



VOLUNTARY LOCAL REVIEW

22

**Abruzzo Region,
Marche Region,
Umbria Region**



Presidential statements



Emanuele Imprudente, Abruzzo Region Vice President

“The Abruzzo Region intends to continue and strengthen the collaboration activities with the Regions of Umbria and Marche as fundamental for the achievement of the objectives of the Regional Strategy for Sustainable Development. In the future, further involvement and comparison between the Regions is hoped, also through the establishment of technical tables aimed at comparing specific issues”.

Francesco Acquaroli, Marche Region President

“Sustainability represents a bottom-up process and acts in a transversal way. Several experimentation areas have been activated, starting from our villages, which are places that represent a fundamental heritage of regional identity. On these areas, interventions such as the digital transition, the development of economic activities, the cultural heritage and activities, the active labor policies, the support for business creation and the agricultural and food supply chain promotion converge. The final aim is the social, economic and environmental sustainability.”



Roberto Morroni, Umbria Region Vice President and Councillor for agricultural and agri-food policies, protection and environmental enhancement

His department deals with:
Agricultural and agri-food policies, Rural Development, Forest planning and mountain development, Promotion of naturalistic systems, Protected areas and parks, Hunting and Fishing, Energy from renewable sources, Environmental protection and enhancement, Pollution prevention and protection, Regional waste plan, Water risk, Integrated water cycle, Quarries, Mines and mineral Waters. For the purposes of the Regional Strategy for Sustainable Development, his department ensures the coordination of the steering committee with other regional departments and Municipalities.



Index

Presidential statements.....	2
Introduction.....	4
Resilience across Regions - a successful case of cooperation.....	5
1.1. General data about the regional partnership.....	5
1.1.1. Multilevel and integrated forms of cooperation	6
1.2. Governance and stakeholders involvement	7
1.3. Policies coherence	9
Municipal planning methodological criteria - The Umbria Region.....	12
2.1. The relation between municipal planning methodological criteria and SDGs	12
2.2. Future recommendations.....	13
Climate change – the Marche Region.....	14
3.1. The relation between climate change and the SDGs.....	16
3.2. Future recommendations	18
Green infrastructures – the Abruzzo Region.....	19
4.1. The relation between green infrastructure and the SDGs	20
4.2. Future recommendations	21
Conclusion	23
Acknowledgment.....	24

Introduction



RESIDENTS (n.)	
Abruzzo	1.281.012
Marche	1.498.236
Umbria	865.452
TOT	3.644.700

TOTAL AREA (Km ²)	
Abruzzo	10.832
Marche	9.401
Umbria	8.464
TOT	28.697

GDP (€/per capita in PPS)	
Abruzzo	24.000
Marche	26.500
Umbria	24.900
Italy	28.000

Map of Italy with our three Regions

Who?

The Italian Republic is constituted by 20 Regions, which are autonomous entities with defined powers and represent the first level of the local division. Abruzzo, Marche and Umbria represent three Regions with ordinary Statutes and with no Metropolitan Cities in their territory.

Why?

Our three Regions decided to join forces and to create their own administrative grouping, in order to explore the issue of *resilience*, which, in our experience, plays a crucial role after the series of earthquakes that, in 2016, destructively affected part of our territory.

Where?

Abruzzo, Marche and Umbria are three Regions in the central part of the Italian peninsula.



What?

After the adoption of the Agenda 2030 by the UN, the Italian government, in 2017, approved its national Strategy for Sustainable Development. Consequently, the Regional Administrations, as well as the autonomous Provinces, started their own process aimed to develop local Strategies.

When?

The Italian Ministry for Ecological Transition foster the cooperation between Regions, in order to develop local strategies.

Some 65% of the actual Goals and targets cannot possibly be achieved without the contribution of local and regional governments.

Voluntary local Reviews. A Comparative Analysis of Existing VLRs, UCLG, UN Habitat, 2020

1

Resilience across Regions - a successful case of cooperation

1.1. General data about the regional partnership



The Regions of Abruzzo, Marche and Umbria are defining their regional strategies for sustainable development and, at the request of the Ministry for Ecological Transition, have started a strong collaboration to deepen the application of a specific theme at the territorial level (**resilience**).

The three Regions decided to choose the one of resilience as the joint issue in regard of their tragic common experience result of the 2016 Central Italy earthquake, actually composed of several single seismic events, which destroyed a significant part of their inhabited centres, causing extensive damages, not only under the economic aspect, but under the social one too.

The theme of resilience is a strategic tool for the Regions in order to adequately develop their actions and principles aimed at ensuring sustainability according to local and regional needs or circumstances. Although Abruzzo, Marche and Umbria are currently at different administrative stages regarding the adoption and implementation of their Regional Strategies for Sustainable Development, resilience is a common element.

In this regard, in December 2021, the Marche Region Legislative Assembly approved the Regional Strategy of Sustainable Development (*Strategia Regionale di Sviluppo Sostenibile – SRSvS*), aimed to integrate the 17 SDGs pursuit into the regional future planning and strategies. Umbria Region, in October 2021 with the administrative act n. 1016, pre-approved the preliminary document for its Regional Strategy of Sustainable Development. Abruzzo Region, on the same month (October 2021) approved the Regional Strategy for Sustainable Development Plan, with the Regional Council Resolution n. 665/2021.

In order to develop the theme of resilience and to work in line with the various local needs, the three Regions synergistically cooperate also with the academia and with regional Universities. Abruzzo Region works together with the Department of Civil and Environmental Engineering and Architecture within the University of L’Aquila, Umbria Region with the Department of Engineering within the University of Perugia, Marche Region with the University of Camerino and the Polytechnic University of Marche. This kind of cross-sector partnership ensures the production of various documents and proposals, which are extremely useful in order to create common strategic guidelines upon which Regions are supposed to base their own choices.

Therefore, after the already mentioned ministerial request, the Regions have been able to develop three different directions of development, perfectly integrated within the aspect of resilience:

1. Developing municipal **planning methodological criteria and guidelines** aimed to ensure the territorial resilience and the sustainable rebuilding, also using supra-municipal strategic documents as Regional Strategy of Sustainable Development territorial references;

2. Addressing the **climate change issue** in a synergistic way by locating the problem with respect to the Central Apennine Mountains river basin (Tiber river basin);
3. Implementing the regional and interregional **green infrastructure** through the enforcement of the interregional Ecological Network.

1.1.1. Multilevel and integrated forms of cooperation



Abruzzo, Marche and Umbria set up a specific concertation system using both formal and informal means of cooperation. In detail, referring to resilience, the three Regions have decided to cooperate without signing a specific agreement (informal mean), but defining a common working method:

- 1) one coordinator for general activities has been identified (Umbria Region),
- 2) the coordinator established a shared agenda of working meetings,
- 3) each shared step was reported to the Ministry.

While Umbria coordinates the general activities, each Region is responsible for a specific direction of development (1st direction Planning methodological criteria: Umbria; 2nd direction Climate change issue: Marche; 3rd direction Green Infrastructure: Abruzzo).

In addition, in order to ensure the full development and implementation of the three directors, several formal means of cooperation have been developed within the integrated system, such as the Q-CUMBER protocol (*see chapter 4*).

Municipalities, which represent the lower administrative level of cooperation and have the most direct connection with local stakeholders and citizens, have been involved within the multi-level partnership by each regional administration. In this regard, the Marche Region developed a specific protocol, aimed to guarantee the cooperation with the National Association of Italian Municipalities (*Associazione Nazionale Comuni Italiani - ANCI*) and to spread sustainability criteria at local level. In order to strengthen the implementation of the three directions of sustainability, regional administrations identified several Municipalities that have represented “pilot cases” and that have the capability to guarantee the cooperation at all levels. In fact, these Municipalities operate with their own Regions, as well as with the other Regions within the working group.

1.2. Governance and stakeholders involvement

The main objective of our regional grouping is to ensure the full cooperation and integration for what concerns all principles and actions of sustainability, with a specific focus on the issue of resilience. In order to do so, we are still trying to define and enhance the multi-level and multi-actor form of collaboration, which perfectly meets national and local needs.

<p>Governance</p>	<p>Our aim is the share as well as the contagion of ideas and good practices related to the principles of sustainable development and to the SDGs across different administrative levels. For what concerns the actions falling into category A, in line with the provisions of the Agreement signed with the Italian Ministry, the Regions have prepared the setting up of control rooms, which represented a crucial moment of governance.</p> <p>The construction of the governance for the Regional Strategies definition has moved along two paths. The first path was implemented through constant dialogue with representatives of the Ministry and of other Regions, the second path was activated with the involvement of institutional actors such as Municipalities, Universities and civil society, concerning the schedule and the governance of territories in a climate change scenario.</p> <p>In this regard, the involvement of local institutions and civil society, falling into category B actions, has been activated on two fronts: the first one, due to the contribution provided by Environmental Education Centres (<i>Centri di Educazione Ambientale – CEA</i>), which have activated consultation and participation forms in the field of environmental education and sustainable development within schools. For what concerns the Abruzzo Region, the project involved the creation of educational materials on the subject of sustainability and the training of teachers and students concerning the issue of hydrogen and fuel cells, with the objective to foster the general interest in this area. The educational materials, developed as part of the project, are available at the dedicated website (https://www.hyschools.eu/platform). The project was concluded in February 2020, but coordination with schools is ongoing.</p> <p>The second front of local institutions involvement has been developed as part of the participatory process carried out within the Regions with the control room, due to thematic meetings which allow the participation of local actors and, in particular, of Park Authorities.</p>
	<p>Regional activities:</p> <ul style="list-style-type: none"> • The Abruzzo Region control room is composed by managers of regional services who relate to the issues of sustainable development and it is considered to be the hub between policy activities and typically managerial and management activities. After the setting up of the control room, a series of tools have been launched to make territorial consultations even more possible. • Defining all the elements of the regional governance was the first regional step toward the Marche Region Strategy definition. The control room is composed by regional managers of sectors, which are somehow connected to sustainable development, and represents the meeting point between managerial and technical activities and the political sphere. The transversal nature of this control room allows the complete balance between all different dimensions of sustainable development and the full cooperation. In this regard, several training courses addressed to local administrations, which have been designed in order to ensure the lifelong learning opportunities (SDG 4) within the administrative area, have been launched. • The Umbria Region control room is chaired by Roberto Morroni, the regional vice-president, and it is composed by regional directors and structures and the Regional Agency for Environmental Protection. The control room aims to coordinate and manage all the development activities and the contributions resulting from regional fora within the Strategy itself.

Stakeholders involvement	<p>Since the 17 SDGs, which constitute the core of our sustainability goals and strategies, affect every aspect of everyone’s life, the full and constant involvement of stakeholders, including students, civil society, third sector and interest groups, represents an essential condition for the achievement of our local sustainable objectives.</p>
	<p>Regional activities:</p> <ul style="list-style-type: none"> • The Marche Region established several moments of confrontation between the regional administration and the stakeholders. Besides the Regional Forum of Sustainable Development, civil society, organizations and the third sector have been involved due to multiple tools. In particular: the initial survey aimed to define the common knowledge of sustainability principles, the six educational and informative webinars, several online workshops, moments of public consultation, activities for children and young people and the Regional information, training and environmental education system (<i>INFEA Marche</i>) events, realised due to the Environmental Education Centres efforts. For what concerns the Regional Forum of Sustainable Development, the Region has launched its first session before the drafting of the Strategy, in order to define the issues that are perceived to be of major relevance by civil society. Then, after the Regional Strategy approval, the Marche Region decided to launch the second session of Forum, in order to guarantee the involvement and the information of civil society for what concerns the main points of the Strategy. In particular, the latest session focuses on the issue of climate change and on the adaptation response, which is at the base of the future Regional Plan. • The Umbria Region is carrying out a specific participatory process due to the activation of six territorial FORA articulated on the basis of homogeneous areas. The FORA are coordinate by the Municipalities Association for Sustainable Development (<i>Associazione dei Comuni per lo Sviluppo Sostenibile - ANCI-FELCOS</i>) and they provide thematic meetings about the four main areas of action defined by the National Strategy for Sustainable Development (People, Peace, Planet and Prosperity – <i>the four P</i>). The discussion has been opened starting from the Strategy preliminary document, which was pre-approved by the Regional Council with Resolution 1016 of 17th October 2021. The objectives defined with the activation of the FORA are: involving the community members, in order to make people active subjects in the path towards sustainability objectives; adopting, as working method, the integration and involvement of local actors, Municipalities, Provinces, Research Institutes and Universities, but also neighboring Regions, National Park Authorities, Regional Agencies for Environmental Protection (<i>Agenzie Regionali per la Protezione dell’Ambiente – ARPA</i>) and other subjects, in order to create new opportunities and to ensure active resilience against difficulties and problems. At the end of the confrontation phase, the regional objective is to carry out a synthesis of the contributions received in order to define the participated Regional Strategy document. • The Abruzzo Region has signed a Memorandum of Understanding with the Department of Civil, Construction-Architecture and Environmental Engineering (DICEAA) of the University of L’Aquila and with the Regional Parks. This protocol establishes that the Abruzzo Region is the lead body that will follow the activities through the establishment of a permanent technical table. The aims of the Technical Roundtable are related to the experimentation and promotion of sustainable urban planning, environmental monitoring, ecological connectivity and adaptation to models of climate change. The activities that have been planned under the Memorandum of Understanding will be identified and regulated from time to time in subsequent implementation agreements. Through the Environmental Education Centres (CEA), training and awareness raising activities in schools on SNSvS issues were also launched.

1.3. Policies coherence

<p>Policies coherence</p>	<p>Our three Regions aim to ensure the full horizontal as well as vertical forms of policies coherence. In particular, while the horizontal coherence refers to the cooperation between Regions, the vertical one is related to the integration between ministerial and regional or local actions.</p> <ul style="list-style-type: none"> • For what concerns the Abruzzo Region, the Strategy constitutes an important strategic reference for the transformations of the territory and it is the object of integration with all regional planning and programming and with the related implementation phases. Among the planning documents, the Strategic Planning Document (DSP) and the Regional Economics and Finance Document (DEFR) are of particular importance. The DSP and the DEFR, in fact, analyse and summarize the results of the implementation of regional public policies (in economic, social, territorial and financial terms) in the medium term and describe the actions to be implemented, linking them to three strategic pillars: combining growth sustainable economy with the reduction of inequalities, while respecting the balance of public finance. The national and regional strategies are linked with the official economic policy documents with particular reference to the National Reform Program (PNR) and the Economic and Financial Documents (DEF and DEFR) and, following the Covid-19 pandemic, with the National Recovery and Resilience Plan (PNRR). The implementation of the Strategy provides a multilevel governance approach, within which the Region has the task of declining the general objectives and lines of action identified on a local scale, implementing a "territorialisation" of the national approach. • The main planning documents of the Marche Region are developed with reference to the sustainability principles. The Region aims to ensure the full coherence between, on the one hand, the objectives and activities of its Strategy of Sustainable Development and its Economic and Financial Document, European Structural and Investment Funds Management Plan (2021-2027) and Performance Plan. While, for what concerns the environmental context, the coherence is guarantee due to specific tools, such as the Strategic Environmental Assessment (SEA) procedure or the analysis of coherence for plans not following under the SEA regulation. In this regard, the Marche Region has already planned a specific training course, addressed to internal administrative officials, which is going to highlight the importance and describe the using methods of these forms of analysis. • The Umbria Region is acting in order to develop the Regional Strategy of Sustainable Development in line with the Regional Economic and Financial Document and with the strategic document of the EU 2021-2027 programming period. Moreover, the Strategy actions are supposed to be harmonised with the Recovery and Resilience Plan missions.
----------------------------------	--

Regional toolbox:

- The **Global citizenship education** has been used within the Marche Region as a transversal tool in order to guarantee the policies coherence.

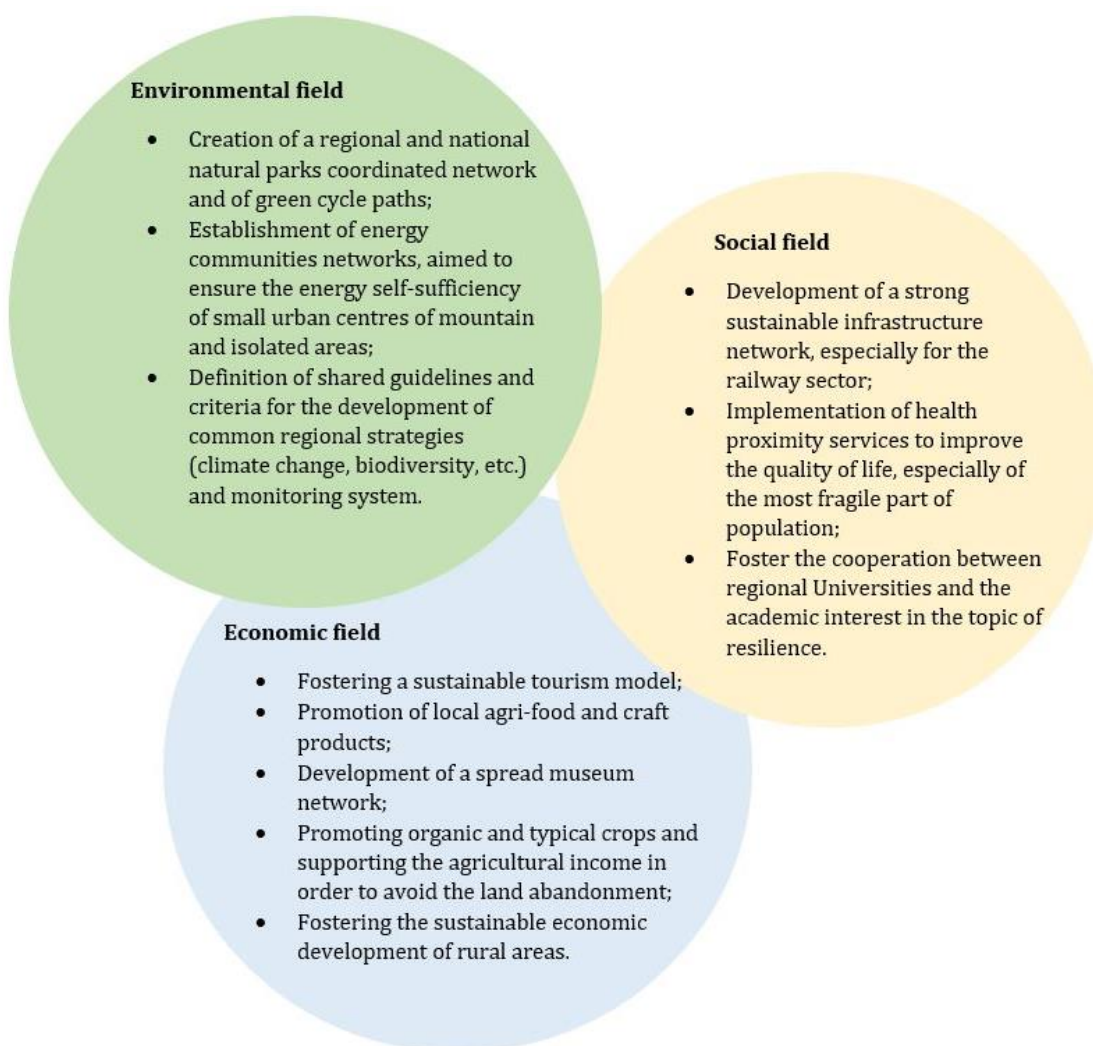
Within the Agenda 2030, the SDG 17 represents a crucial instrument that could be used in order to guarantee the cooperation between administrations at all levels, as well as the policies coherence within the same subject.



Strengthen the means of implementation and revitalize the global partnership for sustainable development

Strong forms of partnership between nations are necessary for the achievement of all the Sustainable Development Goals introduced within the 2030 Agenda. At the same time, in the local context, a stable actions and policies integration between the three Regions improves our capability to achieve sustainability at every level. Despite the administrative borders, our territories are strongly and intrinsically interconnected due to geographical, morphological, social and economic similarities, which have to be encouraged and explored.

In this regard, the SDG 17 “Partnership for the goals” may represent not only one of our goals, but also an important tool for the achievement of future objectives and for the coordination of our policies and strategies. In addition, for what concerns our regional grouping and the resulting implementation of the three directions of development, the SDG 17, in its local meaning, constitutes the main instrument and the best guarantee of success. Our future common actions, aimed at implementing the three directions, are supposed to affect any regional sphere of action:



For what concerns the issue of climate change, meant as one of the three shared directions of development adopted by our regional grouping, the *partnership of goals*, which represent the core of SDG 17, has an even more important role. In fact, in order to achieve significant goals against the threats posed by climate change, which has no boundaries, the regional strategies, including the ones related to the local adaptation plans, should follow common trends and principles. In particular, during the preparatory phase, our three regional administrations are willing to share guidelines, data and

methodologies, to ensure the best possible form of cooperation and partnership. In this regard our goals are:

- Implementing an *early warning model*, for the weather alert;
- Fostering common actions in order to reduce soil consumption and desertification;
- Acting as a regional grouping for the definition of the National Climate Change Adaptation Plan (*PNACC- Piano Nazionale di Adattamento ai Cambiamenti Climatici*);
- Implementing regional and inter-regional green infrastructure, as well as all the other practices that may be useful for carbon sink;
- Acting for the update of the National Strategy for Sustainable Development monitoring system, by defining new indicators, which should be more consistent and effective in relation to the climate change issue.

However, the *partnership for goals*, which represents the cornerstone of SDG 17, is not just about interregional cooperation, but also about the one between Regions and other subjects, especially local Universities. In particular, this cross-sectoral form of partnership aims to define a common knowledge framework and the most suitable indicators system, develop models for facing disasters and guarantee quick recovery procedures, ensure the correct territorial and emergency planning criteria and base development and recovery models on the principles of circular economy, always by including local stakeholders and actors. In this regard, the University that cooperates with the Abruzzo Region aims to develop a specific methodology for the inclusion of the Ecological Network in regional legislation and criteria for evaluating the ecosystem occlusion caused by infrastructures, and provide adequate training to public administrations. The Marche Region supports the permanent cooperation with some of its regional Universities in order to define the reference areas for environmental assessments, for the right definition of future actions and the proper way to apply the ITACA Protocol. While, the University of the Umbria Region, in line with the other Universities, aims to develop methodological criteria and guidelines for municipal planning in order to implement the territorial resilience and the sustainable reconstruction, and to create specific tools to use resources and funding according to the most urgent priorities. Moreover, the Umbria Regions is cooperating with the University in order to develop the Regional Strategy of Sustainable Development on the level of homogeneous territorial areas (the Region defined six different areas), with the aim to identify specific needs and adequate actions for the local context.

2

Municipal planning methodological criteria - The Umbria Region

The common condition and the consequent needs of Municipalities affected by the seismic events between 2016 and 2017 have pushed our three Regions to cooperate in order to define the guidelines for municipal planning in territorial contexts with high seismicity. These guidelines aim to share a common planning model, not conditioned by administrative boundaries and able to identify effective territorial solutions in order to immediately respond to the emergency and, in particular, to ensure an adequate resilient response for the urban building context affected by the disaster.

Regional toolbox:

- **The Q-CUMBER protocol** between Ministry of ecologic transition, Marche Region, Abruzzo Region and Umbria Region, aims to share and test a tool for the support to decision-making in planning, programming, design and validation to different territorial and environmental contexts in environmental evaluations (Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)). For the SEA, the protocol is testing a common approach in urban planning, based on the implementation of ecological network, for some Municipality in the Apennine area shared by the three Regions (for Marche Region, three Municipalities are currently participating to the test: Castelsantangelo sul Nera, Arquata del Tronto and Colli al Metauro; for Umbria Region Norcia, Nocera Umbra, Città di Castello, Narni, Bastia Umbra; for Abruzzo Region Collaromele, Fagnano Alto, Scoppito, Ocre).
For EIA, the tool is tested for different project categories: Marche Region is testing the tool for projects interacting with river ecosystems; Umbria Region for the mining activities and waste treatment systems; Abruzzo Region for photovoltaic and livestock projects as well as for the definition of environmental sustainability actions consistent with the SNSvS.
- **VAUTERECO** (Evaluation of Urban and Territorial Assets for resilience of communities) protocol between Ministry for Ecological Transition, University of Camerino, Polytechnic University of Marche: in the framework of the Regional Strategy of Sustainable Development (RSSD) of Marche Region, the project analyses the role of open space in the urban planning and the potential for ecosystem services. It includes a territorial analysis for ecological network at trans-regional level, to provide a common framework for the SEA of urban planning.
- The Marche Region approved its **regional law "Support for integrated upgrading and enhancement initiatives of villages and historic centres of the Marche region and promotion and development of widespread and sustainable tourism"** (regional law n. 29, 22nd of November 2021). The law focuses on the actions of regional relaunch through interventions for villages, historical centres and inner areas. In addition, it is fully integrated in the strategy aiming at the revitalization of the socio-cultural and economic developed around new policies for tourism, for the enhancement of food and wine products, of craftsmanship and entrepreneurial skills and for the requalification of the urban landscape.

2.1. The relation between municipal planning methodological criteria and SDGs



Make cities and human settlements inclusive, safe, resilient and sustainable

The first common direction of development shares the majority of its objectives with the Sustainable Development Goal 11. In order to found and implement an inclusive and sustainable form of urbanization, it is necessary to pursue the common capability to plan and manage participative, integrate and sustainable human settlements. Moreover, regional administrative structures aim to significantly reduce the number of total citizens who are killed or affected by natural disasters as well

as all direct economic losses, which are especially related to global GDP and caused by natural disasters, with particular regard to the protection of poor and most vulnerable people groups.

In line with their direction of development, Regions are expected to reduce the negative per-capita environmental impact of cities, with respect to air quality and waste management (including the one of urban waste), but also to foster common access to public green, safe, inclusive and accessible areas, especially for women, children, elderly and people with disabilities. In addition, regional policies and actions have to support the positive economic, social and environmental linkages between urban, peri-urban and rural areas, enhancing the relations and the integration between the municipal, regional and interregional (especially between neighbouring Regions) forms of planning. In doing so, our Regions aim to adopt an integrated form of management, in relations to all levels of disasters risk, by enforcing prevention activities and forms of early warning in case of natural disasters. In addition, the Minimal Urban Structure (*Struttura Minima Urbana*) should be developed and implemented within the municipal planning, in order to increase the general resilience during and after natural disasters.

For what concerns the issue of social security, the Umbria Region established a form of partnership with the United Nations Children's Fund (UNICEF) in order to develop, at the local level, the Child-Friendly Cities Initiative (CFCI). The project aims to act in urban areas, in order to raise the awareness within local population and administrations about the need and urgency to create safe spaces for children. In fact, especially in the urban context, areas dedicated to children, could be, actually, dangerous ones.

2.2. Future recommendations

The Umbria Region main objective is to increase the general resilience, due to adequate preventive actions, and to allow local administrations to ensure a minimum efficient urban structure and, consequently, the functioning of essential structures, including hospitals and other places for the exercise of public functions, in case of other seismic disasters.

3

Climate change – the Marche

Region

Climate change represents one of the greatest challenges of our century, since it has the strong capability to alter the climate and so the temperatures of our Planet in a way that makes difficult to continue perceiving our life as it has been until now. This dangerous increase in global temperatures, which goes far beyond the natural climatic alterations that use to be recorded between centuries or eras, is mainly caused by human actions and behaviours, which do not respect the natural balance. According to the Intergovernmental Panel on Climate Change (IPCC), in 2021, global temperatures have already increased of 1.1°C from 1850 and 3.3-3.6 million people are nowadays described as directly affected and vulnerable to climate change. In Italy, average temperatures have already increased of almost 3°C in comparison to pre-industrial values: the main consequences are already measurable and visible. Among other things, climate change and so its countless and global consequences have the capability to worsen the situation in crisis areas, which usually already face important environmental problems. Moreover, the effects of climate change events have the power to directly affect all kind of areas and fields: indeed, they jeopardize the stability reached within the environmental, as well as within the economic and social context, making almost impossible the achievement of sustainability under all of its three crucial pillars. In addition, extreme weather events, such as extreme rainfall or tropical storms which happen to be more frequent in our territories and have direct connections with climate change, have also severe impacts on ecosystems and society. The severity of destruction caused by this kind of events depends, also, on human factors (including the increase in number of infrastructure).

In order to face the challenge of climate change we have two possible solutions: the mitigation and the adaptation strategies. In particular, the first strategy aims to adopt specific measures in order to reduce greenhouse gas emissions and to enhance the absorption. On the other hand, the adaptation objective acts in order to reduce the vulnerability of natural and socio-economic systems and to increase their resilience facing a changing climate. The adaptation strategy should be perfectly integrated with the other specific thematic policies, such as the ones related to the water resources and ecosystems management or to the regional development. In this regard, our objective is to ensure the alignment between international, national and regional policies, starting from the UN Agenda 2030, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction.

The main objective of the common action line shared between Regions is to ensure development and implementation of regional adaptation plans. In fact, through the adoption of local adaptation measures and actions, natural as well as socio-economic systems are expected to become able to reduce their vulnerability to climate change and to increase their general resilience. That is the reason why, in 2022, the Marche Regions, with the support of academic and research centres, has begun its path toward the adoption of the Regional climate change adaptation plan.

Since the three Regions are located within the same river basin, namely the one of Tiber River, they deem appropriate defining one shared climate scenario, starting from the common knowledge framework, which includes also the competent River Basin Authority, able to pinpoint the most appropriate and effective actions. These common actions should be adopted in order to mitigate the potential effects of extreme climatic events that may occur in our territories. In this context the Regions want to define strong coordination approaches for a shared early weather warning system, especially for border territories and Municipalities. In addition, Regions want to work together for a common identification of measures and actions aimed to offer greater resilience to the occurrence of extreme phenomena, especially in terms of prevention. As a result, the adaptation to climate change at local level is expected to acquire increasingly importance and to be applied in the formation of new municipal

urban planning, in order to create a synergic link with the line of collaboration described in the above chapter 4.

According to our perspective, addressing the issue of climate change is crucial in order to ensure the principles of sustainable development for several reasons. The first one is that climate change has a temporal perspective that goes beyond the 2030, that represents the limit for the achievement of the SDGs goals, but the necessity of ensuring sustainability will go far beyond this date, since it represents the mean that allows the very human existence on Earth.

Regional Strategy of Sustainable Development (RSSD) of Marche Region strongly includes the principles of adaptation to and mitigation of climate change. Since the RSSD defines a close integration with environmental evaluations, the Strategic Environmental Assessment (SEA) and the Environmental Impact Assessment (EIA) represent the tools for the concretization of adaptation and mitigation measures in relation to plans and projects.

Regional toolbox:

- The Marche Region, in 2022, has started the definition of its **Regional climate change adaptation plan**, thanks to the cooperation with external experts and research centres and to the implementation of its Regional Forum for Sustainable Development second session. The Forum, in fact, has the objective to involve the civil society in the definition of the Plan priorities and to understand its perception about the issue of climate change and adaptation strategies.
- **Multifunctional forestry and plant models and techniques for compensation and mitigation measures in EIA** - Environmental Impact Assessment - proceedings (VEC): the project, developed by the Marche Region, in collaboration with the Polytechnic University of Marche, Department of Forestry Sciences, has developed a new approach to quantify the biotope to restore in the case of deterioration/destruction by project implementation. This approach considers the ecological value of different typology of biotope and allows improving not only the mere carbon absorption, but also the adaptation functions and the other ecosystem services.
- The **Covenant of Mayor** is the world's largest movement for local climate and energy actions undertaken by local authorities. In this context, the **Sustainable Energy and Climate Action Plans (SECAP)** are documents aiming to define the different actions, strategies and responsibilities to achieve local authorities' long-term energy consumption and CO₂ emissions reduction targets. The Marche Region, in 2017, has joint the Covenant of Mayor as territorial coordinator and acted in order to support the involvement of regional Municipalities, also for what concerns the supra-municipal level. According to the latest data, referring to 2020, 102 Municipalities, which represent the 70% of regional population, has joint the Covenant. Additionally, some Municipalities joint forces such as Vallesina Joint Secap (including 11 Municipalities) in order to produce common plants. In this regard, the Region is providing technical assistance to the interested Municipalities, in order to confirm their adhesion and to complete the related SECAP development. In addition, the Region is supporting the Municipalities also by increasing the specific reward criteria of public funding in order to foster the implementation of municipal strategic actions.
- The European Union leads the fight against climate change and sees it as its top priority. Local authorities have a leading role in achieving the climate and energy targets set by the EU. All 305 Municipalities in the Abruzzo Region have joined the **Covenant of Mayors** and the four Provincial Administrations together with the Region have guaranteed their support action as intermediate bodies, with a view to multilevel governance. For this shared energy policy, the Covenant of Mayors in place in the Abruzzo Region is visible at European level and has been defined by the European Commission as a **good practice** to be disseminated and replicated and has also received a special mention in the context of the Sustainable Energy campaign for Europe in Italy. A fundamental element for the municipalities that signed the Covenant of Mayors was the drafting of the Municipal Action Plan, Sustainable Energy Action Plan (SEAP). This document, based on the balance of CO₂ emissions (Baseline Emission Inventory - EIB), reports the strategies for achieving the 20-20-20 objective, and therefore the specific interventions to be carried out.
- The three Regions act in order to develop the awareness about the issue of climate change adaptation and to integrate this awareness within all the municipal planning instruments.

3.1. The relation between climate change and the SDGs

Climate change affects all 17 SDGs, below we focus on just some SDGs.



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

In a constantly changing environment, education and information represent two essential tools to understand our reality and how to react to its continuous challenges. In addition, the issue of climate change, in consideration of its global and boundless nature, is going to increasingly affect the everyday life and activities of the global population, which, in order to adapt to this new climatic situation, need to be informed in every respect. This kind of education is pursued due to already existing tools, which should be specifically tailored, according to the target and to the specific necessities and fields of interest.

In this regard, young people are perceived to be the first target of the information and education strategy for several reasons. First of all, they represent the part of global population that is supposed to be most affected by the consequences of climate change, since, according to the nowadays predictions, their lifetime will be entirely characterized by the climate issue. As a result, they also represent the first generation which will be somehow forced to find concrete solutions to deal with the increasing temperatures, and so with their consequences, in order to preserve their existence as well as the one of our Planet.

However, lifelong education and information should be ensured to all segments of the global population, also for what concerns the climate issue, since, in order to be aware and to act in the right way, people need to know how to do so.

Moreover, the climate debate and the related action strategy should be developed according to both political principles and civil society directions, according to the so-called **bottom-up process**. However, in order to participate to the climate debate and to have an actual active part, citizens and other private actors need to have enough information and knowledge of the problem, ensuring the development of the participative process itself. Indeed, because of the very nature of the problem, climate change solutions should be developed according to the necessities and the capability of global population, which, for these reasons, is a crucial subject. With a view to make it possible, administrations and decision makers have to create strong forms of cooperation with the civil society, also by joining forces with the third sector and institutionalizing the civil involvement in the path toward local sustainability.

Regional toolbox:

- The **Regional Forum for Sustainable Development** (*Forum regionale per lo sviluppo sostenibile*) of Marche Region, developed in cooperation with the regional Centre for volunteering services (*Centro Servizi per il Volontariato- Marche*) aims to guarantee the full involvement of citizens and students as well as the civil participation for what concerns the issue of sustainable development.
- The Global citizenship education plays a crucial role within the Marche Region Strategy of Sustainable Development. It represents a sustainability vector, which connects all the actions of the Strategy together, but also a great tool in the fight against climate change.



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

Climate change is supposed to have significant effects on oceans, seas and marine resources, in every respect. The coastal system plays a crucial role in the territorial strategic development, in particular due to the concentration of natural habitats, connecting infrastructures, tourist sites and urban centres. The

events related to climate change cause various problems to the coastal system: between the most challenging ones are those related to the coastal erosion, the sea level rise and the increase in frequency and intensity of extreme events. In order to face the several challenges, regional administrations need to have enough data, connected to physical (extension of the beach emerged, saline intrusion,...), bio-ecological (algae blooms, chemical and ecological status,...) and socio-economic (populations density, presence of roads and railways near the coast,...) indicators.

According to the latest scientific investigations, climate change impact in coastal areas will lead to several outcomes, including the increase of flooded areas and the reduction of beaches extension, with consequent negative effects on tourism sector and on urbanizations and infrastructures. In addition, climate change effects will also have consequences on availability of drinking water due to salt intrusion in coastal aquifers, on the increasing of infrastructure at risk of flooding and on affecting the productivities of fishing and aquaculture sectors.

As a matter of fact, degradation of coastal and marine areas and ecosystems has the capability to jeopardize the physical, economic and food stability of local as well as of the international community, since seas are no longer able to provide some of the critical ecosystem services, such as carbon storage or oxygen generation (*IUCN*).

In addition, climate change will exacerbate the already existing deterioration of coastal and marine environments, caused by human land-based activities (such as urban discharges or plastic waste) and by the unsustainable exploitation due to the overfishing and other environmental damaging activities.



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

Healthy land provides the basis for the existence of life on our Planet, and ecosystems represent important indicators in order to monitor the status of the environment.

The annual value of the world's total terrestrial ecosystem services has been estimated at 75 trillion USD in 2011, approximately equivalent to the annual global Gross Domestic Product. [...] Valuing ecosystem services with monetary methods often overlooks these intangible services that shape societies, cultures and quality of life and the intrinsic value of biodiversity.

IPCC, 2019, Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems

However, the natural balance of planet Earth is deeply in danger since the loss of biodiversity is challenging almost all the natural areas in urbanized territories. The global temperatures increase, related to climate change, has strong effects on land systems and ecosystems. In fact, warmer temperatures and changed precipitation patterns have altered the period of growing seasons, contributed to the reduction of regional crop productivity and of freshwater availability, and put biodiversity under further stress. Human society has a dual role for what concern the land and ecosystems degradation related to climate change: on the one hand, it is one of the main causing factors, especially for all polluting activities; while on the other hand, it is one of the most seriously affected entities. Almost one-quarter of total anthropogenic greenhouse gas emissions, especially methane and nitrous oxide, arise mainly from land management and agricultural activities, such as deforestation, fertiliser application and livestock.

The vulnerability of ecosystems has increased due to climate-related extreme events: land continuously interacts with the atmosphere through exchanges of natural elements, such as water or energy. Climate changes could affect the equilibrium in these exchanges affecting the stability of ecosystems.

According to the IPCC, during the last decade, climate change have started to show its effects on many plant and animal species, leading to significant range size and habitat location changes and modifications in seasonal activities.

3.2. Future recommendations

The Marche Region is active in the definition of its Regional climate change adaptation plan, which is supposed to be approved in the near future and is expecting to be the innovative tool by which the adaptation strategies will be included within all the sectorial planning. In this context, the Strategic Environmental Assessment procedures are going to be more and more focused on the issue of climate change and, in particular, on the related adaptation strategies and actions.

4

Green infrastructures – the Abruzzo Region

Green infrastructures represent important tools in the fight against climate change and its catastrophic effects on the territory as well as on society. In order to implement an integrated regional green infrastructures systems, Regions has to start with integrating green urban and suburban areas and woodland at all levels, compensating for the soil consumption, which represents a great threat for ecosystems stability.

Regional toolbox:

- The technical table will have a fundamental role in the implementation of Abruzzo Regional Sustainable Development Strategy as it represents the tool that allows the involvement of all local authorities. The University of L'Aquila will provide a fundamental contribution to the technical table. Its Department of Civil, Building-Architecture and Environmental Engineering (DICEAA) was funded by the Ministry for Ecological Transition in order to develop research projects to support the implementation of the National Strategy for Sustainable Development. The DICEAA, in fact, presented its project “**Sost.EN. & Re - Sustainability, resilience, adaptation for the protection of ecosystems and physical reconstruction in Central Italy**”, which falls within the category of "Research projects to support the processes of elaboration and implementation of regional and provincial strategies for sustainable development". Furthermore, the Memorandum of understanding, signed between the regional administration and the University, is structured in such a way as to allow the involvement of new partners, such as the Regional Reserves of Abruzzo, currently represented by the Abruzzo Region, the neighbouring Regions (primarily Marche and Umbria) and the related protected areas, with the goal of establishing an interregional ecological network. The enlargement of the partnership and the signing of Memoranda of Understanding between the Regions represent, in fact, a key point for sharing projects of large territorial value. The action of the protocol, therefore, does not end with the drafting of the Regional Strategy, but finds its origin in it, drawing its effects in the long term, and laying the foundations for a wide-ranging collaboration between the institutions operating in the area. One of the most important opportunities offered by the Memorandum of understanding is the possibility to have, through the collaboration of the Parks, a sort of "territorial laboratory", which can allow the realization of pilot projects that can lead the way for the Region as well as for the interregional cooperation.
- According to the Umbria Region, it is necessary that the new Regional Strategy of Sustainable Development could be integrated and could synergistically cooperate with the Regional Strategy for Biodiversity, based on the Regional Management Strategy for the Natura network 2000 and the Framework of Priority Actions for Natura 2000, both approved on 2018. These instruments allowed the Region to submit to the European Commission the integrated Life project “**Imagine Umbria**”, aimed to fully implement the Natura 2000 network within the Region and realize, at least, the 40% of actions expected within the Framework of Priority Actions for Natura 2000. In particular, the project, which has been launched during the last months on 2020, provides guidelines for the creation of an integrated management system, able to ensure the achievement of the conservation objectives described within the Habitat and the Birds European Directives. In this regard, the economic and technical sustainability represent the crucial elements, which have to be fulfilled due to development of management policies and actions toward:
 - The proactive management of habitats and species,
 - The coherence between the Natura 2000 network and the external territories (ecological connectivity and landscape),
 - The training of professionals suitable for the management of the Natura 200 network,
 - The citizens’ involvement,

The measures that are expected to be activated aim to the fulfilment of some general priorities, such as:

- Improving the governance structure, due to the involvement of all local stakeholders, in order to guarantee an integrated management of Natura 2000 sites,
- Maintaining and improving the conservation status of habitat and species, also in relation to the strategies of mitigation and adaptation to climate change,
- Training and increasing the awareness of technical operators and officials of Public Administrations,

- Increasing the awareness of Natura 2000 central role, related to the development of ecosystem services and green professions,
- Monitoring the conservation status of species and habitats, in accordance with European Directives.
- The Marche Region provided, on 2022, two editions of its workshop “**Sustainability elements for the buildings and structures design**”. Both editions were addressed to technicians of the Regional and of Local Authorities and had the aim to provide indications for the increase of sustainability, with regard to buildings realisation, restructuring and maintenance (roads, underground pipeline, etc.) and took into account the importance of maintaining undamaged ecosystems, fostering the green infrastructures creation and natural based solutions use.
- Marche Region and Polytechnic University of Marche signed an **agreement** in order to study different models and techniques for the realization of multifunctional forestry projects within the regional territory. In particular, the aim was defining new forestry plans, which could represent technical-scientific references for designers. These models concern the developing of site-specific tree-shrub plant modules in order to provide Ecosystem Services in urban, peri-urban and extra-urban environments in line with the Ecological Network of the Marche Region (*Rete Ecologica delle Marche – REM*) and then, for the concrete realization of the regional green infrastructure.

4.1. The relation between green infrastructure and the SDGs

The issue of green infrastructures represents a cross-cutting theme, which perfectly aligns with **all the 17 SDGs** of the Agenda 2030, as well as with our three interregional directions of development and with actions and objectives of each Regional Strategy of Sustainable Development.

Regional Strategies of Sustainable Development aim to represent implementation tools that define the regional reference framework for planning, programming and evaluating environmental and territorial processes. In this regard, at the very beginning, the definition of Regional Strategies has outlined how the active participation of local communities constitutes a crucial element.

Even if each Region follows its own administrative path towards the Strategy definition, generally our projects could be divided into three categories of actions, further divided into sub-categories:

- A - Governance of the Regional / Provincial Strategy for sustainable development;**
- B. Involvement of civil society;**
- C. Preparation of the Regional Strategy Document for Sustainable Development.**

In order to develop our documents and then the final Regional Strategies, research plans, technical documents, methods and tools for monitoring, evaluating and implementing National and Regional Sustainable Development Strategies have been defined. At the same time, it has been essential to activate consultation and participation forms with civil society and academia.

The cooperation between Regions and Universities relies on:

1. Positioning with respect to the objectives of the SNSvS and the 17 Goals of the 2030 Agenda;
2. Definition of the system of regional objectives and priority actions;
3. Definition of the system of indicators and of the monitoring and review plan.

Specifically, the University of L'Aquila has undertaken measures to define the positioning of regional planning with respect to the objectives of the SNSvS, of the 2030 Agenda Goals and of the general sustainability level, in order to consciously optimize the choice of indicators. After the definition of priority areas, a new set of regional indicators has been defined. The activity carried out by the DICEAA group has been conducted in synergy and collaboration with the regional Environmental Assessment Service through a series of periodic meetings and actions have been agreed and shared from time to time.



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

To achieve this goal, a collaboration is underway between the Abruzzo Region and the University of L'Aquila (DICEAA) for the definition of regional ecological networks. The collaboration is aimed at: reordering previous regional experiences; defining the regional framework on environmental fragmentation by means of technical devices called “Ecosystem occlusion profiles of infrastructures” extended to the major road arteries; proceeding with the regional mapping of the gates of the main infrastructures; defining the abacus of potential interferences with respect to the forecasts of municipal planning instruments; proceeding with the elaboration of the indicators aimed at configuring and monitoring the “effective ecological network”. The collaboration is expected to end with the study of the current regional settlement structure for the assessment of anthropogenic interference on the structures of environmental continuity.

At the same time, an activity of recognition and comparison with other Regional Plans and Programmes of different Services has been started, in order to know the evolution of the environmental context.

4.2. Future recommendations

In the near future, in order to fully implement the relation between interregional green infrastructures and SDGs, our three Regions aim to:

1. The training activity, which will be carried out by the Environmental Education Centres and will be addressed to municipal technicians, is going to be planned. The training activity is aimed at deepening and raising awareness of local authorities on the topics covered by the SNSvS;
2. One of the main objectives that our Regions wants to achieve with the Agreements with the Ministry is the final definition of regional ecological networks.
3. The Regions are trying to define specific partnership with research centres and agencies, in order to focus on the issue of indicators and data analysis, which represents the basis of all administrative policies and actions. In identifying the indicators, and in line with our strong and integrated interregional form of cooperation, other institutions will be involved:
 - the regional structures of Marche and Umbria for the identification of common indicators close to the neighbouring areas;
 - the Abruzzo Regional Services for the definition of indicators that will be more suitable for their planning activity;
 - the Park Authorities, through the Permanent Technical Table, which allow the comparison between most suitable environmental indicators to describe the various territorial realities;
 - the Abruzzo regional division of the National Association of Municipalities (Associazione Nazionale Comuni Italiani – ANCI Abruzzo), in order to inform Municipalities about the projects and the possibility of having a discussion on the work done;

4. The involvement of civil society is guaranteed by the organization of regional Forum (the Marche Region, in May 2022 launched its second edition), in order to establish a comparison on environmental procedures and focus the attention of professionals and technicians on the 2030 Agenda objectives.

Regional toolbox:

- Abruzzo Region approved a collaboration agreement with its **Regional Agency for the Environmental Safeguarding** (Agenzia Regionale per la Tutela dell'Ambiente – ARTA Abruzzo), for an in-depth study of the indicators previously launched by the University of L'Aquila. This study will be aimed at identifying, among those already selected, those indicators that, due to their availability and representativeness, will constitute the most suitable set, also identifying the scale of use at the various territorial levels.
- **SOSTENERE** (Sustainability, resilience, adaptation for the ecosystems protection, physical reconstruction in the central part of Italy): research project developed by the University of L'Aquila and Abruzzo Region.
- The Marche Region established its **Ecological Network** (REM) with the regional law n. 2 approved on 5th February 2013. The regional law establishes that: *“The Marche Region Ecological Network has been included within the instruments of territorial and urban planning adopted after the entry into force of this law. This law identifies tools for the implementation of the REM by territorial and urban planning.*

5

Conclusion

The VLR as driver of innovation, which allow our Regions to advance progress on their local priorities and to maximize our potential as a basis for behaviour change and new policy application.

Communiqué on Voluntary Local reviews, UN Habitat, Madrid, UCLG, 2021

Within this integrated and shared field of action, and in line with the Voluntary National Review presented by the Italian Ministry for Ecological Transition, our Regions decided to institutionalize their already in force partnership, by presenting to the international arena their own Voluntary Local Review. The common work behind the creation of the VLR, represented a new tool to guarantee and show this productive interregional cooperation case, as well as to explore a new instrument that no one of the three Regions had ever used.

One of our common interests is representing the results we are able to achieve by facing the issue of development during the next decades, and in particular, by teaming up, synergistically addressing problems and difficulties related to the research of a new pattern of development, which has to be dramatically different from the previous ones adopted in the past years. In our case, **three contiguous Regions, always respecting their identity characteristics, decided to join, in order to pulling together and to find common solutions to growing difficulties, especially climatic and seismic ones, also in relation to the social territorial isolation and economic hardship.** As a result, the greatest outcome has been our common and share response, which is stronger and more resilient than the ones that may be developed within each regional context.

According to our vision, the cooperation between our three Central Italy Regions plays a crucial role in the fields of sustainability and resilience, by working together and sharing some aspects of different Regional Strategies of Sustainable Development. In this context, we are aware that **the integration and the knowledge sharing are the most important tools in order to increase the territorial resilience and to allow communities to act before and after the occurrence of calamitous events.**

The Abruzzo Region:

Governance.

DPC002 – Environmental evaluation service:
Domenico Longhi.
 DPC025 – Energetic policy and Territory
 resources service: **Salvatore Corroppo.**
 DPC032 – Territorial and Landscape planning
 service: **Iris Flaccco.**

Operational level.

Enzo Di Placido,
Dario Ciamponi,
Erika Galeotti,
Laura Antosa,
Andrea Santarelli,
Bernardo Zaccagnini,
Chiara Forcella,
Dina Cardone,
Giancaterino Giammaria,
Giuseppe Ciuca,
Ileana Schipani,
Paola Pasta,
Serena Ciabò.

Website:

<https://www.regione.abruzzo.it/content/progetto-la-strategia-regionale-dello-sviluppo-sostenibile>

The Marche Region:

Governance.

Central secretary *manager*: **Mario Becchetti.**
 Infrastructures, territory and civil protection
 department *manager*: **Nardo Goffi.**
 Social Policies, Work, Education and Training
 department *manager*: **Mauro Terzoni.**
 Economic development department *manager*:
Raimondo Orsetti.
 Integrated programming, EU and Financial,
 human and instrumental resources department
manager: **Maria Di Bonaventura.**
 Health department *manager*: **Armando**
Marco Gozzini.
 Regional advocacy and legislative activity
 department *manager*: **Gabriella De**
Berardinis.

Operational level.

Energy sources, waste, quarries and mines
 sector: **Massimo Sbriscia, Patrizia**
Giacomin, Nazarena Tesei.
 Environmental assessments and authorisations
 sector: **Roberto Ciccioli, Gaia Galassi.**

Info:

massimo.sbriscia@regione.marche.it
patrizia.giacomin@regione.marche.it

Website:

<https://www.regione.marche.it/Entra-in-Regione/Sviluppo-Sostenibile>

The Umbria Region:

Governance.

Territorial government, Environment and Civil
 protection area *director*: **Stefano Proietti**
Nodessi.
 Environmental sustainability service
managers: **Andrea Monsignori.**
 Hydrogeological and seismic risk and Soil
 protection service *manager*: **Sandro**
Costantini.

Operation level.

Francesco Grohmann,
Paolo Gattini,
Franco Garofalo,
Alfredo Manzi,
Maria Grazia Possenti,
Maria Elena Franceschetti.

Info:

amonsignori@regione.umbria.it
amanzi@regione.umbria.it

Website:

<https://www.regione.umbria.it/ambiente/sviluppo-sostenibile>