness of the general public**. For **Awareness raising** is intended “successfully increasing the understanding and knowledge of the focus area of the project among the target audience (general public or stakeholder groups) represented by their individual members. It motivates their individual members of to do something new or change their existing habits and thus is the basis for actual behavioural change. It can be inferred from certain behavioural patterns that the awareness of individuals has been raised (e.g. asking project related questions, participation in project related games or quizzes, participation in guided tours)”. LIFE further explains that participation in project related **training** is a form of awareness raising accounted for separately under their indicator 12. Capacity building. The GG Community has included this information in the indicator category 16. Training, explained below.

On the other hand, **Providing information** to (“Reaching”) the general public is explained as “successfully providing project specific information to the target audience (general public or stakeholder groups) represented by their individual members. It can be inferred “from certain behavioural patterns that individuals have been reached...” The behavioural patterns taken into consideration from LIFE project are the downloads from project websites, unique visits of project websites (11.1 Website) or the brochures taken, number of unique visits of project related articles, visitors of project related events open to the public (11.2 Other tools for reaching/raising awareness of the general public). The GG Community as translated LIFE indicators as follows:

### 13. Information and awareness raising

- No. of information/awareness raising campaigns realised
- No. of articles on the press
- No. of visits to project website
- No. of public stakeholders reached by information activities
- No. of private stakeholders reached by information activities

Another LIFE Indicator taken into account is **number 10.2 Effect/impact of involving non- 41 governmental organisations (NGOs) and other stakeholders in project activities** that has been translated into the Green culture indicator category **15. Stakeholders’ involvement**.

**Stakeholders** are considered “as groups, organisations or individuals that have an interest in the projects. They can be both affected by the project activities or have an influence on their implementation. Stakeholders might be local, regional, national or international authorities, businesses, NGOs or other types of non-profit organisations, religious groups, trade unions, etc.” The GG Community as re-proposed the LIFE indicators as follows:

### 14. Stakeholders involvement

- No. of public institutions involved



- No. of networks involved
- No. of EU policy makers involved
- No. of national policy makers involved
- No. of regional and local policy makers involved
- No. of large enterprises involved
- No. of SMEs involved
- No. of trade associations involved
- No. of clusters involved
- No. of research & university institutions involved
- No. of public authorities involved
- No. of citizens involved
- No. of NGOs involved

As mentioned above, LIFE indicator 12 Capacity building, and specifically, the sub-indicator 11.2 Professional training or education, has been used as inspiration from the GG Community. LIFE project explains that “The reporting on the **training/education** indicator is based on measuring the number, and type, of individuals that have been included in or participated in any of the different training or education activities taking place within the project.” The GG Community has re-phrased it into the following indicators:

#### 15. Training

- No. of hours of training delivered to enterprises
- No. of hours of training delivered to PAs
- No. of hours of training delivered to other stakeholders

LIFE indicator number 14 Contribution to Economic growth and sub-indicator 14.1 Total project related expenditure during the project end and 14.2.2 Operating expenses expected in case of continuation/replication/transfer after the project end. They are defined so:

“**Total project related expenditure** is the sum of all expenses made for working on the issues addressed by the LIFE project. It comprises all categories of expenses made during the project’s duration, including expenditure not eligible for LIFE funding: personnel costs (rates effectively paid), external assistance, travel expenses, equipment, prototypes, infrastructure (the whole amount, not only depreciation), consumables, overheads, marketing expenditure, licence fees, patents, fees for standardisation procedures, cost for a business plan, etc.”

“**Operating expenses** are regular expenses required for the day-to-day functioning of a legal entity, such as for payment of personnel, utilities, maintenance and repairs, purchase of raw materials, traveling, advertising,



consulting fees, general administration costs, etc.. For LIFE projects it is defined as the regular project outcome related expenditure calculated as an annual average over the 3 or 5 years reference period after the project end.”

The GG Community readapted the LIFE indicators to issue the 17. Green management of projects as follows:

#### 16. Green management of projects

- No. of green purchases realised for project implementation
- Expenditure on environmental goods and services for project implementation
- No. of low environmental impact events realised (workshops, seminars, conferences)
- No. of low environmental impact events realised/No. of events realised within the project

## COLLECTION AND AGGREGATION OF THE GG INDEXES

MPs have been asked to measure their performance in green growth through an Excel file that was structured by the Green Growth Excellence Group and sent to them by GG Community partner CUEIM, starting from the first project phase SYNGGI in 2017. The full template is attached to this report as an example. The Lead Partner of each project, or a delegate, was in charge of the compilation of the file.

In the first section, MPs were asked to provide general information about the project and its contribution at Programme Level. Simple data aggregation was used for GG indexes related to programme governance.



Interreg  
Mediterranean  
EUROPEAN UNION  
GREEN GROWTH

## MED GREEN GROWTH INDEXES

### Data collection for the elaboration of general programme indicators

Basic information on the MODULAR PROJECT (please fill in)	
Acronym Modular Project	
Type of project (M1/M2/M3)	
Duration of the project (months)	
Number of partners (including associate partners)	
Budget (in €)	

Countries involved in the project (please tick relevant cell)	
Albania	
Bosnia and Herzegovina	
Cyprus	
Croatia	
France	
Germany	
Greece	
Italy	
Portugal	

FIGURE 3 - SCREENSHOT OF EXCEL FILE – SECTION PROGRAMME LEVEL INDICATORS

In the second section, MPs measured their impact on the three pillars of green growth: environment, economy and society. Scaled data aggregation was used for environment, economy and society indexes.

In order to give a comprehensive and consistent overview of all the projects, the Green Growth Excellence Group have established two main criteria:

1. The possibility to give a **qualitative feedback**, whether quantitative information are not available. This has been determined to gather data from projects that substantially differ each other, in terms of sector, tools and goals.
2. **Two main time frameworks**: the first is a short-term framework, identified **within the project's duration**, and a **medium/long-term framework** (i.e. 5 to 10 years after implementation of the project), in order to give the opportunity to all the projects to identify secondary impacts that can be achieved only after the end of the project.

Potential areas of contribution of the modular project to Green Growth and impact on green growth promotion														
L1	L2	L3	Aspect L4	NOTE	Relevance (YES/NO)	Boundaries (local/regional/national/EU)	Impact during project lifetime				Estimated impact in the medium and long term			
							Low	Medium	High	Quantitative information (where feasible)	Low	Medium	High	Quantitative information (where feasible)
ENVIRONMENT	Environmental sustainability	Use of natural resources	Reduced use of raw materials		YES	EU		N				X		
			Reduced water consumption		YES	local	N					N		
			Conservation of soil resources		YES	local		N	N				N	
			Increased biodiversity protection		YES	local		N						
		Reduction of the use of chemicals		YES	local	N					N			
		Climate change and energy	Reduced CO2 emissions		YES	local	N					N		
			Reduced energy consumption											
			Use of energy from renewable											
		Waste prevention and management	Reduced waste production		YES	Local		N					N	
			Increased separate collection		YES	Local		N					N	
	Recycling rates			YES	Local		N					N		
	Adoption of tools for sustainable production and consumption	Environmental technologies	ETV promotion											
			PEF/IOEF promotion		YES	EU		N				N		
		Certification of products	Ecolabel promotion		YES	EU	N					N		
		Environmental management	Promotion of EMAS registration											
	Green Public Procurement	GPP promotion and implementation												

FIGURE 4 – SCREENSHOT OF EXCEL FILE – PROJECT LEVEL INDICATORS SECTION

For both the time frameworks, the project Editor had to identify the **impact**:

- If the project has a direct impact and quantitative data are available, the Lead Partner had to include this information, preferably using an increment % (considering, in this way, the baseline already “inside” the data).
- If the project has an indirect impact and quantitative data are NOT available, the Lead Partner had to check the traffic-light box that better describe the impact (**low/medium/ high**) of the project on the specific aspect.

Relevance (YES/NO)	Boundaries (local/regional/national/EU)	Impact during project lifetime				Estimated impact in the medium and long term			
		Low	Medium	High	Quantitative information (where feasible)	Low	Medium	High	Quantitative information (where feasible)

FIGURE 5 - SCREENSHOT OF THE IMPACT - PROJECT LEVEL INDICATORS SECTION

All the MPs responded to the survey and sent back to CUEIM their evaluation based on the indexes provided: [ESMARCITY](#), [CAMARG](#), [PEFMED](#), [ARISTOIL](#), [GRASPINNO](#), [MADRE](#), [EMBRACE](#), [GREENMIND](#), [MEDGREENHOUSES](#), [REINWASTE](#), [CREAINNOVATION](#), [RE-LIVE WASTE](#) and [FINMED](#). 4 MPs sent their contribution during the SYNGGI

project ([CAMARG](#), [PEFMED](#), [ARISTOIL](#), [GRASPINNO](#)) while the remaining responded to the survey when the Green Growth Community project had already started. [FINMED](#) provided its definitive results in January 2022, after the end of the project. Only [GREENOMED](#) never responded to the survey.

The results provided by MPs have then been aggregated in order to build the set of GG indexes that will include both indexes that describe the impact of the programme in terms of governance of green growth actions and in terms of contribution to environmental, social and economic aspects. The impact (low, medium, high) during project lifetime and the estimated impact (low, medium, high) in the medium and long term, have been represented by making a weighted average. The full template of aggregated indexes is attached to this report.

## ONLINE REPRESENTATION OF THE GG INDEXES

To make the indexes an **interactive and efficient tool**, they needed be easy-to-use and easy-to read. In this sense, the best option seemed to be the creation of a section on the GGCP dedicated to the GG Indexes where they have been represented through graphs, histograms and maps by using an online plug-in (WordPress Data Tables) that fulfilled the following specific requirements:

- Online and user-friendly;
- Easy management of data-input and multi-source;
- Dynamic and with appealing dashboards;
- Low cost.

CUEIM, led the GG Indexes representation online and the graphic support of the GG Community partner REVOLVE. The first representation of the GG Indexes went online during summer 2020 and it has been modified in the following months in accordance to the graphic (e.g. logos, colours, type of graph etc.) and copy suggestions received progressively by the REVOLVE team. The final and current version of the [“Green Growth Indexes”](#) section on the GGCP is divided into two main pages: the first introduces the GG Indexes aim, consolidation, sources and division (Programme Level Indicators and Project Level Indicators); the second is dedicated to Project Level Indicators that focus on the potential areas of contribution of the MPs to green growth (economy, environment and society).



The Green Growth Indexes (GG Indexes) aim to measure the impact of the Modular Projects of the Interreg MED Green Growth Community (GG Community) on three main aspects of green growth - environment, society and economy - in the Mediterranean area.

[More info »](#)

The Indexes are based on indicators selected from existing dashboards and measures used by international actors (CGI, OECD, European Union, World Bank, UNEP, European LIFE projects etc.), and adapted to the thematic areas of the GG Community. In some cases, new indicators were created to accommodate the distinct characteristics of the Modular Projects.

## Indicators

### The programme level indicators

They include a general set of indicators provided by the Interreg MED Programme that focus on general issues, such as the countries involved, economic activities targeted, environmental tools used to promote green growth and stakeholders involvement. The InterregMED Programme and Public Authorities can use these indicators to assess the impact of the financed projects in distinct areas of green growth.

### The project level indicators

They focus on the potential areas of contribution of the Modular Projects to green growth and their impact on green growth promotion. These indicators are classified into three main categories: domains, environment, economy and society. The impact of an indicator can be measured quantitatively if data is available, or qualitatively (high/medium/low impact) if numerical data cannot be obtained.

The information provided by Modular Projects has been aggregated to describe the impact of the entire Community both at programme level, in terms of governance of green growth actions, and in terms of contribution to environmental, social and economic aspects.

#### General

Countries involved in the project
Economic activities targeted
Environmental sectors targeted
Environmental tools
Types of actions
Investment priorities

#### Countries involved in the project

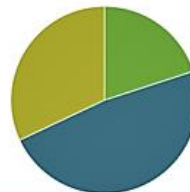


#### Stakeholders involved

Four types of stakeholders have been identified by the InterregMED Programme. Each category can contribute to the promotion of the GG Community's Modular Projects initiatives in different ways.

Public institutions
Networks
Decision makers / Policy makers
End-users / Target groups

#### Public institutions



## Conclusions

The information provided by Modular Projects demonstrates that their impact in the three main domains of green growth - society, environment and economy - is positive during the projects' lifetime and it is generally maintained in the medium and long term. This is especially true for economic and environmental indicators.

A detailed and comprehensive report of the project's impact in the three domains is available [here](#).

Explore more about the impact of the Interreg MED Green Growth Community in the **ENVIRONMENT**, **SOCIETY** and **ECONOMY**

[READ MORE](#)

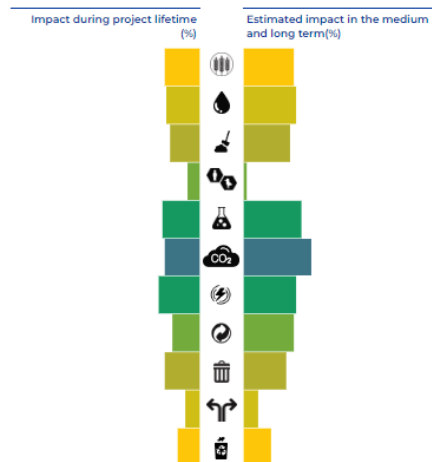
FIGURE 6 - GGC INDEXES MAIN PAGE ON GGCP

## Environment

These indicators monitor the efficient use and management of natural resources and the adoption of tools for sustainable production and consumption.

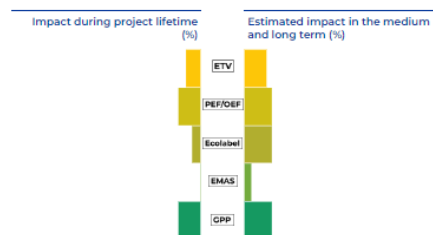
### Environmental sustainability

These indicators measure the projects' contribution to different aspects of environmental sustainability including the use of natural resources, climate change, energy management, and waste prevention.



### Adoption of tools for sustainable production and consumption

These indicators estimate the projects' impact on the adoption of different tools such as environmental technologies, product certification, environmental management, and green public procurement.

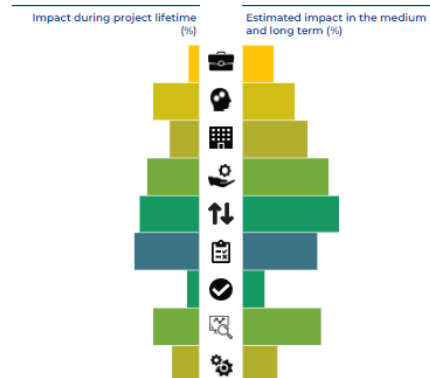


## Economy

These indicators monitor new green jobs and innovation activities created in the framework of the Modular Projects.

### Green jobs and innovation activities

These indicators assess the projects' contribution to the creation of jobs, new activities, and innovation.





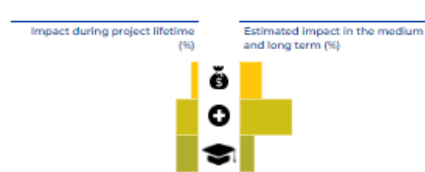


## Society

These indicators monitor social inclusion progress, initiatives developed to spread green culture through awareness raising campaigns, stakeholders' involvement, training, and sustainable management of projects.

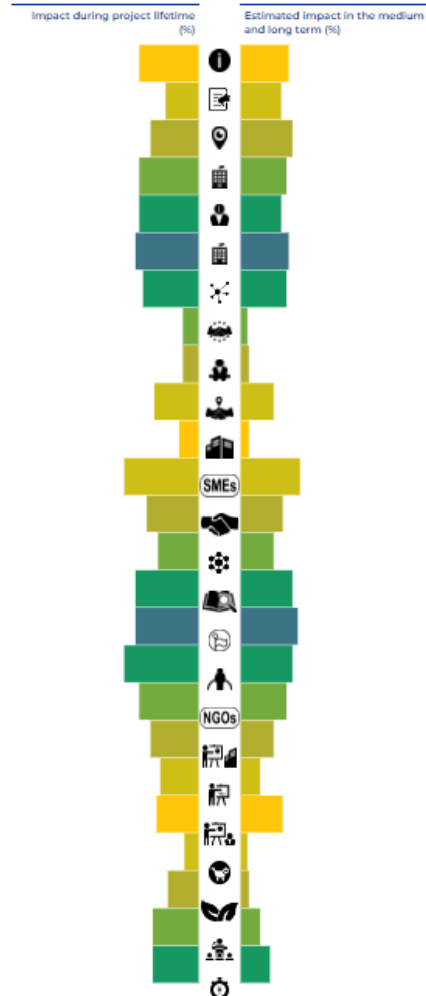
### Social Inclusion

Social inclusion indicators monitor the projects' impact in terms of: income, reduction of economic inequalities, improvement of health conditions, improved access to education, inclusion of disadvantaged groups.



### Green culture

Green culture indicators measure the projects' contribution to information and awareness raising activities, stakeholder involvement, training, and green management.



FIGURES 7 - GGC INDEXES ENVIRONMENT, ECONOMY AND SOCIETY PAGE

## 4. Results and discussion

In this chapter, the Green Growth Indexes resulting by the feedback provided by the Modular projects are presented. The impact in the Mediterranean area of the Green Growth Community is analysed and discussed, both for the projects' lifespan period and the 5 years after the closure of the projects.

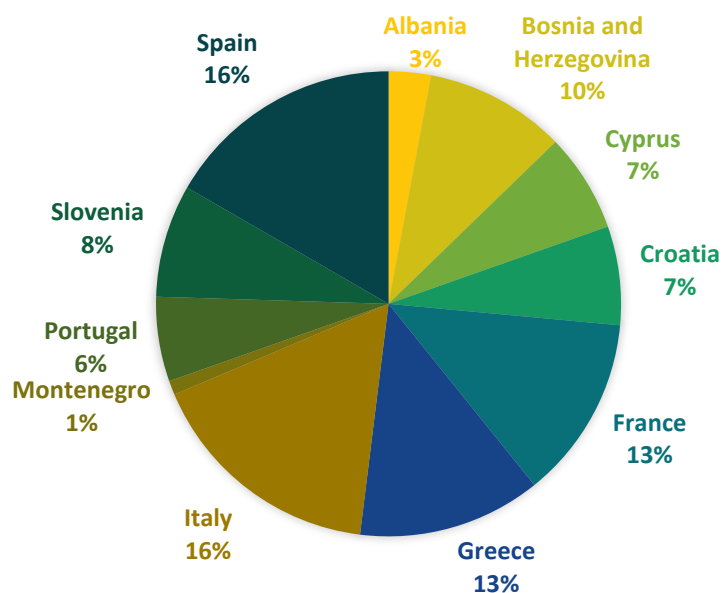
In the first section of the chapter, the programme level indicators are presented, to provide a general outlook of Countries, sectors and types of organisations involved. In the second section, we will go through the projects level indicators to understand how the Community have been contributing to the development and adoption of green growth and circular best practices in the Mediterranean.

### PROGRAMME LEVEL INDICATORS

#### Countries involved in the Community

Country	EU/IPA Country	N. of representing projects	Share
<b>Albania</b>	IPA	2	3%
<b>Bosnia and Herzegovina</b>	IPA	7	10%
<b>Cyprus</b>	EU	5	7%
<b>Croatia</b>	EU	5	7%
<b>France</b>	EU	9	13%
<b>Greece</b>	EU	9	13%
<b>Italy</b>	EU	12	17%
<b>Montenegro</b>	IPA	1	1%
<b>Portugal</b>	EU	4	6%
<b>Slovenia</b>	EU	6	8%
<b>Spain</b>	EU	12	17%

TABLE 1 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY



GRAPH 1 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY

As represented in the table and graph above, the Green Growth Community represents 11/13 of the cooperation area of the Interreg MED Programme. The two missing Countries are Malta and United Kindom (Gibraltar). The most represented Countries are Italy and Spain, with a share<sup>20</sup> of 17%, and France and Greece, with a share of 13%. Another important information is the relevance of the IPA Countries participation: all the three of them are represented. Bosnia and Herzegovina, in particular, is present in 7 project for a total share of 10%. This is a significant information because it shows an active participation of IPA Countries in the development and adoption of green growth.

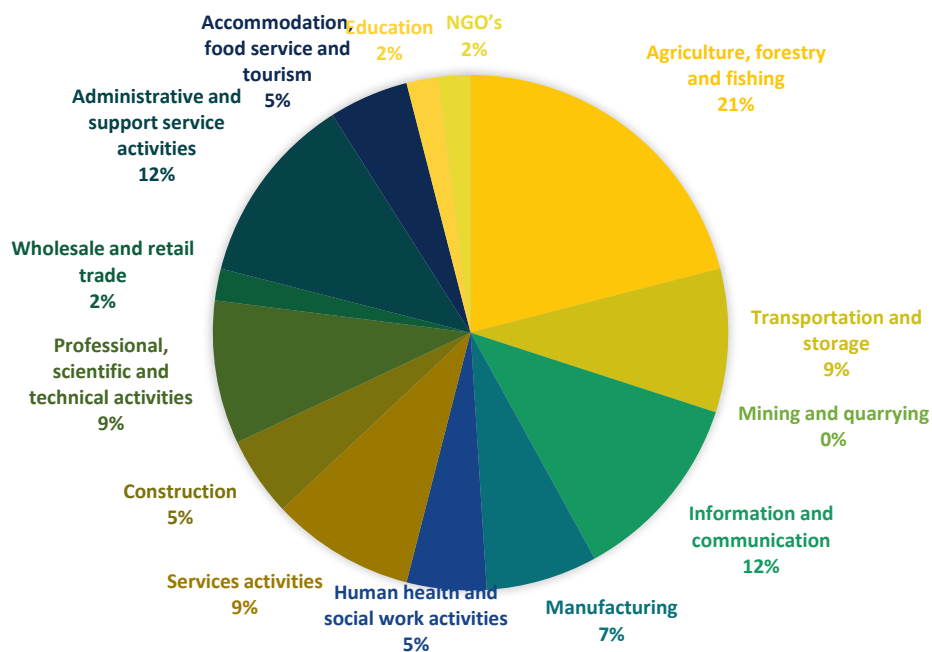
<sup>20</sup> Calculated as the project representation of the Country in respect of the total number of representation (=72)



### Economic activities targeted

Economic activities targeted	Projects	Share
Agriculture, forestry and fishing	9	21%
Transportation and storage	4	9%
Mining and quarrying	0	0%
Information and communication	5	12%
Manufacturing	3	7%
Human health and social work activities	2	5%
Services activities	4	9%
Construction	2	5%
Professional, scientific and technical activities	4	9%
Wholesale and retail trade	1	2%
Administrative and support service activities	5	12%
Accommodation, food service and tourism	2	5%
Education	1	2%
NGO's	1	2%

TABLE 2 – ECONOMIC ACTIVITIES TARGETED IN THE GREEN GROWTH COMMUNITY



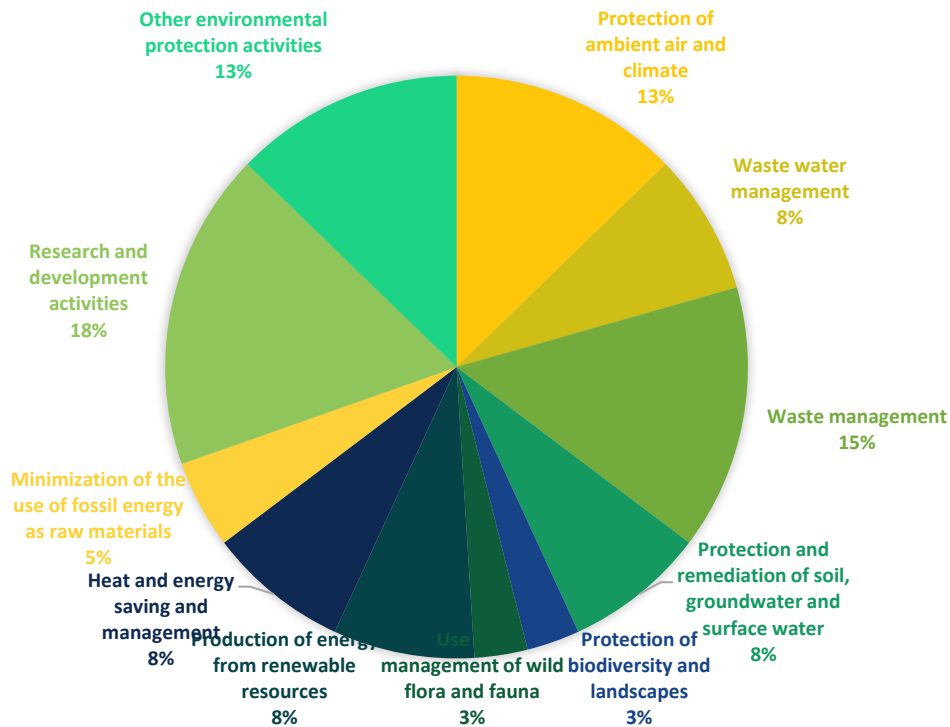
GRAPH 2 – ECONOMIC ACTIVITIES TARGETED IN THE GREEN GROWTH COMMUNITY

The most represented economic activity is “Agriculture, forestry and fishing”, targeted, in a direct or indirect way, by 9 project in total and a share of 21%. The second in the list activities are “Information and communication” and “Administrative and support service activities”, represented by 5 projects with a share of 12%.

## Environmental sectors targeted

Environmental sectors targeted	Projects	Share
Protection of ambient air and climate	5	13%
Wastewater management	3	8%
Waste management	6	15%
Protection and remediation of soil, groundwater and surface water	3	8%
Noise and vibration abatement	0	0%
Protection of biodiversity and landscapes	1	3%
Protection against radiation	0	0%
Use and management of inland waters	0	0%
Use and management of natural forest resources	0	0%
Use and management of wild flora and fauna	1	3%
Production of energy from renewable resources	3	8%
Heat and energy saving and management	3	8%
Minimization of the use of fossil energy as raw materials	2	5%
Management of minerals	0	0%
Research and development activities	7	18%
Other environmental protection activities	5	13%

TABLE 3 – ENVIRONMENTAL SECTORS TARGETED IN THE GREEN GROWTH COMMUNITY



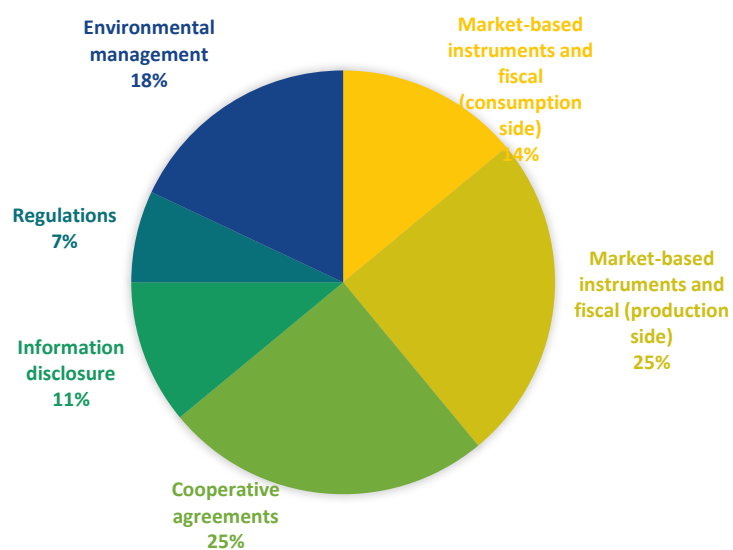
**GRAPH 3 – ENVIRONMENTAL SECTORS TARGETED IN THE GREEN GROWTH COMMUNITY**

The Environmental sector that have been addressed the most by the Green Growth Community is the “Research and development activities” sector, expressing the high level of innovation that characterise the projects and the transversal approach of most of them. Another important result is the one related to the waste management: although only two modular projects directly addressed the waste sector, other 4 projects have had an indirect impact on waste management. Sectors that have not been covered by the Community are: Noise and vibration abatement, Protection against radiation, Use and management of inland waters, Use and management of natural forest resources and Management of minerals. Noise, radiation and minerals can be considered as niche sectors, while the forest and waters management have a broader impact and could be seen as a weakness of the Community.

#### Environmental tools used to promote Green Growth:

Environmental tools used to promote green growth	Projects	Share
Market-based instruments and fiscal (consumption side)	4	14%
Market-based instruments and fiscal (production side)	7	25%
Cooperative agreements	7	25%
Information disclosure	3	11%
Regulations	2	7%
Environmental management	5	18%

TABLE 4 – ENVIRONMENTAL TOOLS USED IN THE GREEN GROWTH COMMUNITY



GRAPH 4 – ENVIRONMENTAL TOOLS USED IN THE GREEN GROWTH COMMUNITY



The most used tools for reaching the projects' objective have been the Market-based instruments and fiscal (production side) and the Cooperative agreements. This fact highlights the approach SMEs-oriented, and the aim of the project to address the need of the productive side.

### Types of actions

Types of actions	Projects	Share
Development of clusters and networks	7	10%
Development of models and tools	11	16%
Transfer of knowledge	10	15%
Awareness-raising	8	12%
Capitalisation activities	8	12%
Training and changing practices	9	13%
Elaborating policy plans	4	6%
Pilot projects	10	15%
Others	1	1%

TABLE 5 – TYPES OF ACTIONS USED IN THE GREEN GROWTH COMMUNITY

The actions that have been used the most to pursue the goals of the Community are the Development of models and tools, the Transfer of knowledge and Pilot projects. The figures highlight the essential role of the Modular Projects in developing, testing and transferring their results, while the Community helped them in capitalization activities and definition of policy recommendations, integrating the actions of the projects.

## Investments priorities of the Interreg Med Programme

Investment priorities of the Interreg MED programme	Projects	Share
Promoting business investment in R&I	6	9%
Developing links and synergies between enterprises, research and development centres and the higher education sector	10	14%
Promoting investment in product and service development	6	9%
Technology transfer	5	7%
Social innovation	2	3%
Eco-innovation	11	16%
Public service applications	2	3%
Demand stimulation	4	6%
Networking	8	12%
Clusters and open innovation through smart specialization, and supporting technological and applied research	8	12%
Pilot lines	5	7%
Early product validation actions	2	3%
Advanced manufacturing capabilities and first production	0	0%

TABLE 6 – INVESTMENT PRIORITIES OF THE INTERREG MED PROGRAMME TARGETED IN THE GREEN GROWTH COMMUNITY

Regarding the investment priorities of the Interreg MED Programme, the most addressed has been eco-innovation. Although only 4 Modular projects have been categorized in the focus area “eco-innovation” (and one of these did not provide a feedback for the indexes), 11 projects have indicated this priority as relevant, even in an indirect way. This is an interesting figure, especially if related to another priority that has been strongly addressed: Developing links and synergies between enterprises, research and development centres and the higher education sector. It is clear how the Community have been working to create a linkage between academia and enterprises, favouring technology transfer and promoting innovation in the field of sustainability.

## Stakeholders' engagement

Four types of stakeholders have been identified by the Interreg MED Programme: Public institutions, Networks, Decision makers / Policy makers, End-users / Target groups. Each category can contribute to the promotion of the GG Community's Modular Projects initiatives in different ways, so they will be analysed one by one.

Public institution	Projects	Share
National	5	20%
Regional	12	48%
Local	8	32%

Networks	Projects	Share
PA networks	6	29%
Scientific networks	5	24%
Thematic networks	10	48%

Decision makers / Policy makers	Projects	Share
EU level	6	18%
National level	7	21%
Regional level	12	36%
Local level	8	24%

End-users / Target groups	Projects	Share
Large enterprises	3	5%
SMEs	12	20%
Trade associations	7	12%
Clusters	9	15%
Research & University Institutions	10	17%
Public Authorities	10	17%
Citizens	5	8%
NGOs	3	5%

TABLES 7 – STAKEHOLDERS IDENTIFIED BY THE INTERREG MED PROGRAMME TARGETED IN THE GREEN GROWTH COMMUNITY



## PROJECT LEVEL INDICATORS AND INDEXES

The final projects' level indexes have been defined gathering, as first thing, the qualitative feedbacks of the projects for each aspect of the environment, society and economy pillars, for the two considered timeframes (project lifetime and medium/long-term period). In order to have a unique number expressing the impact of each aspect, a system of weights has been defined, as follow:

- **1** for the impact considered as LOW
- **2.5** for the impact considered as MEDIUM
- **5** for the impact considered as HIGH

Considering this system of weights and having the feedback of 13 modular projects, the maximum impact of the Community for each indicator is 65 ( $=13 \times 5$ ). The indicators obtained by the weighted sum have then been express as a percentage of the potential maximum impact achievable.

The following tables represents the weighted indicators and the impact expressed in percentage.

			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Weighted impact	Impact in %	Low	Medium	High	Weighted impact	Impact in %
ENVIRONMENT	Environmental sustainability	Use of natural resources	Reduced use of raw materials	0	3	1	12,5	19%	0	1	3	17,5	27%
			Reduced water consumption	2	2	1	12	18%	1	1	3	18,5	28%
			Conservation of soil resources	3	1	1	10,5	16%	1	2	2	16	25%
			Increased biodiversity protection	2	1	0	4,5	7%	1	0	0	1	2%
			Reduction of the use of chemicals	3	2	1	13	20%	0	4	2	20	31%
		Climate change and energy	Reduced CO2 emissions	5	1	1	12,5	19%	1	5	2	23,5	36%
			Reduced energy consumption	2	1	2	14,5	22%	1	1	3	18,5	28%
			Use of energy from renewable sources	2	3	0	9,5	15%	0	3	2	17,5	27%
		Waste prevention and management	Reduced waste production	0	1	2	12,5	19%	0	0	3	15	23%
			Increased separate collection	0	0	1	5	8%	0	0	1	5	8%
			Recycling rates	0	1	1	7,5	12%	0	0	2	10	15%
	Adoption of tools for sustainable production and consumption	Environmental technologies	ETV promotion	0	0	1	5	8%	0	1	1	7,5	12%
		Certification of products	PEF/OEF promotion	0	1	1	7,5	12%	0	2	1	10	15%
			Ecolabel promotion	1	1	0	3,5	5%	0	2	1	10	15%
		Environmental management	Promotion of EMAS registration	0	0	0	0	0%	0	1	0	2,5	4%
		Green Public Procurement	GPP promotion and implementation	0	1	1	7,5	12%	0	2	1	10	15%

TABLE 8 – WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR ENVIRONMENT

			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Weighted impact	Impact in %	Low	Medium	High	Weighted impact	Impact in %
ECONOMY	Green jobs and innovation activities	Job creation	New jobs	4	0	0	4	6%	1	4	0	11	17%
			Adaption of workers skills	1	4	1	16	25%	1	3	2	18,5	28%
		New activities and innovation	New businesses	3	3	0	10,5	16%	0	3	3	22,5	35%
			New products/services	3	4	1	18	28%	0	6	3	30	46%
			Replication / transfer	3	3	2	20,5	32%	1	3	5	33,5	52%
			Pilot lines	0	3	3	22,5	35%	1	2	4	26	40%
			Early product validation actions	2	1	0	4,5	7%	0	1	1	7,5	12%
			Clusters and open innovation through smart specialisation, and supporting technological and applied research	4	3	1	16,5	25%	0	3	4	27,5	42%
			Advanced manufacturing capabilities and first production	0	2	1	10	15%	0	1	2	12,5	19%

TABLE 9 - WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR ECONOMY

			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Impacto pesato	Impacto %	Low	Medium	High	Impacto pesato	Impacto %
SOCIETY	Social inclusion	Income	Reduction of economic disparities	0	1	0	2,5	4%	0	1	1	7,5	12%
		Health	Improvement of health conditions	3	2	0	8	12%	1	3	2	18,5	28%
		Education	Improved access to education	0	1	1	7,5	12%	0	2	0	5	8%
		Opportunities	Inclusion of disadvantaged people	0	0	0	0	0%	0	0	0	0	0%
	Green culture	Information and awareness raising activities	No. of information/awareness raising campaigns realised	1	4	2	21	32%	2	4	1	17	26%
			No. of articles on the press	2	4	0	12	18%	2	3	1	14,5	22%
			No. of visits to project website	2	0	3	17	26%	1	1	3	18,5	28%
			No. of public institutions reached by information activities	1	2	3	21	32%	1	4	1	16	25%
			No. of private stakeholders reached by information activities	1	2	3	21	32%	2	3	1	14,5	22%
			No. of public institutions involved	2	2	3	22	34%	2	4	1	17	26%
		Stakeholders involvement	No. of networks involved	2	1	3	19,5	30%	1	4	1	16	25%
			No. of EU policy makers involved	1	0	1	6	9%	0	1	0	2,5	4%
			No. of national policy makers involved	1	0	1	6	9%	1	1	0	3,5	5%
			No. of regional and local policy makers involved	3	1	2	15,5	24%	2	4	0	12	18%
			No. of large enterprises involved	2	0	1	7	11%	1	1	0	3,5	5%
			No. of SMEs involved	1	2	4	26	40%	1	4	2	21	32%
			No. of trade associations involved	1	1	3	18,5	28%	0	2	2	15	23%
			No. of clusters involved	2	1	2	14,5	22%	2	2	1	12	18%
			No. of research & university institutions involved	2	2	3	22	34%	1	5	1	18,5	28%
			No. of public authorities involved	2	2	3	22	34%	0	4	2	20	31%
			No. of citizens involved	1	0	5	26	40%	1	1	3	18,5	28%
			No. of NGOs involved	1	0	4	21	32%	1	2	2	16	25%
		Training	No. of hours of training delivered to enterprises	2	2	2	17	26%	2	2	1	12	18%
			No. of hours of training delivered to PAs	1	1	2	13,5	21%	2	2	0	7	11%
			No. of hours of training delivered to other stakeholders	0	2	2	15	23%	0	2	2	15	23%
		Green management of projects	No. of green purchases realised for project implementation	0	0	1	5	8%	0	1	0	2,5	4%
			Expenditure on environmental goods and services for project implementation	1	0	2	11	17%	1	1	0	3,5	5%
			No. of low environmental impact events realised (workshops, seminars, conferences)	1	2	2	16	25%	2	2	0	7	11%
			No. of low environmental impact events realised/No. of events realised within the project	1	2	2	16	25%	3	3	0	10,5	16%

TABLE 10 – WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR SOCIETY

## Environment

Analysing the indexes related to environment, it is possible to see how the major impacts are related to environmental sustainability, while the adoption of tools for sustainable production and consumption are less addressed. In particular, it is possible to identify the more relevant aspects during the lifetime of the projects:

- Reduced use of raw materials (19%);
- Reduced water consumption (18%);
- Reduction of the use of chemicals (20%);
- Reduction of energy consumption (22%);
- Reduced CO<sub>2</sub> emissions (19%);
- Reduced waste production (19%).

Instead, the less impacted aspects have been:

- Increased biodiversity protection (7%);
- Increased separate collection (8%);
- ETV promotion (8%);
- Ecolabel promotion (5%);
- Promotion of EMAS registration (0%).

By looking at the period after the closure of the projects, it is possible to notice that the impacts that tend to increase the most are those related to the following indicators:

- Reduction of water consumption (increase of 10%);
- Reduction of the use of chemicals (increase of 11%);
- Reduced CO<sub>2</sub> emissions (increase of 17%);
- Use of energy from renewable sources (increase of 12%);
- Ecolabel promotion (increase of 10%).

Project co-financed by the European Regional Development Fund

## Partners:



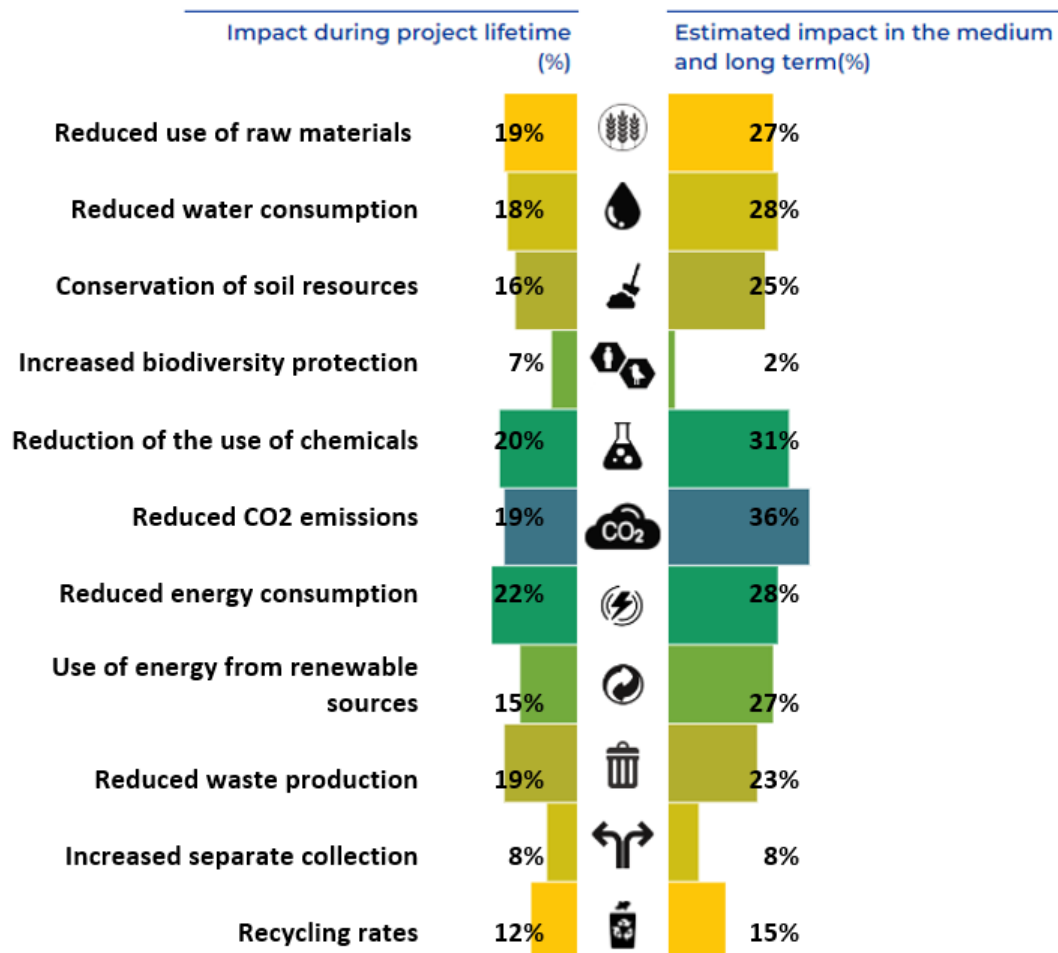


FIGURE 8 - GREEN GROWTH INDEXES OF THE ENVIRONMENTAL PILLAR ON ENVIRONMENTAL SUSTAINABILITY

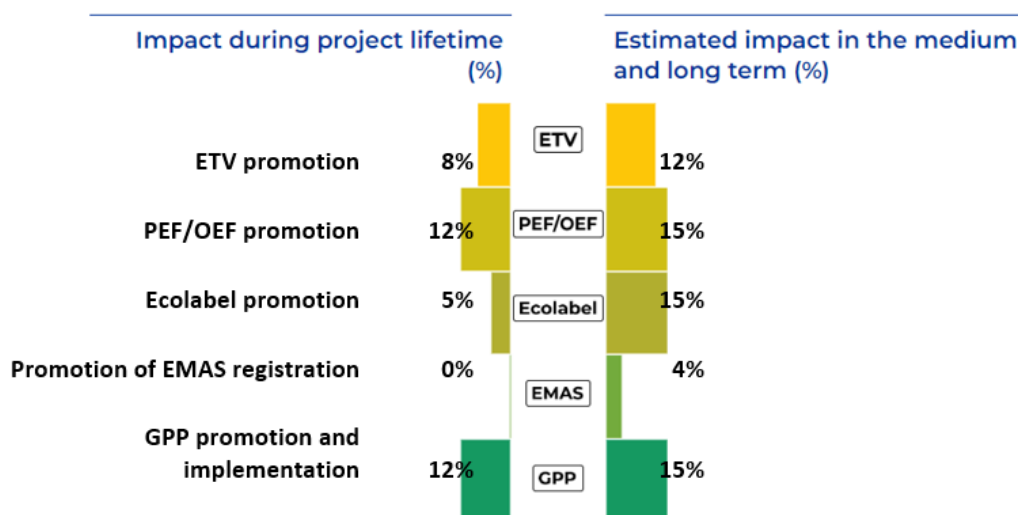


FIGURE 9 - GREEN GROWTH INDEXES OF THE ENVIRONMENTAL PILLAR ON ADOPTION OF TOOLS FOR SUSTAINABLE PRODUCTION AND CONSUMPTION

The relevance of the environmental sustainability related indicators is once again confirmed in relation of the Environment pillar. Considering the medium-long term perspective, the increase of the impact of “Ecolabel promotion” highlights the developing and piloting core of the projects, that expect to bring to the “market” the best practices that can be labelled at European level.

A negative aspect that should be underlined is the decrease of the impact for the indicator “Increased biodiversity protection” (- 5%), while there are no variation for the indicator “Increased separate collection”. It is also interesting the data about the “Reduced waste production”, which increment is only of 4%. Considering that the biodiversity protection is not a key goal of the Green Growth Community but more a “side effect”, it is not strange that the modest impact and the decrease of it can be explained by transversal and not structured actions. On the contrary, the reduced impact of “Reduced waste production” could be explained by the small number of projects in the waste management focus area. These figures can be explained as there are only two waste-related projects with structured actions and results able to maintain their impact after their closure, while other projects that contributed to this index during the projects’ lifetime have indirect, unstructured impacts.

## Economy

In the Economy pillar, the indicators are related to green jobs creation, new activities and innovation.

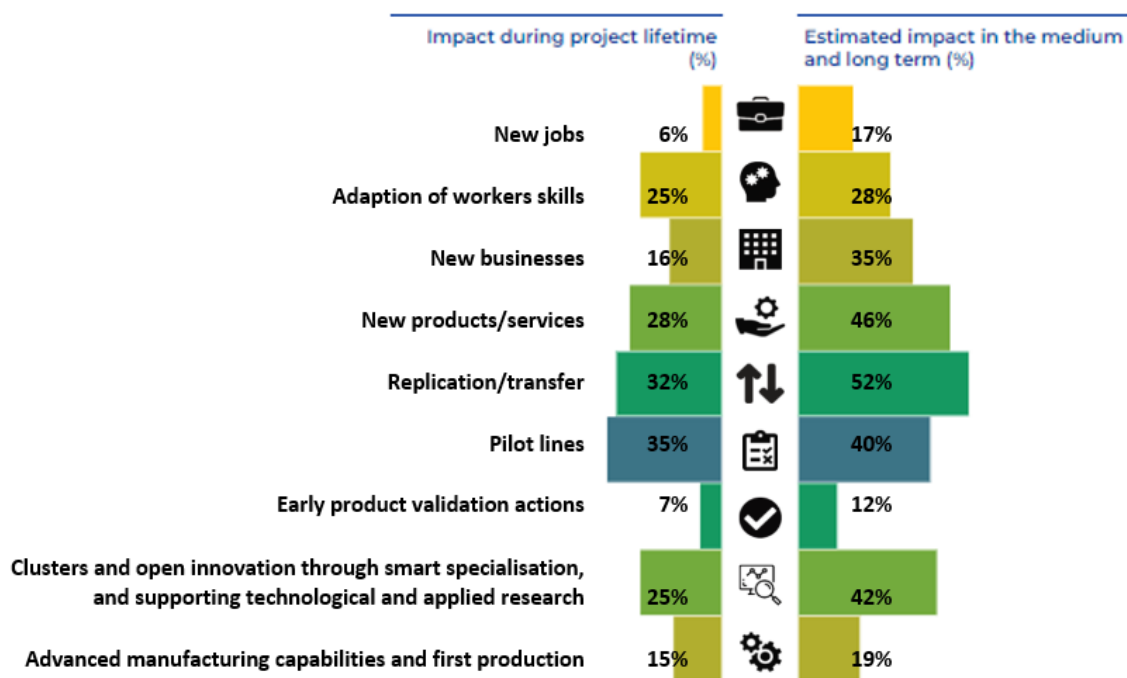


FIGURE 10 - GREEN GROWTH INDEXES OF THE ECONOMY PILLAR ABOUT GREEN JOBS AND INNOVATION

In the Economy pillar, the indicators are related to green jobs creation, new activities and innovation. Here it is interesting to notice that, apart from the “New jobs” (6%) and “Early product validation actions” (7%), all the other indicators have an impact higher than the 15%, confirming a strong effect of the Community in the economic sector, mainly addressing SMEs, clusters and other business associations. Replication, transfer and pilot lines are the indicators that impact the most, putting the Community in the best practices’ validation phase,



more than the early stage of the innovation value chain. This attitude is confirmed by the fact that all the indexes increase after the closure of the projects, indicating that all of them have implemented structured actions to ensure the long-lasting of results.

## Society

The indicators in the society pillar are divided into Social inclusion and Green culture. In social inclusion, the key aspects and the related impacts during the projects' lifetime are:

- Reduction of economic disparities (4%);
- Improvement of health conditions (12%);
- Improved access to education (12%).

Among these, only "Improved access to education" has a slight decrease (- 4%) after the end of the projects' implementation, while the other two maintain and increase their effects, also in a medium/long term perspective.

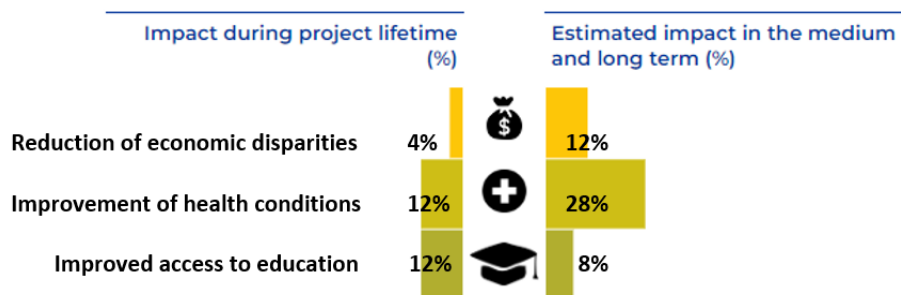


FIGURE 11 - GREEN GROWTH INDEXES OF THE SOCIETY PILLAR ABOUT SOCIAL INCLUSION

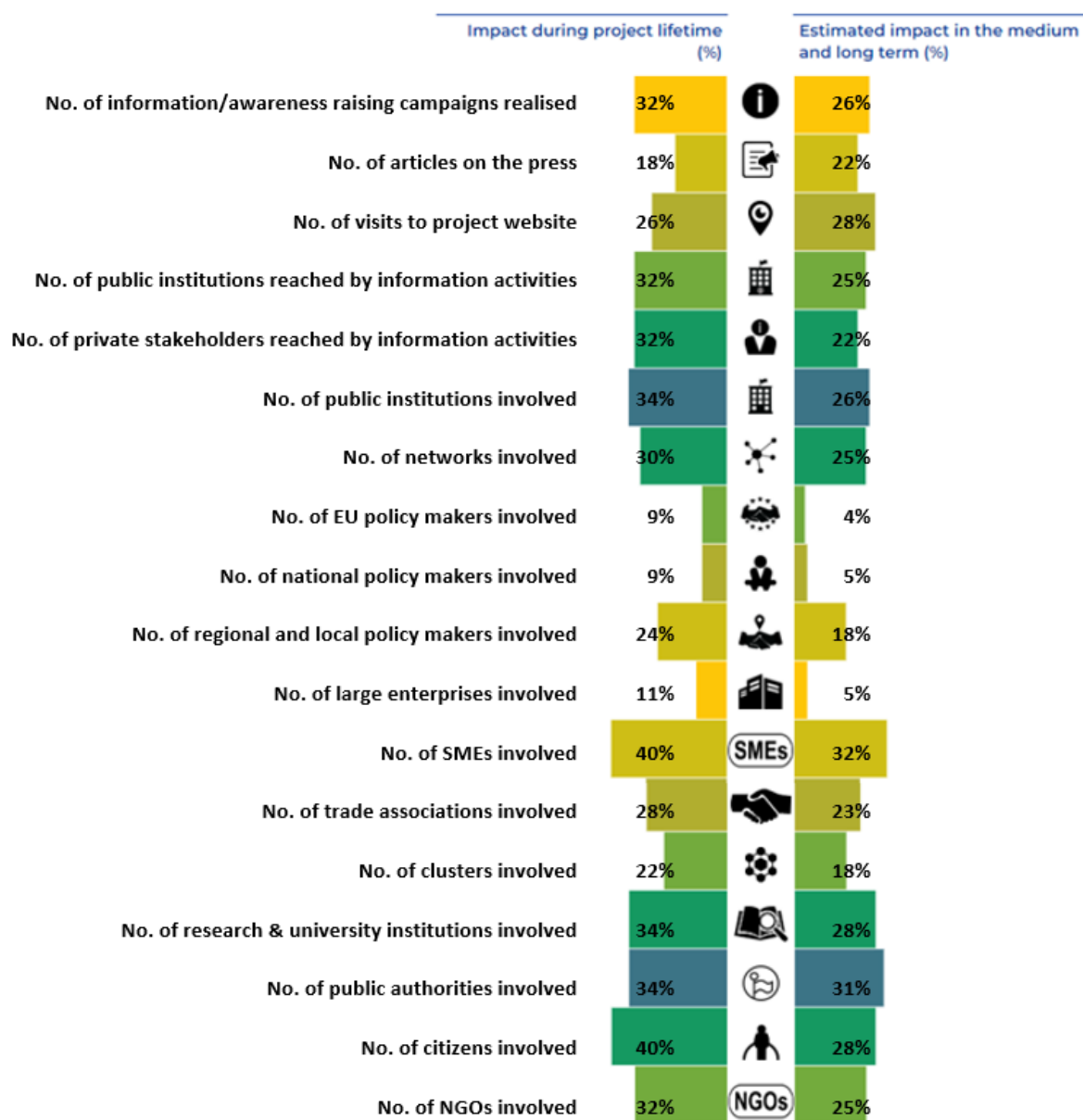
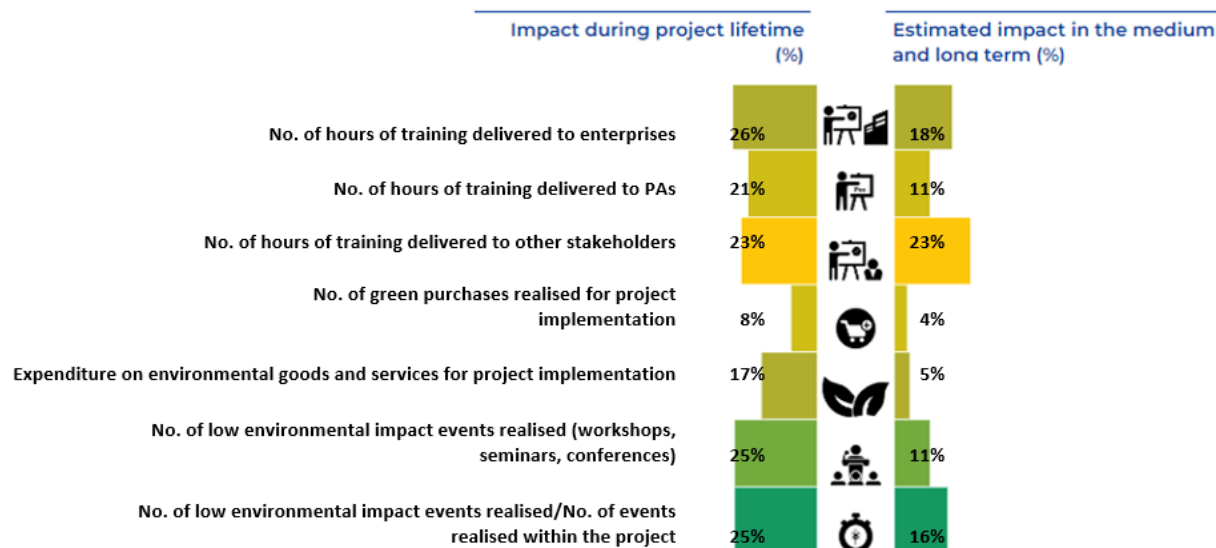


FIGURE 12 - GREEN GROWTH INDEXES OF THE SOCIETY PILLAR ABOUT GREEN CULTURE (INFORMATION, AWARENESS RAISING ACTIVITIES AND STAKEHOLDERS' INVOLVEMENT)



**FIGURE 13 - GREEN GROWTH INDEXES OF THE SOCIETY PILLAR ABOUT GREEN CULTURE (TRAINING AND GREEN MANAGEMENT OF PROJECTS)**

Regarding green culture, the indicators are sub-divided in Stakeholders involvement, Training and Green management of projects. This kind of indicators express the implementation of actions that contribute to increase the green culture in different kind of stakeholders and target groups and the projects' implementation itself. All the indexes have important impacts during the implementation period, but almost all of them have an impact decrease after the end of the activities. The only notable exceptions are the "Reduction of economic disparities", with an increase of 8%, and the Improvement of health conditions, with an increase of 16%. The latter can be explained with the indirect positive effects of the actions related to other indicators, such as the Reduction of the use of chemicals and Reduced CO<sub>2</sub> emissions. Another interesting data is the one about the "Information and awareness raising activities". Even in this case, we can notice an increase (even not so significant) of the "No. of articles on the press" (+ 4%) and of the "No. of visits to project website" (+ 2%), underlining the major attention to the communication campaigns even after the end of the projects.



## 5. The impact of the capitalized projects on the Green Growth Community results

Following the analysis realized for the Modular Projects, in the light of the capitalization of three of them, ARISTOIL, GRASPINNO and PEFMED, at this stage it is relevant to detect and underline the main aspects concerning their results. Namely, in this chapter, the Green Growth Indexes resulting by the feedbacks provided by the capitalized Modular Projects ARISTOIL PLUS, GRASPINNO PLUS and PEFMED PLUS are presented. So, the impact in the Mediterranean area of the Green Growth Community is analysed and discussed taking into account their contribution, both for the projects' lifespan period and the 5 years after the closure of the projects<sup>21</sup>.

In the first section, the chapter will analyse the programme level indicator concerning the countries involved by all the Community projects after the implementation of the PLUS ones. It is important to underline that the PLUS projects aimed at transferring and reinforce the activities and results got during their first phase to new countries, by involving new partners, and this contributed to increase the general impact of the Community projects.

In the second section, we will go through the projects level indicators, recalculated by adding the PLUS projects results, in order to understand how they have influenced the Community impact and how they have been contributing to boost the development and adoption of green growth and circular best practices in the Mediterranean.

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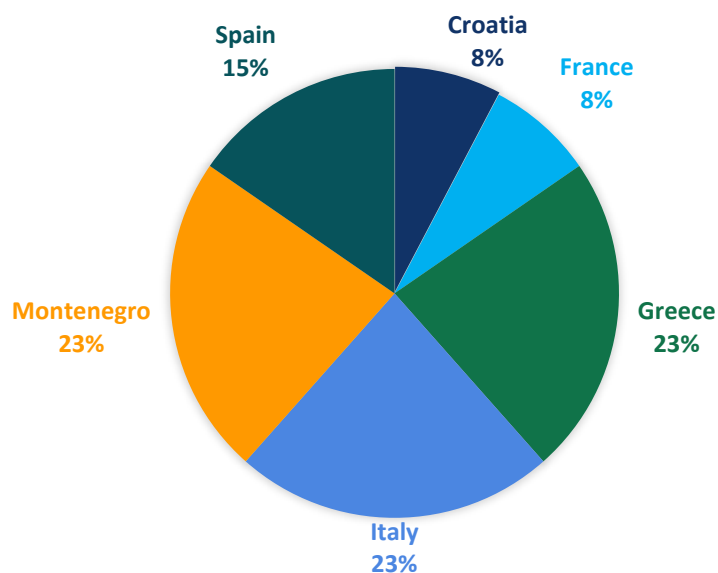
<sup>21</sup> The final data regarding the PLUS projects have been provided at the end of their activities, so the provisional ones are based on the data got on June 2022.

## PROGRAMME LEVEL INDICATORS

### Countries involved in the Community by the PLUS projects

Country	EU/IPA Country	N. of representing projects	Share
Albania	IPA	0	0%
Bosnia and Herzegovina	IPA	0	0%
Cyprus	EU	0	0%
Croatia	EU	1	8%
France	EU	1	8%
Greece	EU	3	23%
Italy	EU	3	23%
Montenegro	IPA	3	23%
Portugal	EU	0	0%
Slovenia	EU	0	0%
Spain	EU	2	15%

TABLE 11 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY BY THE PLUS PROJECTS



GRAPH 5 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY BY THE PLUS PROJECTS

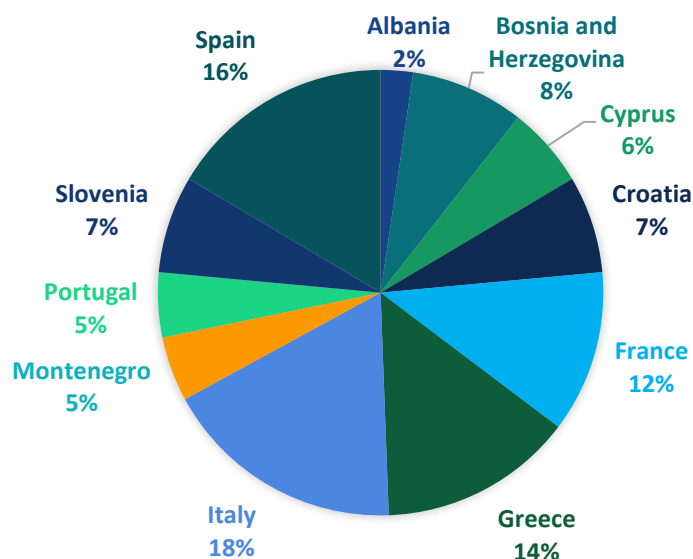


As represented in the table and in the graphs above, the PLUS Projects represented 6/13 of the cooperation area of the Interreg MED Programme (in blue). The most represented ones are Italy (as well as for the other MPs), Greece and especially Montenegro, with a share of 23%. Spain follows with a share of 15% and Croatia and France complete the group with a share of 8%. Concerning the IPA Countries participation, only Montenegro is represented. These data show an increasing interest towards these countries compared to the previous distribution, much more balanced. It appears very significant if we consider that during the previous phase they represented, among the 13 countries group, respectively the 17% for Italy, the 13% for Greece and only 1% for Montenegro.

#### Countries involved in the Community by the Modular Projects and the three PLUS projects

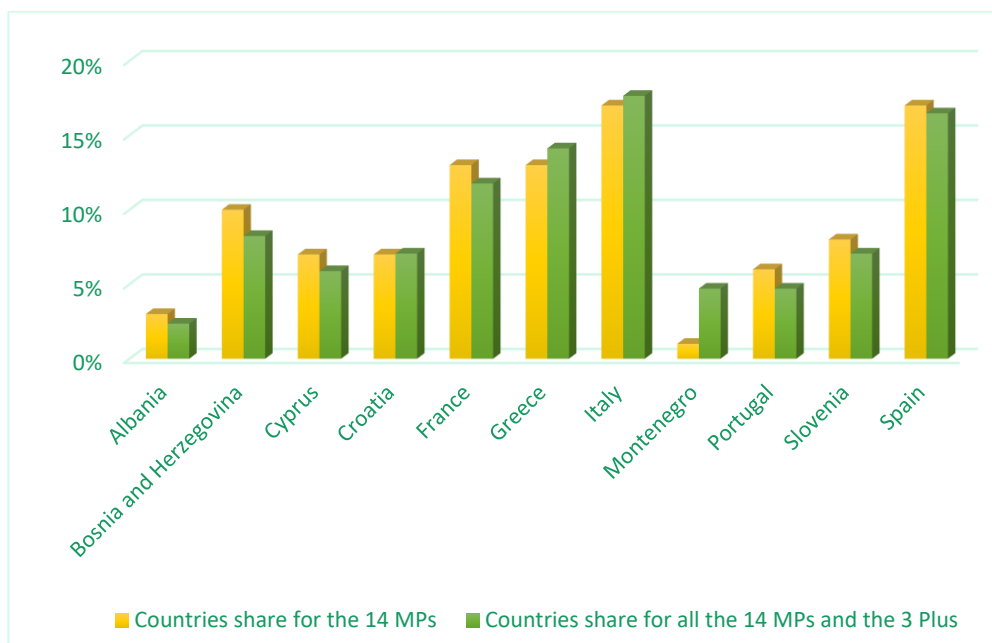
Country	EU/IPA Country	N. of representing projects	Share
Albania	IPA	2	2%
Bosnia and Herzegovina	IPA	7	8%
Cyprus	EU	5	6%
Croatia	EU	6	7%
France	EU	10	12%
Greece	EU	12	14%
Italy	EU	15	18%
Montenegro	IPA	4	5%
Portugal	EU	4	5%
Slovenia	EU	6	7%
Spain	EU	14	16%

TABLE 12 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY BY THE MODULAR PROJECTS AND THE PLUS PROJECTS



GRAPH 6 – COUNTRIES INVOLVED IN THE GREEN GROWTH COMMUNITY BY THE MODULAR PROJECTS AND THE PLUS PROJECTS

If we consider all the countries involved by the MPs and the PLUS projects, we can notice that they are the same of the previous period (still missing Malta and United Kingdom - Gibraltar), but with a different weight. Indeed, the most relevant aspect is about the shift towards some of them, which share has increased.



GRAPH 7 – COUNTRIES INVOLVEMENT SHARE IN THE GREEN GROWTH COMMUNITY BY THE MODULAR PROJECTS AND THE PLUS PROJECTS

The last graph shows how after the implementation of the PLUS projects, even though the main Countries represented by the Community are confirmed, **Italy, Greece and especially Montenegro increase their shares (+1%, +1% and +4%)**. In general, the PLUS projects, even though starting from the main driver countries of their first phase, **moved towards the ones on the Mediterranean East coast** (in order to spread their tools and results). Looking at their specific partnerships (also mentioned in the projects page on our GGC platform), we can notice that **all of them moved towards Montenegro as new IPA Country partner**.

## PLUS PROJECTS LEVEL INDICATORS AND INDEXES

Even in this case, we took into account the projects level indexes defined through qualitative feedbacks of the projects for each aspect of the environment, society and economy pillars, for the two considered timeframes (project lifetime and medium/long-term period). The methodology was the same applied to the Modular Projects data.

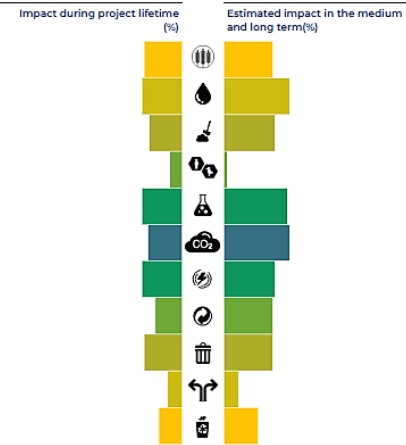


The following tables represent the weighted indicators and the impact expressed in percentage

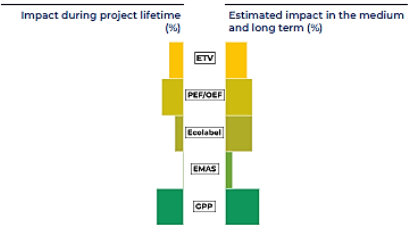
Environment

These indicators monitor the efficient use and management of natural resources and the adoption of tools for sustainable production and consumption.

**Environmental sustainability**  
These indicators measure the projects' contribution to different aspects of environmental sustainability including the use of natural resources, climate change, energy management, and waste prevention.



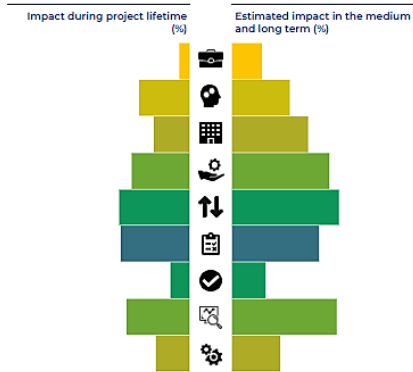
**Adoption of tools for sustainable production and consumption**  
These indicators estimate the projects' impact on the adoption of different tools such as environmental technologies, product certification, environmental management, and green public procurement.



Economy

These indicators monitor new green jobs and innovation activities created in the framework of the Modular Projects.

**Green jobs and innovation activities**  
These indicators assess the projects' contribution to the creation of jobs, new activities, and innovation.

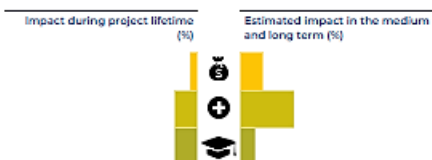


## Society

These indicators monitor social inclusion progress, initiatives developed to spread green culture through awareness-raising campaigns, stakeholders' involvement, training, and sustainable management of projects.

## Social Inclusion

Social inclusion indicators monitor the projects' impact in terms of: income, reduction of economic inequalities, improvement of health conditions, improved access to education, inclusion of disadvantaged groups.



## Green culture

Green culture indicators measure the projects' contribution to information and awareness raising activities, stakeholder involvement, training, and green management.



**FIGURE 14 - GGC INDEXES ENVIRONMENT, ECONOMY AND SOCIETY PAGE (17 PROJECTS)**

			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Weighted impact	Impact in %	Low	Medium	High	Weighted impact	Impact in %
ENVIRONMENT	Environmental sustainability	Use of natural resources	Reduced use of raw materials	1	3	1	13,5	21%	0	1	3	17,5	27%
			Reduced water consumption	2	3	1	14,5	22%	1	1	4	23,5	36%
			Conservation of soil resources	4	1	1	11,5	18%	1	3	2	18,5	28%
			Increased biodiversity protection	2	1	0	4,5	7%	1	0	0	1	2%
			Reduction of the use of chemicals	4	2	1	14	22%	0	5	2	22,5	35%
		Climate change and energy	Reduced CO2 emissions	5	1	1	12,5	19%	1	5	2	23,5	36%
			Reduced energy consumption	2	1	2	14,5	22%	1	1	3	18,5	28%
			Use of energy from renewable sources	2	3	0	9,5	15%	0	3	2	17,5	27%
		Waste prevention and management	Reduced waste production	1	1	2	13,5	21%	0	1	3	17,5	27%
			Increased separate collection	0	0	1	5	8%	0	0	1	5	8%
	Adoption of tools for sustainable production and consumption	Environmental technologies	Recycling rates	1	1	1	8,5	13%	0	1	2	12,5	19%
			ETV promotion	0	0	1	5	8%	0	1	1	7,5	12%
			PEF/OEF promotion	0	1	1	7,5	12%	0	2	1	10	15%
		Certification of products	Ecolabel promotion	1	1	0	3,5	5%	0	2	1	10	15%
			Promotion of EMAS registration	0	0	0	0	0%	0	1	0	2,5	4%
		Green Public Procurement	GPP promotion and implementation	0	2	1	10	15%	0	3	1	12,5	19%

**TABLE 13 – WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR ENVIRONMENT (17 PROJECTS)**

Project co-financed by the European Regional Development Fund

Partners:



REVOLVE



			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Weighted impact	Impact in %	Low	Medium	High	Weighted impact	Impact in %
ECONOMY	Green jobs and innovation activities	Job creation	New jobs	4	0	0	4	6%	1	4	0	11	17%
			Adaption of workers skills	1	5	1	18,5	28%	1	4	2	21	32%
		New activities and innovation	New businesses	3	4	0	13	20%	0	3	4	27,5	42%
			New products/services	3	5	1	20,5	32%	0	6	4	35	54%
			Replication / transfer	3	3	3	25,5	39%	1	3	6	38,5	59%
			Pilot lines	0	4	3	25	38%	1	2	5	31	48%
			Early product validation actions	2	2	0	7	11%	0	1	2	12,5	19%
			Clusters and open innovation through smart specialisation, and supporting technological and applied research	5	3	2	22,5	35%	0	3	6	37,5	58%
			Advanced manufacturing capabilities and first production	0	3	1	12,5	19%	0	1	3	17,5	27%

TABLE 14 - WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR ECONOMY (17 PROJECTS)

			Aspect	Impact during project lifetime					Estimated impact in the medium and long term				
				Low	Medium	High	Weighted impact	Impact in %	Low	Medium	High	Weighted impact	Impact in %
SOCIETY	Social inclusion	Income	Reduction of economic disparities	0	1	0	2,5	4%	0	1	1	7,5	12%
		Health	Improvement of health conditions	3	2	0	8	12%	1	3	2	18,5	28%
		Education	Improved access to education	0	1	1	7,5	12%	0	2	0	5	8%
		Opportunities	Inclusion of disadvantaged people	0	0	0	0	0%	0	0	0	0	0%
	Green culture	Information and awareness raising activities	No. of information/awareness raising campaigns realised	1	5	3	28,5	44%	2	4	3	27	42%
			No. of articles on the press	2	5	1	19,5	30%	2	3	3	24,5	38%
			No. of visits to project website	3	0	4	23	35%	1	2	4	26	40%
			No. of public institutions reached by information activities	1	3	4	28,5	44%	1	5	2	23,5	36%
			No. of private stakeholders reached by information activities	1	3	4	28,5	44%	2	3	3	24,5	38%
			No. of public institutions involved	3	2	4	28	43%	2	6	1	22	34%
		Stakeholders involvement	No. of networks involved	3	1	3	20,5	32%	1	5	1	18,5	28%
			No. of EU policy makers involved	1	0	1	6	9%	0	1	0	2,5	4%
			No. of national policy makers involved	1	0	1	6	9%	1	1	0	3,5	5%
			No. of regional and local policy makers involved	4	1	3	21,5	33%	2	6	0	17	26%
			No. of large enterprises involved	3	0	1	8	12%	1	1	0	3,5	5%
			No. of SMEs involved	1	3	5	33,5	52%	1	4	4	31	48%
			No. of trade associations involved	1	3	3	23,5	36%	0	4	2	20	31%
			No. of clusters involved	2	2	3	22	34%	2	4	1	17	26%
			No. of research & university institutions involved	2	3	4	29,5	45%	1	6	2	26	40%
			No. of public authorities involved	2	3	3	24,5	38%	0	5	2	22,5	35%
			No. of citizens involved	1	0	6	31	48%	1	2	3	21	32%
			No. of NGOs involved	2	0	4	22	34%	1	3	2	18,5	28%
		Training	No. of hours of training delivered to enterprises	2	3	3	24,5	38%	2	2	3	22	34%
			No. of hours of training delivered to PAs	1	1	3	18,5	28%	2	2	1	12	18%
			No. of hours of training delivered to other stakeholders	0	3	2	17,5	27%	0	2	3	20	31%
		Green management of projects	No. of green purchases realised for project implementation	0	0	1	5	8%	0	1	0	2,5	4%
			Expenditure on environmental goods and services for project implementation	1	0	2	11	17%	1	1	0	3,5	5%
			No. of low environmental impact events realised (workshops, seminars, conferences)	1	3	3	23,5	36%	2	4	0	12	18%
			No. of low environmental impact events realised/No. of events realised within the project	1	3	2	18,5	28%	3	4	0	13	20%

TABLE 15 - WEIGHTED INDICATORS AND PERCENTAGE INDEXES FOR THE PILLAR SOCIETY (17 PROJECTS)



## Environment

By analysing the indexes related to environment, updated with the contribution of the PLUS projects data, it is possible to confirm the major impacts related to environmental sustainability, while the adoption of tools for sustainable production and consumption are still less addressed (except for the part related to the Green Public Procurement Promotion). Anyway, we can notice some improvements concerning the more relevant aspects detected during the lifetime of the projects:

- Reduced use of raw materials (21% instead of 19%, with an increase of 2%);
- Reduced water consumption (22% instead of 18%, with an increase of 4%);
- Reduction of the use of chemicals (22% instead of 20%, with an increase of 2%);
- Reduced waste production (21% instead of 19%, with an increase of 2%).

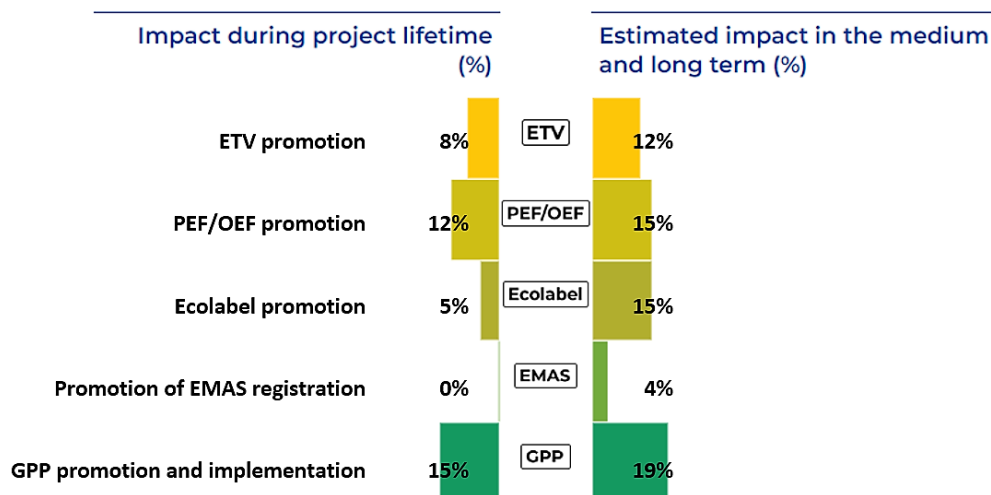
The other two relevant ones identified for the previous period (Reduction of energy consumption and Reduced CO<sub>2</sub> emissions, 22% and 19%) are confirmed; while we can notice an interesting increase in three aspects not detected before:

- Conservation of soil resources (18% instead of 16%, with an increase of 2%);
- GPP promotion and implementation (15% instead of 12%, with an increase of 3%).
- Recycling rates (13% instead of 12%, with an increase of 1%).

The less impacted aspects identified before are all confirmed (Increased biodiversity protection - 7%; Increased separate collection - 8%; ETV promotion - 8%; Ecolabel promotion - 5%; Promotion of EMAS registration - 0%).

Instead, by looking at the period after the closure of the projects, it is possible to notice that the PLUS projects' implementation contributed to enhance the impact of some indicators already identified before:

- Reduction of water consumption (increase of 14% instead of 10%);
- Reduction of the use of chemicals (increase of 13% instead of 11%).



**FIGURE 15 - GREEN GROWTH INDEXES OF THE ENVIRONMENTAL PILLAR ON ADOPTION OF TOOLS FOR SUSTAINABLE PRODUCTION AND CONSUMPTION (17 PROJECTS)**

In other cases, they confirmed the previous data (Reduced CO<sub>2</sub> emissions - increase of 17%; Reduced energy consumption – increase of 6%; Use of energy from renewable sources - increase of 12%; Increased separate collection – no increase; ETV promotion – increase of 4%; PEF/OEF promotion – increase of 4%; Ecolabel promotion increase of 10%; Promotion of EMAS registration – increase of 4%; GPP promotion and implementation – increase of 4%). In one case they imply a decrease (Reduced use of raw materials - decrease from 8% to 6% of incremented share). In other instances, they contributed to the increase of some indicators not noticed before, underlining the wider impact of their activities:

- Conservation of soil resources (increase of 11% instead of 8%);
- Reduced waste production (increase of 6% instead of 8%);
- Recycling rates (increase of 6% instead of 8%).

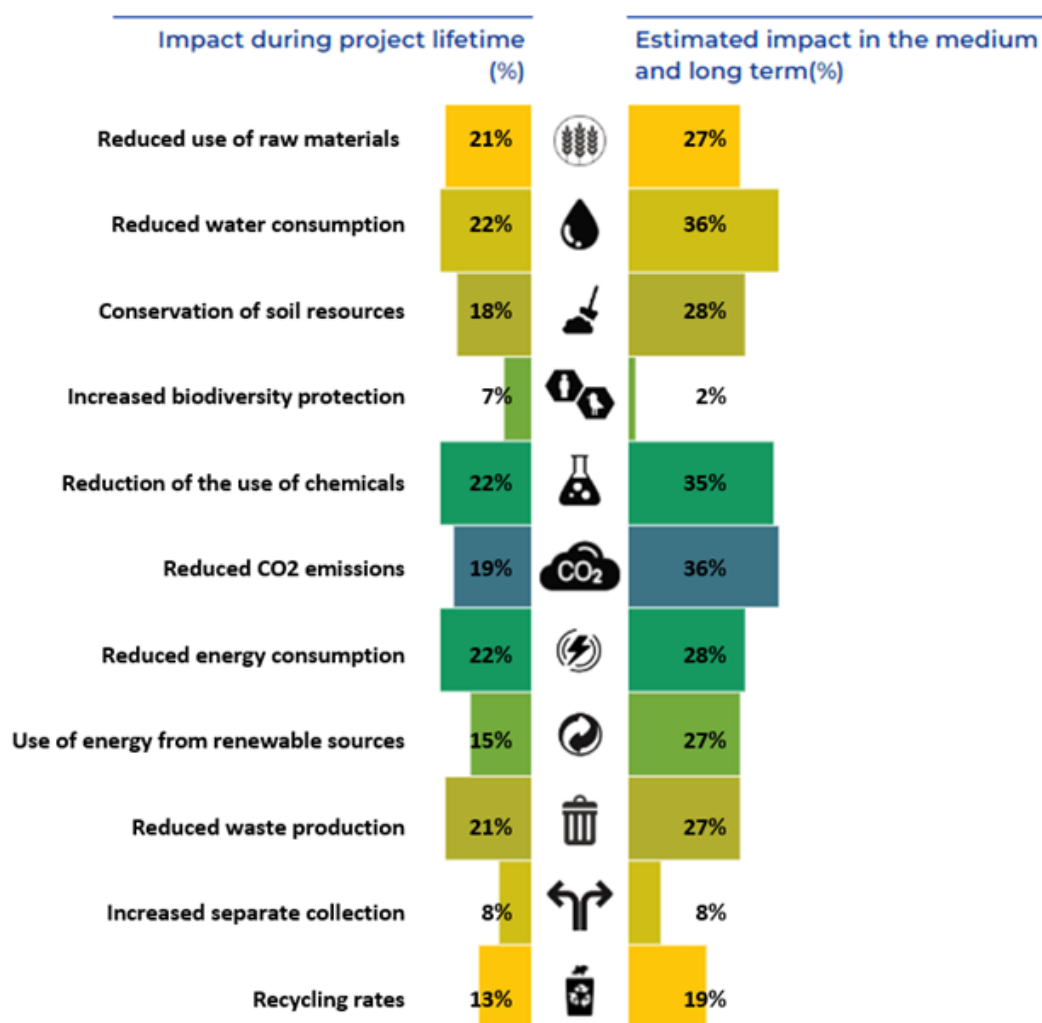


FIGURE 16 - GREEN GROWTH INDEXES OF THE ENVIRONMENTAL PILLAR ON ENVIRONMENTAL SUSTAINABILITY (17 PROJECTS)

In general, even though maintaining almost the same impact on the Environment indicators, we can conclude that the implementation of the PLUS project has contributed to imprint a slightly different approach to the previous objectives. The consequent enhancement of some aspects was due both to the changes in their partnerships (and the role of the countries involved) and to the possibility to push on them given the experience realized in the previous phase.

## Economy

The PLUS projects contributed to significantly enhance the Community projects impact on the Economy indicators. Apart from the “New Jobs” data, which is confirmed (6%), all the others related at the projects’ lifetime increased. It confirms the strong effect of the Community in the economic sector, mainly addressing SMEs, clusters, and other business association. Considering the projects lifespan data, especially “Replication and transfer” (39%, +6% compared to the previous data) and “Pilot lines” (38%, +3% compared to the previous data) indicators confirm their driver role among this pillar. But also, the ones about “Clusters and open innovation through smart specialization, and supporting technological and applied research” and “New product services” show a very significant increase (35%, +10% compared to the previous data; 32%, +4% compared to the previous data).

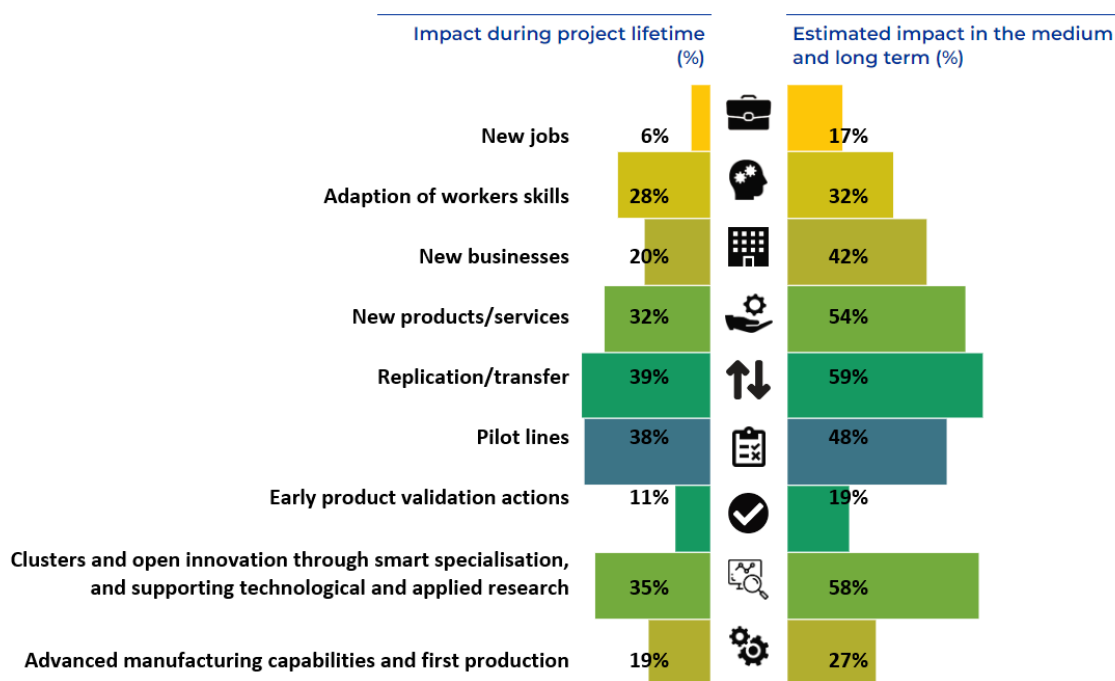


FIGURE 17 - GREEN GROWTH INDEXES OF THE ECONOMY PILLAR ABOUT GREEN JOBS AND INNOVATION (17 PROJECTS)



Once again, all the indicators increase their value in the long period (and the related increase percentage between the brief and the long period), apart from the ones about “New jobs”, “Adaption of workers skills” and “Replication / transfer” (which increase percentage from the brief to the long period are confirmed). It shows that also the PLUS projects have implemented structured actions to ensure the long - lasting of results. In particular, it is interesting to notice that, apart from a general increase enhanced for almost all the indicators (+4% for Early product validation actions, New businesses, New products/services, Pilot lines and Advanced manufacturing capabilities and first production), the PLUS projects contributed to an important increase of the data related to “Clusters and open innovation (..)” (+6%). This is the consequence of the increasing interest of some of the PLUS projects towards this objective (ARISTOIL PLUS and PEFMED PLUS), as proved by the main activities realized in order to enhance the clusters already developed during the previous phase (ARISTOIL PLUS) and to link their activities to S3 strategies realized in the countries involved.

## Society

The data from the PLUS projects do not change the main results about Social Inclusion indicators, both in terms of relevance and of impact during and after the projects.

Concerning the Green Culture ones, the PLUS projects data further increase their high impact during the projects’ implementation for almost all of them (with a general average of +8%). Namely, there have been an improvement in all the indicators related to the “Information and awareness raising activities”<sup>22</sup> and to the “Training”<sup>23</sup> ones with an increment of about 10/11% for all of them, compared to the increment registered without the PLUS projects data. This is confirmed also for the “Stakeholders involvement”<sup>24</sup> indicators with an increment of about 6%, except for the ones about “No. of EU policy makers involved” and “No. of national policy makers involved” (which increase is confirmed). While it happens only partially for the “Green management of projects”<sup>25</sup> indicators, where the improvement is only about the “No. of low environmental impact events realized” (+12%) and “No. of low environmental impact events realized/No. of events realized within the project” (+4%).

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<sup>22</sup> No. of information/awareness raising campaigns realised, No. of articles on the press, No. of visits to project website, No. of public institutions reached by information activities, No. of private stakeholders reached by information activities.

<sup>23</sup> No. of hours of training delivered to enterprises, No. of hours of training delivered to Pas, No. of hours of training delivered to other stakeholders.

<sup>24</sup> No. of public institutions involved, No. of networks involved, No. of regional and local policy makers involved, No. of large enterprises involved, No. of SMEs involved, No. of trade associations involved, No. of clusters involved, No. of research & university institutions involved, No. of public authorities involved, No. of citizens involved, No. of NGOs involved.

<sup>25</sup> NO changes for the improvement data about the No. of green purchases realised for project implementation and the Expenditure on environmental goods and services for project implementation.

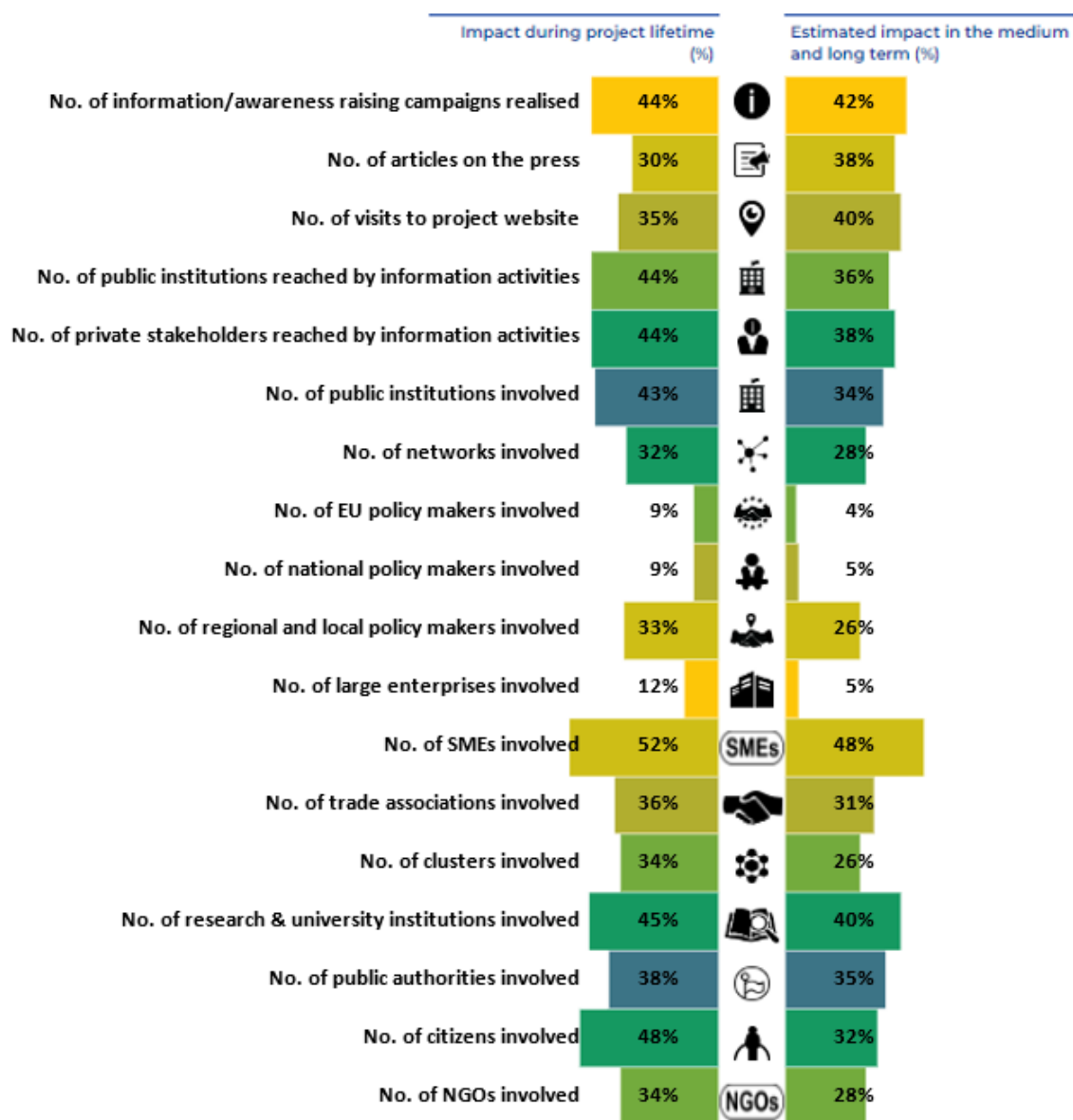


FIGURE 18 - GREEN GROWTH INDEXES OF THE SOCIETY PILLAR ABOUT GREEN CULTURE (INFORMATION, AWARENESS RAISING ACTIVITIES AND STAKEHOLDERS' INVOLVEMENT – 17 PROJECTS)

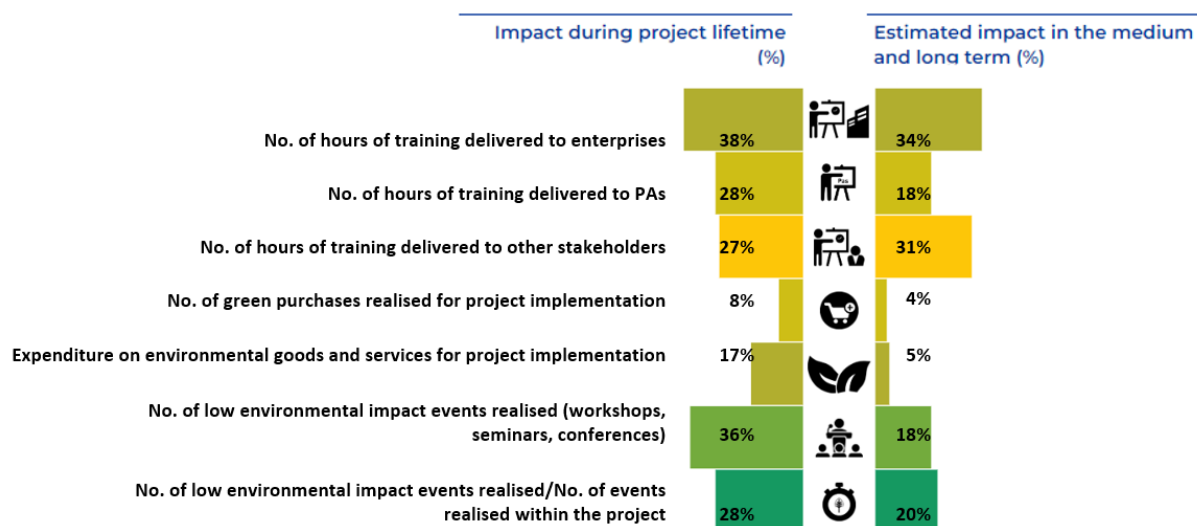


FIGURE 19 - GREEN GROWTH INDEXES OF THE SOCIETY PILLAR ABOUT GREEN CULTURE (TRAINING AND GREEN MANAGEMENT OF PROJECTS – 17 PROJECTS)

The general improvement of the data about the “brief period” implies an interesting result for the long period data too, which in the previous phase showed a general decrease for almost all of them. With the PLUS projects data, this decrease decreases in some cases<sup>26</sup>, increases<sup>27</sup> in others (around +2/4%), showing a better awareness about the possibility to continue the “Information and awareness raising activities”, to actually involve the stakeholders and to realize the training activities planned during the projects implementation.

Furtherly, it is interesting to underline that the positive data about the percentage improvement of “No. of articles on the press” and the “No. of visits to project website”, have been reinforced by the PLUS projects data (+8% and +5%). Otherwise, the positive ones about the “Reduction of economic disparities” and “Improvement of health conditions” belonging to the Social Inclusion Indicators are confirmed (+ 8% and +16%). In addition, the one about the “No. of hours of training delivered to other stakeholders” shows an increase (from 0% to

<sup>26</sup> No. of information/awareness raising campaigns realized, private stakeholders reached by information activities, networks SMEs and NGOs involved and hours of training delivered to enterprises.

<sup>27</sup> No. of public institutions involved, regional and local policy makers involved, large enterprises involved, trade associations involved, citizens involved and of low environmental impact events realized (workshops, seminars, conferences).



+4%), due to the update from ARISTOIL PLUS project. This brought to underline that in some cases, the PLUS projects experience could pave the way to plan other training activities, given the interest showed towards the tools and results developed.

## 6. Conclusions

The Green Growth Indexes arose from the need to measure the impact of the Green Growth Community in the Mediterranean area and the contribution of the Modular Projects to sustainable development, within the projects' lifespan and in a medium, long-term perspective after the projects' closure.

Considering the heterogeneity of the topics addressed by the 14 Modular Projects, gathered in the four thematic areas, and the potential direct and indirect impacts on many transversal aspects of the green growth of the projects, the SYNGGI consortium, back in 2017, opted for the definition of less structured indexes, with a broad scope, instead of the many, structured and quantitative indicators available. However, the green growth indicators have been defined based on a benchmark analysis which includes many international organisations, bodies and programmes, as described in the Chapter 2 of this report.

A qualitative approach has been preferred to a quantitative one, in order to make easier gathering the inputs of the 14 modular projects, having different scopes on different focus areas. Nevertheless, the indexes, calculated on the basis of the projects inputs, provide an enlightening outlook of the contribution of the Community to the Interreg MED Programme's objectives, as well as the contribution to other relevant sustainable development strategies for the Mediterranean.

The three domains have been identified to integrate the economic development with the environment and social dimension, also considering the transversal approach to sustainable development of the Green Growth Community in the Mediterranean area. Considering the objective of the Community of aiming at providing support to SMEs for innovating in the field of the green economy, it seems clear, from the analysis of the indexes, that this goal has been successfully achieved. The large presence of SMEs and clusters, coupled together with Research institutions and Public Authorities, have been ensuring an integrated approach to promote innovation and best practices, through cooperation between a varied typology of actors.

Although the Community is composed by projects related to four different focus areas, the fostering of a sustainable development based on the sound management of the natural resources is a clear objective among all of them, as plainly recognisable by the indexes of the environment pillar. The development and the promotion of green and circular solutions in eco-management, eco-design, environmental footprint reduction, production and sustainable best practices are key, essential features of all the projects.





The circular approach has been evident as a transversal trait of the Community since the beginning of the implementation, as well the character of development, transfer and replication of new products and best practices. On the long run, the indexes of the Economy pillar will increase, confirming the leverage effect of the Community on the addressed field, thanks to the strong and active engagement, strengthening and empowerment of innovation clusters and networks, in particular in their transnational dimension.

The innovation capacity has been ensured fostering and exploiting the connection between clusters, research SMEs and public administration, as well as the mobilisation of end users, through the creation of new green jobs.

Despite the good performance in the society pillar, it must be noticed how the indexes tend to decrease after the closure of the projects. This can be explained by the fact that the vast majority of the Community's projects have had a pilot purpose and, despite the replication/transferring effort is high, some activities and tasks, that are specific for the implementation period, will not be performed after the closure. However, the impact of this weakness can be reduced considering the fundamental role of the Community, which provides capitalization and mainstreaming actions, engaging multi-level political stakeholders and decision makers, in order to make the results effective in a long-term perspective.

The implementation of the PLUS projects, despite their different approaches and activities, contributed to enhance the best results in the brief and long period of the MPs projects. In general they affected the Community results on three main aspects:

- **Enhancement of the role of the countries involved in the previous projects:** in some cases, the partners belonging from these countries played a fundamental role as driver towards the implementations of effective tools and best practices in new countries, involving new partners;
- **Shift towards the Mediterranean East Coast regions:** the PLUS projects moved towards new countries or selected the previous partners of the East Countries as the best new beneficiaries of their activities. In particular, Montenegro was a relevant actor in the new projects implementation;
- **Improvement of the data after the projects' implementation (long period):** the capitalization of such relevant projects, offered them and to all the Community the opportunity to stress some aspects, allowing better expectations for the period after the end of the projects. The main focus about some of the environment, social and especially economic indicators show how the PLUS projects implementation contributed to select some relevant aspects and goals and start building on them, with a clearer vision about their possible impact ad development in the future.

In general, the capitalization proved to be a good opportunity to increase the impact of the Green Growth Community projects on the Mediterranean region, paving the way for further perspectives in the pursuing the



green growth goals. It offered the occasion for some projects to adapt to the scenario changed during their previous implementation and to demonstrate the high value of their tools and results. Mostly, it contributed to wider the number of regions, stakeholders and institutions involved, showing once again the high relevance of the Green Growth Community and replicability of its best practices in all the Mediterranean area.