



International Platform for the Regions of the Future

Recommendation Paper

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The independent advisory board together with a group of distinguished experts in the respective fields developed tangible solutions that aim to guide rural regions in a sustainable future.

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STRATEGIC PARTNERSHIP



Summary for Policy Makers

RENEWABLE ENERGY AND ENERGY EFFICIENCY

→ Reduce energy consumption, make space for renewables, build storage and upgrade power grids

Boost energy efficiency (structural change can cut up to 50% of the primary energy).
Identify the potential areas to be dedicated to wind and sun.
Create infrastructure to make green energy available at all times.

→ Think integrated, find synergies with other projects, build local skills and engage from beginning

Development of clean energy must be interconnected with other local activities.
Clean energy actions create opportunities for social, cultural and economic development.
Maintenance of facilities helps to extend their life, profitability and creates local jobs.
Early engagement ensures more financial resources and increases the chances of project development.

→ Activate local institutions, give a central role to energy communities for a just transition and boost participation, especially from young people and women

Support from local institutions for the energy transition is essential to stimulate acceptance.
The energy community model contributes to generating a positive social impact.
Initial and sincere listening is necessary to obtain an active participation of young people.
Women tend to lead with a more long-term vision in what they want to achieve.

SUSTAINABLE MOBILITY

→ Rethink regulations and deregulations and set up new methods of funding

Regulations and deregulations have a significant impact on regions. In times of rapid change, they need more frequent revision to determine their meaning, purpose and efficacy. In the worst case, outdated regulations prevent innovation instead of supporting it. This problem applies especially to the transport sector with long-term concession contracts and massive public subsidies.

In the case of government funding for innovation projects, the start-up phase is often supported with subsidies to ensure cost-effective operation. Sometimes this can lead to a situation where a sustainable business model is not established during the project period. In consequence, such projects are usually terminated immediately after the funding period. This is often a particular challenge in structurally weak regions with reduced demand. Thus, a new paradigm of smart funding mechanisms is required with concrete targets and suitable performance indicators involving all relevant stakeholders.

→ Enable service-bundling at all levels in mobility and tourism offers

The lack of homogenous and connected services in structurally weak regions lead to gaps in (sustainable) supply provision. In rural areas it is often difficult for mobility services to provide connected offers for the first and last mile. Similarly in a tourism context, the principle of service-bundling could additionally integrate visitor needs at various levels. Adopting technical systems like digital platforms allow service pooling that requires public and private stakeholders to work more closely together to advance solutions. A critical part of service-bundling is the establishment of participative business models allowing the various engaged stakeholders to develop a winning strategy as part of the overall model. Therefore, regions need coordination and leadership to be driven forward.

→ Enable niche players and visionaries in their ability to execute to gain desired development

Various players and visionaries are already creating multiple sustainable offers in rural areas in challenging settings. Policymakers could strengthen their ability to execute and scale a roll-out of their services, achieving desirable outcomes.

AGRICULTURE AND FOOD

→ Raise awareness for the biodiversity crisis

Increase the awareness about the urgency of responding to the biodiversity crisis with new multi-stakeholder actions and by improving the effectiveness of current policies, focusing on ecosystem restoration and protection in natural and agricultural contexts (Rural Regions).

→ Strengthen the role of research in food production

Support the role of research based on quantitative indicators and reliable methodologies to measure the impact of various food production systems and solutions based on circular economy in Rural Regions and areas with natural constraints, also by involving stakeholders at the national and European level.

→ Support sustainable diets

Endorse sustainable and evidence-based diets that allow consumers to thrive while satisfying their dietary needs, preferences and lifestyles, with the involvement of public administration and private companies in Rural Regions in Europe.

All these recommendations are inherently connected with those promoted to reach sustainable mobility, resilience and energetic solutions in Rural Regions thus exploiting the biodiversity crisis in responding to climatic changes.

RESILIENT REGIONS

→ Identify, spotlight and preserve unique natural assets

Single out the peculiar natural assets of each Rural Region, focusing on their ecological values. Consider the natural assets as the basis for preservation and sustainable development.

→ Improve regional income by generation of jobs

Nudge 'hidden champions', i.e. highly specialized market leaders, to create new jobs. Revive the economic potential and "dormant" skills, especially agricultural habits, to enhance identity and self-confidence.

Both actions will burst regional income.

→ Strengthen the community system

Attract younger people and families to move to the region; strengthen existing networks and provide opportunities to build further ones; provide infrastructures for childcare; support institutions for continuing education; promote transdisciplinary collaborations for regions at risk of disruptive changes; replace physical connectivity through the enhancement of IT implementation of new online solutions.

Introduction

Sustainability is the lens through which we envisage the future of rural regions. Only by placing ourselves in this holistic perspective will we be able to design and eventually implement a long-term development model that can face the present economic, social and environmental challenges in an integrated way. We strongly believe this approach is a suitable way to build a sustainable and resilient future for these territories.


Climate change, stemming from emissions by anthropogenic activities, is continuously causing more frequent and less predictable extreme weather events, which in turn lead to consistent economic damages and negative impacts on societies. Embracing sustainability represents a very complex challenge that requires everyone's contribution to reverse the course that today sees all the dimensions of this capital erode rapidly and progressively.

In this first edition of the Sustainability Days, we will focus on the environmental dimension of sustainability to make the rural regions more resilient based on four key topics:

- > **Renewable Energy and Energy Efficiency:** Diversification of energy supply and transition to sustainable and community-based energy system
- > **Agriculture and Food:** Supply and demand transformation in the sustainable agriculture and food industry
- > **Sustainable Mobility:** Technological and social innovations to address mobility challenges of rural areas with weak demand
- > **Resilient Regions:** Regional Renaissance through civic revitalisation, business diversity and place-based strategy

These four domains share several elements and must therefore be viewed in an integrated way. First, each is aimed at facing the climate change emergency, the tip of the iceberg of the crisis we are experiencing. This entails being aware of the urgency of taking mitigation and adaptation actions that can potentially make rural areas and habitats more resilient to change. These actions include enhancing appropriate solutions and a slow approach to various anthropic activities, as well as balanced planning of rural areas in relation to neighboring urban centers. Action is imperative in improving and increasing renewable resources and regenerative innovations, rethinking mobility, tourism and agricultural production while limiting impacts and maintaining balance with nature, and engaging consumers in conscious and circular consumption choices.





The European Green Deal has identified the key transitions that characterise this transformation to the aegis of sustainability: starting precisely from decarbonisation, accompanied by the energy transition, from that towards circular production and consumption models, to go through the evolution from farm to fork of the agri-food system, to achieve sustainable mobility, all this considering the enhancement of natural capital and the protection of biodiversity.

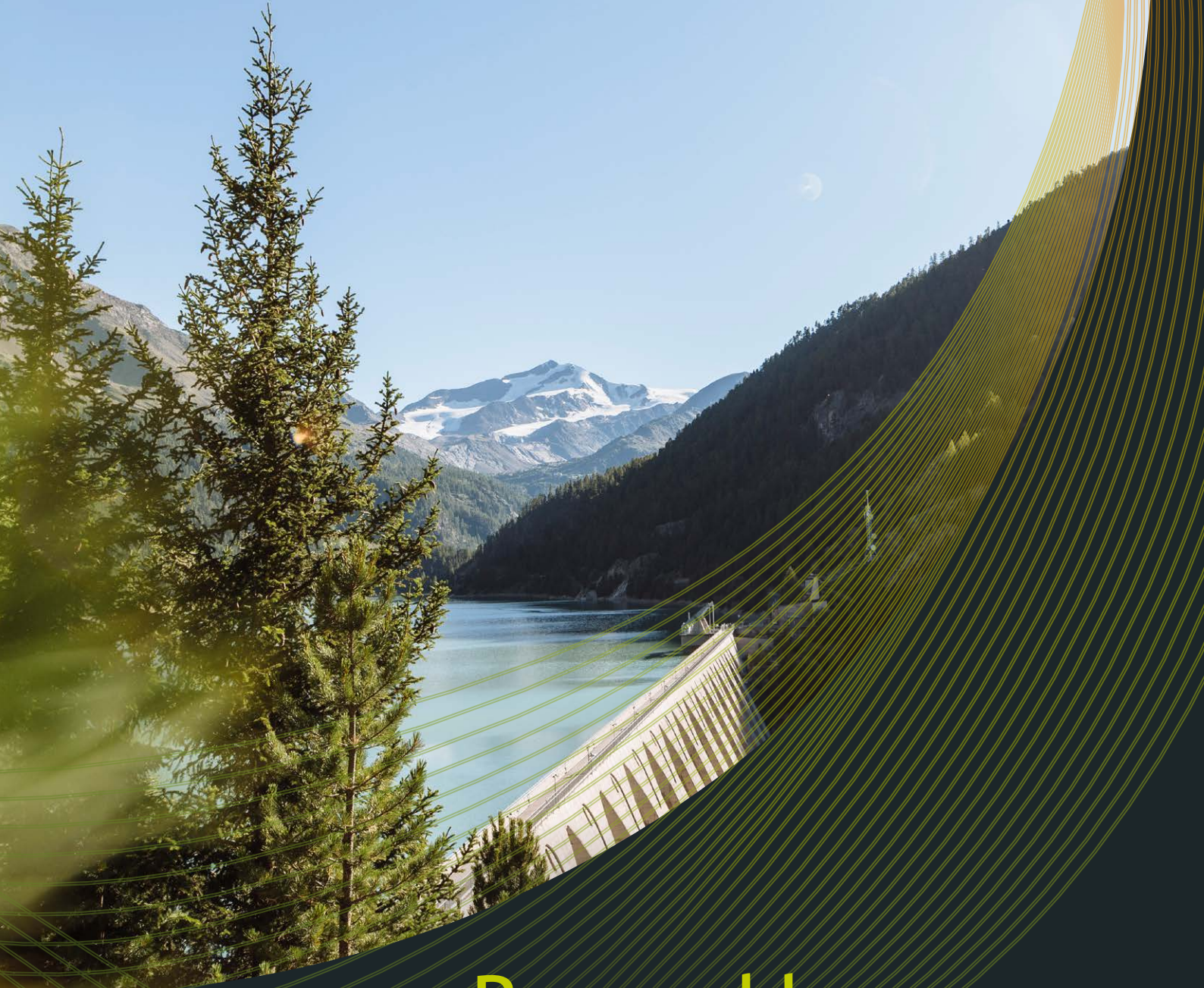
In the last three years, numerous strategic documents, communications and directives of the European Commission have given consistency and concreteness to these guidelines. Therefore, our primary aim is to effectively identify ways to implement this overall policy design within rural areas.

To proceed along this path, multilevel governance and activation of policies are necessary from the European level to the regional level to involve local communities with a participatory approach. In this way, all the innovative energies from below, which are indispensable in transformative processes of this importance, can be activated to raise and strengthen awareness for the necessity of the transformation.

The conditions in the regions of Europe are different. Therefore, each region must find solutions that are tailored to its needs. At the same time, each region and community can be inspired by good examples from other regions.

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Renewable Energy & Energy Efficiency

From a centralized system
towards sustainable, resilient and
democratic energy landscapes

SCENARIO

Never in human history has an energy transition been attempted so quickly and under such dramatic conditions. Throughout history, societies have gradually transitioned away from one energy source to another in centuries – say, from wood to coal. Now in the space of a few decades, countries across the world are working to replace fossil fuels with zero-carbon energy from clean sources like wind, solar and hydro to halt an unprecedented climate emergency that major international scientific bodies have linked to carbon emissions from fossil fuels. Despite decades of efforts to raise that share of renewables, only 22.1% of energy consumed in the EU in 2020 came from renewable sources. There is still a long way to go.

It is still a long way to go...

Progress towards renewable energy source targets, by country

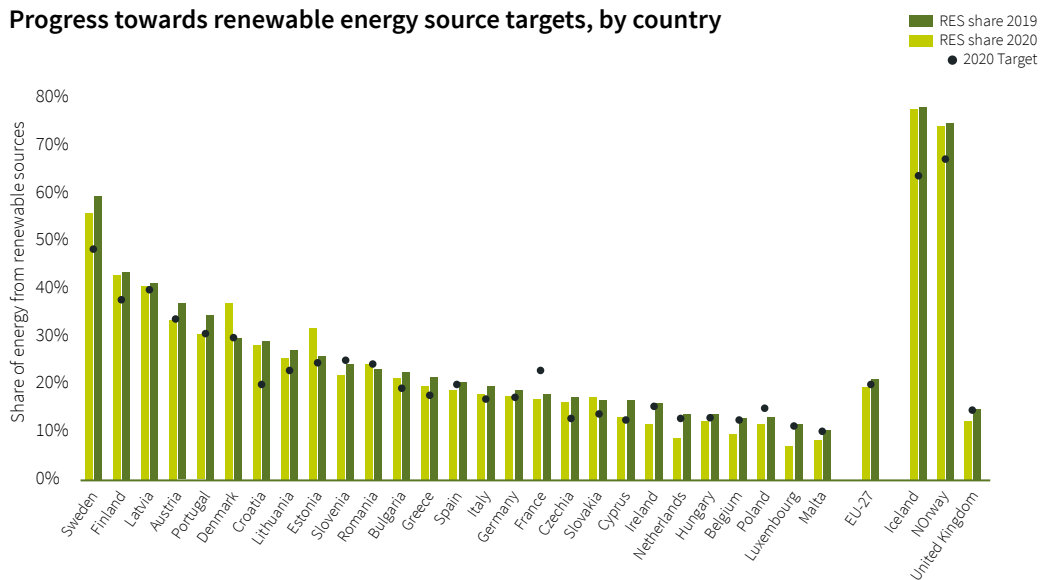


Figure 1.

The European Green Deal aims to overcome climate change and environmental degradation by transforming the EU into a modern, resource-efficient and competitive economy. The transition to a climate-neutral society by 2050 is both an urgent challenge and an opportunity to build resilient competitive economies and inclusive equitable societies, in the framework of the post-pandemic effort for recovery and resilience. A clean energy transition is at the core of this transformational change and is a crucial enabler of sustainable development and climate resilience. Energy efficiency and renewables represent the fastest way to meet EU’s greenhouse gas emission reductions target of 55% by 2030 compared with 1990 levels and increase energy independence. The challenges faced by the energy transition are huge: fossil fuels industry’s influence, political pressures, government policies, age-old power grid infrastructure, lack of proper storage systems, high initial cost of installations and, last but not least, cultural resistance. Fossil fuels have been part of human life for a long time. Subsequently, the fossil fuels industry has its roots deep in the economy of the continent. The present hike in electricity prices and drop in renewables prices can change that. Economics are becoming favorable to many renewable technologies, opening the opportunity to reshape the energy mix without additional social cost, even exploit-

ing benefits from post-pandemic investments. Now there is a business case for renewables, even without accounting for externalities. But energy systems lack momentum, making energy transitions a slow process. In the meantime, it is essential to reduce energy demand, boosting investment in energy efficiency.

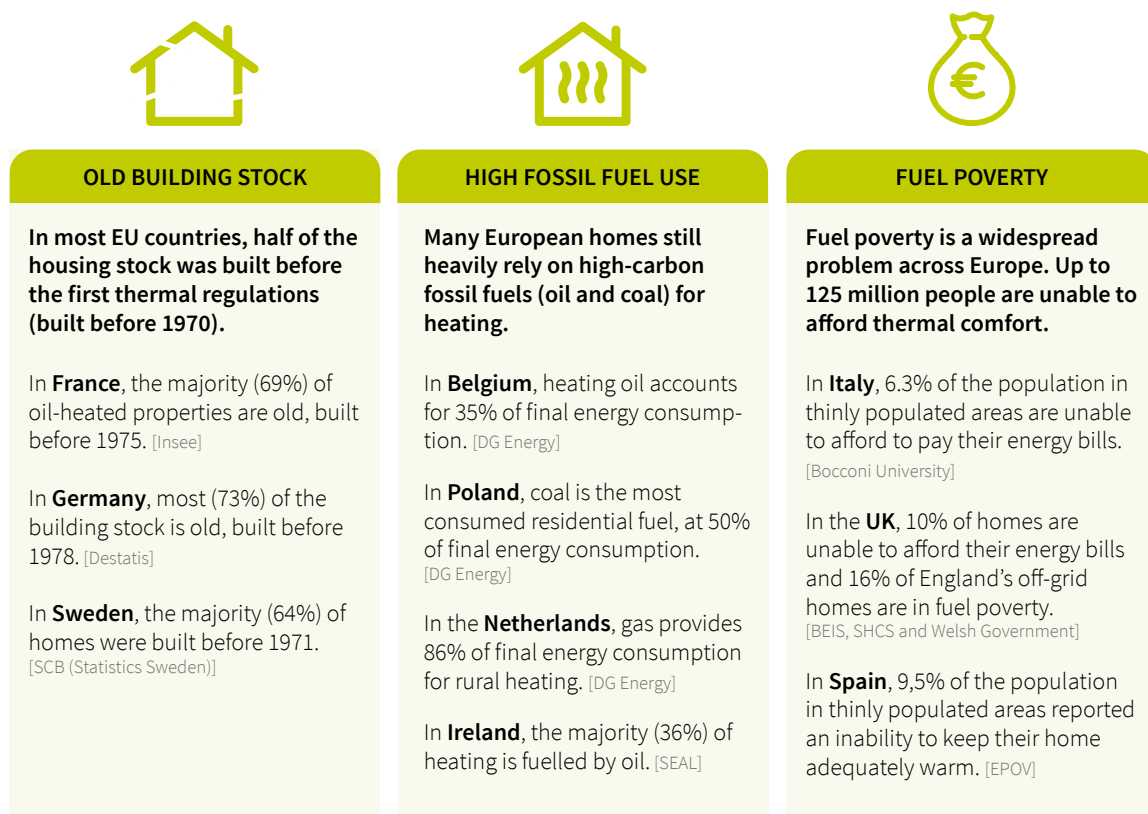


Figure 2. Source: Future of Rural Energy in Europe

Rural areas can make a major contribution to reducing reliance on fossil fuels by linking the introduction of renewable energy systems to rural development programmes. Electrification systems based on renewable energy sources are ideal for electrifying remote areas. But deploying them means dealing with technical and organizational challenges. There is a huge untapped potential for the establishment of small-scale solar pv, wind and biomass projects, as a mean to decentralize power generation and heating for local consumption, but also as an important source of supplementary income for rural communities. Wind turbines and solar panels serving local areas can sell any surplus to the national grid. Solar pv, wind, hydro and biomass are all capable of providing an appropriate electricity service and their selection must depend mainly on an analysis of potential resources and the local context.

Current initiatives and future challenges

Multiple crises, including the Russian war of aggression on Ukraine, the coronavirus pandemic and the climate crisis have led to disruptions in global energy systems and a need to transform energy systems. Against the background of the EU's dependence on fossil fuels, the European Commission has called for a rapid phase-out of fossil fuels and an acceleration of the European „Green Deal“ in its Communication „REPowerEU: Common European Policies for More Affordable, Secure and Sustainable Energy“. REPowerEU is a plan for saving energy, producing clean energy and diversifying EU's energy supplies. The aims include:

- > By 2030, the EU's energy efficiency target is to be raised from 9 to 13 percent. The Commission emphasizes that even changes in daily routine can help to reduce the demand for gas and oil.
- > The diversification of supply is to be promoted: Energy is to be imported from different international partners.
- > The Commission also proposes an acceleration of the energy transition: By 2030, 45 percent of the energy demand is to be covered with the help of renewable energies instead of the previously targeted 30 percent. In order to achieve this goal, the Commission wants, among other things, to shorten approval procedures for renewable energy projects, introduce a solar roof obligation and use more climate-friendly hydrogen.

Various national initiatives focus on boosting the expansion of renewables, promoting energy saving and regulating energy markets. A key future challenge is to develop energy systems that satisfy human needs of energy services for all.

RECOMMENDATIONS

→ Reduce energy consumption

Green power will be a scarce commodity for decades to come, which is why major energy scenarios include significant reductions in energy demand. This requires changes in habits and routines, but also structural changes such as expansion of infrastructure for public transport. According to the Centre for Research into Energy Demand Solutions reductions of 50% are feasible. Since changing social habits will take longer than shifting to new technical solutions, it should be started immediately. The most ecological energy unit is the one that does not need to be generated.

→ Make space for renewables

The sustainable energy transition requires a significant increase in the number of wind power and photovoltaic systems. Some of the latter can be integrated into building facades and on roofs as well as on traffic areas, but they also require additional space. To avoid free-riding and ensure fair contributions, regulations such as the one envisaged in Germany, under which all German states are required to set aside two percent of their land area for the generation of electricity from renewable energies, are necessary.

→ Build storage and upgrade power grids

No amount of expansion of renewable energy can prevent green electricity generation from falling below demand at times (depending on brightness, season and weather). However, critical infrastructure (such as information and communications technology, hospitals, water and gas supply), industry and many other consumers depend on a reliable energy supply. Since the shutdown of fossil and nuclear power plants will eliminate almost the entire controllable part of the power plant output, about 15 % of the annual electricity demand must be available at all times with the necessary grid capacity from other green sources to bridge cold dark doldrums. Existing and innovative technologies can contribute to storage capacity. Scaling up renewable energy generation requires also grid expansion and upgrades so that power systems can access high-quality solar and wind resources, which are often remote from existing transmission networks.

→ Find co-benefits and synergies with other projects

The presence of renewable energy installations in isolated or mountainous areas brings undoubted environmental benefits and represents an opportunity for social, cultural and economic development. Implementing a project involving the development of one or more renewable installations must not be considered as an isolated activity. It's key to interact with other activities, such as raising awareness among the local population as well as tourists (in the case of a touristic area), training the local population for local employment, developing other economic activities linked to the installations. Correlating such projects with different initiatives creates synergies and amplifies the benefits. Tourism activities can benefit: renewable installations can be the subject of guided tours and the location can be enhanced and promoted as a green tourist destination, with an economic return for local operators.

→ Build local skills

Proper management and maintenance of facilities helps to extend their life and profitability. Local manufacturers and repair workshops must be promoted in order to provide reliable maintenance to nearby communities. Training the local population to intervene in the event of breakdowns or emergency work reduces operating costs, creates know-how and local employment. The organisation and planning of training courses for the local population for power plant maintenance should be planned from the outset by the company building the plant and form an integral part of the development project. Female participation in such courses should be encouraged, as well as youth participation to reduce the exodus of local populations to urban areas.

→ Engage from the get-go

Community engagement and institutional support from local and regional authorities must be sought from the design phase of any project, providing detailed information and training to local communities and final users. This is because early engagement can ensure more economic resources and technical skills are available at both community and institutional levels, which increases the chances of project development through new activities.

→ **Activate local institutions**

Even if people are not comfortable with changes and don't trust new technologies, policymakers should actively promote renewable systems to electrify isolated and rural areas. The support of local institutions for the development of renewable energy projects not only facilitates their rapid implementation, but also raises the awareness of the local population and thus stimulates their acceptance. Regulatory frameworks are necessary to enable access to technical equipment for electricity generation and distribution.

→ **Give a central role to energy communities for a just transition**

In order to protect the rights of all local stakeholders, to make the most of the specific vocation of the territories and to determine as high an impact as possible, municipalities should increase their awareness and use their resources in order to favour the development of renewable energy communities and of collective self-consumption. The renewable energy communities model contributes to a just energy transition and to the mitigation of greenhouse gas emissions; reduces significantly the energy bills for companies, families and municipalities; encourages the involvement of local authorities, families and SMEs in common collective projects and goals; helps the regeneration of fragile territories, stimulating local economy, creating green jobs and fighting depopulation processes; helps to mitigate fuel poverty at local level; favours bottom-up collective actions that can extend beyond energy, generating a positive social impact for the broader community.

→ **Activate women's participation**

Renewable energy employs about 32% women, compared to 22% in the energy sector overall. Still, within renewables, women's participation in science, technology, engineering and mathematics (STEM) jobs is far lower than in administrative jobs. Renewables offer diverse opportunities along the value chain, requiring different skill sets. But these opportunities should be equally accessible, and the benefits equitably distributed. Giving an equal voice to women will broaden perspectives in energy-related decisions from investment priorities to project design and ensure a more just sharing of socio-economic benefits that flow from the energy transition. Women tend to lead with a more long-term vision in what they want to achieve and tend to lead without just a focus on power gains, but in finding solutions. Including women more fully in renewable energy projects is critical to the success of making the energy system inclusive and sustainable. Of course, women's employment may be related to the design, operation and maintenance of renewable energy plants, or related to collateral activities, such as education, awareness-raising or tourism, but innovative ideas from the private and public sector can make the active participation of women in the project even more possible.

→ Boost participation from young people

New generations can bring an important number of new ideas and innovation in the transition process and in general they ask to have more weight, but the public usually fails in involving addressing them with high quality participation instruments. Insufficient preparation and superficial engagement have been long seen with respect to young people, and that developed a high rate of scepticism towards these processes – sometimes developed just as propaganda. Instead, if the goal is creating a well-established and credible participation plan for young people, grass-roots movements or associations which could raise the level of the debate, the process must start from a real and transparent moment of listening, and to demonstrate immediately the will to act in the declared direction, taking at least one bold step in the requested direction. It's also easy for these stakeholders to focus on some more specific topic, decisions, public debates rather than immediately enlarge the focus to all topics. Specific formation on the topic, digital tools to interact, easy space to confront with authorities and technicians are necessary conditions.

Examples of participation at different levels:

Small level (15k inhabitants): <https://luinoperilclima.com/>

City level (200k inhabitant): <https://brescialiquida.com/>

National level (9 mln inhabitants): <https://klimarat.org/>

GOOD PRACTICES

Economic champion - Primiero/Vanoi (Trentino)

The community of San Martino di Castrozza, Passo Rolle, Primiero and Vanoi is generating 10 times the energy it needs, through 17 hydropower and biomass plants, and is committed to developing innovative projects in the energy sector, reducing the use of fossil fuels, improving mobility and caring for the landscape in a broad sense. All this to ensure the improved quality of life of local residents, which also translates into a sustainable way of doing tourism.

Over the years, the community of 17.000 inhabitants has achieved numerous environmental results, in synergy with the unique landscape of the Dolomite Alps, a Unesco World Heritage Site. It is 100% renewable territory, declared by Legambiente, the most important Italian environmental Ngo. It has achieved energy autonomy thanks to hydroelectric production and to the construction of 2 innovative woody biomass district heating plants. Almost all local tourist, artisan and industrial facilities have the Recs certification (origin of energy from renewable sources). With 5 e-bike sharing stations, 16 charging points for e-cars and 23 skilifts powered by renewables, it is implementing a sustainable mobility vision.

Environmental champion - Pomaretto (Piedmont)

A small mountain community of about 1000 inhabitants in the Pinerolo area, located on the right side of the Val Chisone, Pomaretto takes its name from the vast apple tree cultures, which once covered its hills. It is part of the Oil Free Zone“ which involves 26 municipalities animated by the goal of self-producing 100% of energy from renewable sources.

Since 2010 it has implemented policies for efficiency and renewable energy production:

- > Insulation of public buildings (primary school, kindergarten, town hall, library and association spaces;
- > Conversion to LED lighting;
- > Installation of 156 kWp photovoltaic systems (production 170,000 kWh / year) which determine -50% of the energy expenditure of the municipality;
- > Construction of a biomass power plant fueled by wood chips (in operation since 2017);
- > 4 hydroelectric plants that produce more than the locals need.

Social champion - Luino (Lombardy)

The project Tavolo per il Clima di Luino - Climate Group for Luino has been developed in a village of 14.000 people in the province of Varese. Luino faces the lake but it is also quite an isolated community because of the mountains behind it. The local group of Fridays for Future and other associations have pushed the municipality to create this participatory process to develop a climate strategy for the territory.

It is divided into 4 categories: Energy, Mobility, Food and environment, Communication. Each of these laboratories had the task to develop a local strategy regarding the issue they are facing: how to produce and how much renewable energy for the community, how to obtain a zero emission transport sector, questionnaire to involve people. There is then the Communication Table which works with all the other groups to spread awareness about the topics and the proposal made by the table with weekly updates on the local media. The participation of school has been crucial to make the young people the first messenger of the initiative towards the population.

Finally, they organized Carbon Footprint week where high-level experts, people of Luino, students, kids and associations gathered together for meeting, informal moment of aperitifs to involve the citizens, make them aware of the solutions and give them the possibility to understand the specific elaborated proposals from each table for Luino.



Sustainable Mobility

Technological and social
innovations to address mobility
challenges of rural areas
with weak demand

SCENARIO

Sometimes old or outdated regulations deter new land use types that may be more efficient and time relevant. Historically, some land use regulations restricted multiple land uses in some rural zones. This may not be relevant in a contemporary context, where land resources are increasingly under pressure for various ecosystem services as well as production ranging from agriculture, forestry to a mix that incorporates spaces for tourism and recreation and distance working in the era of digitization.

In structurally weak regions, the lack of homogenous and connected offerings leads to gaps in the service provision. For example, in the context of rural mobility it is difficult to provide a connected offering for the first and last mile. If the risk of being stranded on a train station in the countryside exists, many people will choose the private car instead of public transport. In the context of tourism, the principle of service-bundling looks at the tourist needs from a holistic level. E.g., It is not only relevant how the tourist reaches the destination but also how suitcases and sports equipment like skis or bikes are transported alongside. The rise of technical systems like digital platforms would allow the pooling of services yet it requires public and private stakeholders to work together and push this topic forward.

A critical part of service-bundling is the establishment of participative business models allowing the various engaged organizations to develop a winning strategy as part of the overall model. In the case of government funding for innovation projects, the start-up phase is usually supported with subsidies to ensure cost-effective operation. In some cases, however, this can lead to a situation where no sustainable business model is established during the project period. In the worst case, projects are terminated immediately after the funding period. This challenge arises more often in structurally weak regions with reduced demand. In the economy, a system of target measurement has been established which attempts to set goals in organizations and combine qualitative and quantitative objectives. OKRS, i.e., Objectives and Key Results, measure the progress of processes without losing the focus on the qualitative goal. A key purpose of OKR is to align the organization's strategic goals with the team's goals to create a unified vision of success. Goals are more ambitious and even visionary, while key results are more numerical and measurable. The hierarchical structure of OKRs ensures alignment between business plans, project goals and work execution. OKRs can be applied to funded projects to increase the success of the initiatives. While grants are usually set up at milestones within the project duration, they could be established beyond that to enable targeted and sustainable management.

Regional development authorities exist already, yet often their reach of competence is limited and focused on specific aspects. To foster the growth of sustainable actions and activities a more cross-discipline and -functional coordination is required. Rethinking development frameworks and authorities. Destination Management Organizations (DMOs) are focused mainly on marketing and less on growth of local services and offerings and play often a very limited or no role in regional planning or development with wider stakeholder groups. Many rural areas also do not have a tourism DMO if their tourism is not sufficiently developed.

Current initiatives and future challenges

Current challenges and initiatives: Rural regions with tourism potential remain challenged to attract visitors by efficiently managed mobility services and infrastructures. Currently, some destinations are in process to define sustainable tourism development goals and are engaged in participative stakeholder discussions as to how new modes of work and recreation including tourism (decentralized in a post-Covid era) can be supported with digitisation and bundled mobility services. As such, some destinations have new platforms to promote tourism and recreation by bundling tourism and mobility services, including the offer of free public transport to and from the destination of they stay a viable amount. Various places and service providers also offer options via Apps and such new technologies including for shared mobility options. The pursuit of sustainable tourism certifications is increasingly also on the agenda for some destinations, since new digital technologies also promise more responsible visitor segments that are more affine to sustainable travel and tourism products. Nonetheless, many structurally weak areas require leadership and strengthened cooperation by stakeholders to optimise opportunities from new mobility service options as well as considerable funding support for infrastructure projects.

RECOMMENDATIONS

→ Set visionary goals

Define specific visionary local and regional goals that set a direction for desirable change.

→ Operationalise goals by clear objectives and tangible results

Apply the performance oriented and transparent methods to projects and initiatives. This is particularly important for public services and subsidies.

→ Review existing regulations

Identify any regulations that are outdated in context of new mobility and tourism strategies. Assess how technological and social innovations can be best supported in updated regulations.

→ Regulate appropriately

Deregulate where necessary to enable innovations. Promote rules to foster sustainability in a broader context.

→ **Test and monitor regulation impacts**

Apply temporal or geographically constrained regulations to test, check and improve regulation changes.

→ **Update organizational responsibilities**

Change requires leadership and commitment to drive sustainability initiatives forward. Ensure organisations have relevant structures, power, and resources.

→ **Enable joint initiatives**

Reaching ambitious goals requires the collaboration between public and private stakeholders. Actively support communication and foster outcome-oriented initiatives.

→ **Activate participation**

The more inclusive the participatory approach, the more likely that outcomes are suitable to meet different stakeholder expectations. It will help gain wider acceptance in the population.

→ **Identify potential activities**

Identify existing small-scale activities with a potential to grow. Enable niche players and visionaries to gain desired impacts. Provide accelerator programs for selected activities.

→ **Implement smart funding and non-financial support**

Provide (smart) funding together with non-financial support including education and training to initiatives. This helps initiatives progress and prosper and lead to substantial results in terms of sustainability.

GOOD PRACTICES

Use of drones in the logistics

DHL became the first international logistics provider to launch an autonomous aerial vehicle (AAV) drone delivery service in China on May 16, 2019. The company debuted an exclusive, eight-kilometre drone delivery route for a customer based in Guangzhou. The trip, which previously took 40 minutes one-way by car or truck, now takes eight minutes while producing a fraction of the overall carbon footprint. Further information here:

→ www.supplychaindive.com

This is very interesting not only for its technical consequences, but also for the advantages in terms of GHG production. This is a good example about the expectations in future transport planning, i.e. using automation and non-fossil fuels to produce efficient and low-impacting transportation services.

The south tyrolean guest passes

South Tyrol Guest Passes guarantee tourists in South Tyrol free use of local public transport. They are a simple and low-threshold offer so that tourists leave their own cars on site and the overall traffic volume is reduced.

Guest Passes are distributed free of charge to tourists through many participating accommodation facilities across South Tyrol. It is the goal of the local government to provide 90% of tourists with a guest Pass.

→ www.suedtirol.info

Alpine Pearls

It includes 19 tourism regions across European Alpine regions that share a common vision to shift travel and tourism behaviour towards, slower, less emissions intensive, public transport centred forms. It is a good case precisely because tourism and mobility is planned and managed to a greater degree “integrated” by stakeholders. Destinations can only become a network member if they meet development criteria focused on sustainable soft mobility and related tourism initiatives. The scheme is successful, because it accelerates cooperation for achieving sustainable outcomes via strategic mobility and tourism planning and development. The economic benefit of member communities is noteworthy.

→ www.alpine-pearls.com



Agriculture ↔ Food

Supply and demand in the
agriculture and food industry

SCENARIO

There is an inherent interdependence of climate, biodiversity and human societies: people are integral parts of the dynamic complex interactions of plant, animal and microorganisms, as well as the inorganic components contributing to the provision of ecosystem services. As the recent pandemic has sadly demonstrated, human and ecosystem vulnerability are interdependent and as such, need to be dealt with in a comprehensive and holistic manner.



Figure 1. Sustainability as a three-pillar concept.

Our global food systems are increasingly exposing both, ecosystems and people to climate hazards, and it is recognized that our current dominant food system plays a crucial role in disrupting ecosystems and reinforcing socio-economic inequities and eroding health. Global food systems:

- > Account for nearly one-third of global GHG emissions, consume large amounts of natural resources (e.g. food production uses about 75% of the world’s accessible freshwater), generate pollution and contamination of air, soil, water and non-target vegetation (due to the use of pesticides and fertilizers), result in biodiversity and agro-biodiversity loss and an untold loss of ecosystem services, erode farm animal health and welfare, cause land degradation, deforestation and landscape simplification and generate food waste;
- > Do not allow economic returns and fair livelihoods for all actors of the value chains, for farmers, especially smallholder farmers often lack access to market, are not inclusive and generate food insecurity and food poverty. Healthy diets are unaffordable for the poor in every region of the world. Food poverty has become a substantial problem in the wealthy world, with growing portions of people struggling to afford healthy food on an everyday basis. Moreover, in wealthy societies food poverty is coupled with food waste, that is we observe “scarcity within abundance”, one of the most ethically unacceptable paradoxes of our times.

Causes of malnutrition include both undernutrition and obesity, which are major drivers of non-communicable diseases around the world (e.g., type 2 diabetes, cardiovascular disease and stroke, and some types of cancer). There are also more indirect impacts that the food and agriculture sector have on human wellbeing: the overuse of antibiotics in the livestock sector can cause antibiotic resistance, as resistant microorganisms can be passed on from animals to humans. Finally, fertilizer and pesticides have a negative impact on the environment, animal and human health.

Current initiatives and future challenges

Profound transformation is needed to address the Agenda 2030 and to achieve food security and nutrition: there is an urgent need to redesign our economies, encompassing production and consumption processes to obtain environmentally friendly and resilient systems able to resist and quickly adapt to external disturbances (e.g. extreme climatic events; COVID-19 pandemic; energy/raw material crisis) and provide healthy and nutritious foods to an increasingly conscious population.

To address such challenges, EU institutions have continuously developed effective policy measures and set a number of ambitious milestones:

- > Climate neutrality by 2050 (net zero GHG emissions), at the very core of the EU Green Deal and in line with the Paris agreement objectives.
- > EU's biodiversity (crucial to safeguard Europe's food security and responsible for over half of global GDP) will have to be on the path to recovery by 2030. The targets foreseen under the EU Biodiversity strategy including the nature restoration proposal, currently under adoption by the Commission, will propose legally binding nature restoration targets, subject to an impact assessment.

As mentioned in the Farm to Fork Strategy (at the heart of the Green Deal), milestones specific to agriculture and the safeguarding of biodiversity and ecosystem services include:

- > Reducing by 50% the use of pesticides by 2030
- > Reducing nutrient losses by 50% by 2030 while ensuring no deterioration on soil fertility
- > Reducing fertilizer use by at least 20% by 2030
- > Reducing by 50% the sales of antimicrobials for farmed animals and in aquaculture by 2030
- o Achieving 25% of total farmland under organic farming by 2030

As a shift in people's diets is needed, consumers need to be increasingly empowered to make informed food choices. The European Commission will also strive to improve both the availability and the affordability of good and sustainable food, operating at European level through tax incentives and a unified labeling efforts. As the most important mean of communication with consumers regarding food ingredients and their sustainability, nutritional information and quality characteristics, food labelling and certifications represent powerful tools for buyers' empowerment. This applies not only food safety and labels attesting the absence of presence of certain ingredients but also origin labelling, geographical indications (PDO, PGI and GI) and other EU quality schemes such as products of EU's outermost regions or mountain products. In the context of a changing climate and progressively conscious consumers, increasing attention and action should be devoted at regional and national level to strengthening such systems and perhaps developing new ones to respond to the challenges and enhance the products originating from rural regions and areas with natural constraints.

Even though food choices are inherently linked to biology, in humans there is still ground for modulating their food behaviors and choices. In agreement with the agenda expressed by the European Green Deal, there are several actions concerning food behaviors and choices that should be taken in order to promote the well-being and health of citizens and future generations. Sustainable food systems are in fact at the heart of the European Green Deal through the health of people, societies, and the planet. Economic development strategies need to be designed to boost

a sustainable and inclusive economy, improve people’s health and quality of life, and care for nature. A reduction in human diets of animal products would have strong environmental and health benefits; likewise a reduction of retailer and household waste is required.

As the main instrument that supports farmers and livelihoods, the 2023-27 CAP Plan is aimed at boosting modernization in agriculture as well as the economic, social, environmental and climate sustainability of the agriculture and forestry sector, as well as the condition of rural areas. Measures and interventions are subject to evaluation and have to be in line with the objectives and targets set out in the Green Deal (see Figure 2).

Specialized industrial agriculture	Diversified agroecological farming
Crop monocultures (or production of a handful of select crops) at the level of farms or landscapes; Concentrated animal feeding operations (CA-FOs).	Temporal diversification (e.g., crop rotation) and spatial diversification (e.g., intercropping; mixed farming); diversification employed at various levels, including plot, farm, and landscape.
Use of genetically uniform varieties or breeds selected mainly for high productivity, wide adaptability to favorable environments, and ability to respond to chemical inputs.	Use of wide range of species and less uniform, locally adapted varieties/breeds, based on multiple uses (including traditional uses), cultural preferences, taste, productivity, and other criteria.
Vertical and horizontal segregation of product chains, e.g., animal feed production and animal rearing in separate farms, value chains, and regions.	Natural synergies emphasized and production types integrated (e.g., mixed crop-livestock-tree farming systems and landscapes).
Highly mechanized, labor-saving production systems.	More labor-intensive systems.
Maximization of yield/economic returns from a single product or limited number of products.	Maximization of multiple outputs.
Intensive use of external inputs, e.g. fossil fuel, chemical fertilizer, pesticides, and antibiotics.	Low external inputs; recycling of waste within full nutrient cycling and circular economy approaches.
Production of large volumes of homogenous products for national and international markets, typically within long value chains.	Production of a wide range of less homogeneous products often destined for a short value chains; multiple sources of production, income, and livelihood.

Figure 2. Source: IPES 2016, p. 11

RECOMMENDATIONS

→ Policy choices in the agricultural sector based on evidence

Develop reliable methodologies by fostering research in local and international research institutions to create evidenced-based sustainability indicators to better explain the relationship between agricultural management practices and sustainability in environmental, economic, and social terms, and to compare different environments and socio-economic contexts.

→ Promote diversified agroecological farming

Promote diversified agroecological farming (Figure 2), leading to reform ‘conventional’ agriculture around the principles of agroecology, organic agriculture and regenerative agriculture and gaining better knowledge regarding the trade-offs and implications of farming practices that may require more land surface due to lower yields.

- > Better quantitative knowledge is needed regarding the production of leguminous crops and consumption of pulses as 1) a tool for environmental sustainability (soil health, increased nutrients and reduced inputs for following crops), 2) a good protein source to diversify diets to feed increasingly conscious and gastronomically curious consumers, 3) and an interesting market opportunity for European farmers in Rural Regions offered by new consumption trends and a shift towards plant-based protein and products (possible value chain solution for plant-based processed products)
- > Improve the understanding and quantitative knowledge about sustainable low-carbon livestock production systems by documenting their complexity and their potential to make the most of Rural Regions and:
 - > Provide added value by including agritourism services for customers increasingly curious about the rural lifestyle and its benefits and challenges
 - > Provide authentic dining experiences promoting local products and “slow tourism” while protecting traditional livestock breeds, improving animal welfare and have adequate herd loads across different regions
 - > Study and quantify carbon sequestration processes in agro-silvo-pastoral and agro-forestry ecosystems and assess its climate change mitigation potential

→ Measure the effect of technological innovation

High- or low-tech technological innovations play an important role in agriculture and may create the conditions to develop innovative tools and provide solutions. However, the role of technologies can be interpreted differently. On the one end, the “high-tech” agriculture and food systems, based on biotechnology nanotechnology, vertical farms, lab-grown meat, genetic engineering, assume the vision of continued agricultural industrialization. On the other, technology supports natural-based solutions and digitalization, guided by ethical and inclusive standards, can create new interactions and networks to reconfigure value chains and marketplaces in ways that lead to more efficient, climate-smart food systems producing healthy and nutritious food for all.

Study and promote sustainable value chains to create a resilient food system at regional, national and European level, in order to respond to crises of health, economic or energetic nature, by promoting multi-stakeholder projects in rural regions in the context of changing and unpredictable climatic conditions. Key research questions therefore are the following:

- > What does it mean to have a resilient food system and value chains?
- > How can we make existing value chains increasingly more sustainable while supporting farmers in the transition?
- > How can we build new value chains in rural areas to enhance local genetic and cultural heritage, mitigate global warming, halt biodiversity loss and erosion of natural capital, and respond to the challenges of a changing climate?

→ **Promote a plant-based diet and minimize food waste**

More individuals should be encouraged to reduce their intake of animal-based products, and eventually prefer those coming from sustainable and high-quality livestock systems and adopt a balanced, plant-rich diet and minimize food waste. This should also be reflected by the food choices offered by canteens and cafeterias of schools, universities, companies and factories. Adequate portion control should be encouraged in various ways, such as by the adoption of smaller plates that has been proven to limit food intake in canteens and cafeterias.

→ **Educate about sustainable and inclusive food production and consumption**

The process of awareness about sustainable and inclusive food production and consumption should begin at school with children and involve their parents. It is mandatory to nudge the public administrations and private companies towards enabling these dietary changes as more people regularly eat away from home. Additionally, in line with efforts at EU level, attempts with multi-stakeholder engagement should be made to strengthen existing quality schemes and geographical indications as a crucial tool empower consumers through increased knowledge. This could allow farmers to represent and fairly profit from their good practices and sustainability characteristics in social, economic and environmental tools in the certification products receive. Procedures that gain such labels should be progressively simplified and made accessible to small farmers while simultaneously ensuring the truthfulness of claims made in a complex and competitive market system involving online platforms and digital marketing tools.

→ **Promote local and seasonal food**

Awareness should include the seasonality of food products and should be clearly linked to the territory, and the implications our food choices have on global economies and the overall sustainability of our diets in societal, environmental and economic terms. The adoption of products farmed and produced in a given rural area should be encouraged as a tool to cherish and enhance it. Additionally, labels clearly indicating and reflecting quality and sustainability characteristics of a product should be encouraged and supported to allow traceability, authenticity and transparency across value chains.

→ **Raise awareness about biodiversity crisis and climate change**

Continue raising the awareness of different stakeholders and the public on the importance of different components of biodiversity in agroecosystems (schools, farmers, food producers and consumers and so on). Intensify awareness raising on the relationship between the biodiversity crisis and need to adapt to the increasingly challenging circumstances posed by climate change. Increasing attention should be given to the potential role of the democratization of food governance to respond to current challenges in the shift towards a more fair and sustainable food system. Scientific evidence shows that the development of local democratic food governance is influenced by a multitude of factors, concerning socio-cultural characteristics, structural and procedural support. This calls for effort and projects investigating the role and effectiveness of initiatives joining civil society, private stakeholders and local governments in the development of food policy for different contexts, as well as potential obstacles such approach might have to face.

→ **Set development milestones and targets in an integrated approach**

Contribute to the definition of the process to reach targets of the EU strategies with a clear timescale and chronology, including intermediate steps at local and national level. Examples include reaching nature restoration targets, or targets related to space for nature, reduction in input of chemicals and policies aimed at improving knowledge about good nutrition and obtaining fair remuneration for farmers and foresters. Such milestones should be set following an integrated approach and considering possible synergies and trade-offs among different environmental, societal and economic objectives in an evidence-based rationale.

→ **Monitor and improve the effectiveness of CAP measures**

Improve the effectiveness of CAP measures including Rural Development Plans and National Strategic Plans with regards to environmental, social and economic sustainability. Efforts should also be made in developing adequate sampling protocols to monitor the effectiveness of the individual CAP measures/operations regarding biodiversity protection, and in reflecting on the up-scaling of already existing good practices through CAP and other policies to obtain resilient food systems providing good quality nutrition to increasingly conscious consumers.

→ **Increase knowledge to raise commitment on sustainable agriculture and food among rural societies**

Promote awareness of sustainability and health knowledge in Rural Regions about food and agriculture as well as of the implications of dietary choices on farmers, consumers, ecosystems and planet; this recommendation should apply both at retailer and catering level by encouraging and funding projects involving stakeholders along the food value chain.

GOOD PRACTICES

The laboratory for future gastronomy, fermentations and the Garum Project - Bolzano

Chef Mattia Baroni, with a background in engineering is today the chief of research and development at Bad Schörgau and the founder of the Laboratory for Future Gastronomy (LaFuGa) an international and transdisciplinary movement with the aim to improve the world through food. He is proposing a cuisine which is inspired by the past for a better future, utilizing fermentation as a food transformation tool, focusing on redefining food waste practically and daily at LaFuGa. His vision regarding food consumption and choices is clear:

“Changing food choices, start eating differently all over the world is our big mission”.

The food system we are currently living in is dysfunctional, mentioning, for example, the impact that agriculture has on the environment: from soil desertification, to greenhouse gasses emission, and the loss of 85% of the planetary biodiversity. 60% of the food we produce never reaches the consumer. (FAO). We, as society, are happy with the food we are currently eating. It has been defined as C.A.T.: convenient, affordable and tasty. If we want to replace the food we are eating for better alternatives it needs to be as convenient, as affordable and as tasty, leading us to the idea that: “Liking is a powerful driver of change”.

- > LaFuGa in collaboration with the Laimburg Istitute launched the Garum project that led to a first product (soon) on the market, consisting in a precious dense liquid that is the best healthy substitution to the salt widely used in the kitchen. Garum promises to revolutionize taste, at home, in gastronomy, and all over the world. It is rich in umami, completely natural and naturally processed, rich in essential nutrients and healthy for your microbiome. Three tastes were produced: plant based, chicken and dairy but many more are coming next year. We, locally, work to improve the food chain and globally save the world doing it one carrot at a time.

Tenuta di Paganico - semi-extensive organic maremmana beef production

“We aim to be a sustainable farm. Experience and passion enable the bond between animals, people and environment”.

Cattle are a major contributor to the livestock sector’s emissions, representing over 60% of this sector’s emissions. Future challenges include finding strategies to produce healthy food in a way that minimizes the overall output of GHGs into the atmosphere, by understanding the diversity and complexity of livestock agri-food systems.

Agro-silvo-pastoral systems combine pastoralism (extensive livestock husbandry on pastures) and agriculture in a partially wooded environment. They are able to provide several benefits such as mitigation of greenhouse gas emission from the livestock sector, increment of the adaptability of livestock to the climate change effects, and improvement of the nutritional quality of animal derived food and animal welfare since the peculiar microclimatic conditions under the tree canopy are able to improve the thermal comfort of cattle, especially during extreme temperatures.

This farm is located in the Maremma region and combines extensive rearing of a rustic traditional cattle breed on a large and diverse farm encompassing over 1500 ha of forest, pastures, olive groves

and arable crops. The vast majority of the feed is produced on farm and the system is complemented by a restaurant and agritourism services, adding and preserving the value of the area by enhancing a very short supply chain.

The farm manager, Jacopo Goracci, is in close contact with research institutions and takes part in numerous projects and operational groups, with the goal of not only finding and testing more sustainable solutions and new management techniques but mostly serving as a hub for sharing knowledge and supporting the sustainability transition in neighboring farms with similar conditions.

Cirfood District

Cirfood District is an innovation hub designed by Cirfood, the leading cooperative in Italy in the canteen service, dedicated to sharing a vision on sustainable and accessible food in cultural and societal terms. Cirfood views food as an asset to enjoy socially and recognizes the importance of proper nutrition for everyone. The commitments made are in line with SDGs and are reflected by data such as over 35% of new suppliers being chosen with environmental criteria, more than 695 t of CO²-eq being saved by using 12% of energy from renewable sources and over 88% of the 10.629 employees having open-ended contracts.

The initiative Cirfood District is supported by national and international stakeholders (UNISG Università di Scienze Gastronomiche di Pollenzo, Reggio Children, IREN, LifeGate, etc.) sharing the same objectives in reaching environmentally sustainable systems for the collective good. The innovation hub will conduct research to predict and respond to consumer trends in Italy regarding nutrition and catering services, crucial to guarantee healthy and safe nutrition to all communities. Every year, over 100 million meals are provided by Cirfood in schools, firms, and hospitals with the goal of improving people's lifestyles while protecting ecosystems and guaranteeing a better world for future generation in economic, environmental and societal terms. The potential impact made by the solutions found by the work and research projects of Cirfood District in improving food systems and all connected services is therefore very meaningful, especially when paired with the expertise provided by research Institutions and experienced professionals collaborating in the initiative.

Norbert Niederkofler - food and nature

Norbert Niederkofler is Executive Chef at Michelin 3-starred St. Hubertus at Hotel Rosa Alpina and owner of AlpiNN Food Space and Restaurant, home of the Cook the Mountain project. Born in in South Tyrol, Italy, he is committed to preserve local cultural heritage and enhance agricultural products through innovative techniques and preparation processes. He considers eating an experience more than a simple gesture and was interested from the very beginning in how cooking with local products in mountainous areas could contribute to the sustainability of the whole planet. He is aware of the need to reshape local and economic development by studying in depth the interactions between farming, territory and consumption trends. Cooking is indeed a tool to aid and encourage this transition and as such can be regarded as an opportunity to inspire people and communities to change their lifestyle into a more environmentally, socially and economically sustainable one.



Resilient Regions

Rural Renaissance through
civic revitalization, cooperation,
participation and place-based
strategy

SCENARIO

As a general definition, resilience refers to a dynamic process between persistence and change, which includes elements of reorganization, adaptation, further development as well as the creation of new options. In the context of Rural Regions, resilience refers to their ability to exploit changes and crises for development of economic, social and ecological resources. As such, resilience is a specific approach to the sustainable development of Rural Regions, characterized as it is by uncertainty, resilience cannot be easily controlled and is not an achievable target state.

In order to enhance the resilience of Rural Regions, their communities must be strengthened to prevent a dramatic loss of the rural-based human and social capital. The path to a resilient RR leads through conscious steering, shaping and balancing processes by linking the basic principle of sustainable development with economic and social diversification, education and further training, future orientation, innovation and error culture. To bring issues of civil society, local economy and politics to the fore, resilience thinking must be coupled with the concept of transformation.

Dimensions and factors of resilient rural regions

Rural Regions differ in terms of economic and work structures, spatial and demographic conditions, etc. Therefore, for the ecosystem, economic system and social/community system of each RR it is necessary to identify the appropriate indicators and measure them. Examples are the population development, life satisfaction, cultural and social investment and infrastructure, environmental quality, risk exposure, business mix, start-ups, etc. The list of indicators in Figure 1 can be supplemented on a region- or municipality-specific basis.

Regional Governance

Based on the analyses of the key factors, the governance of Rural Regions plays an important role in developing the strategies and visions and in adopting the necessary measures. Regional governance should support networking and cooperation between the various stakeholders by e.g., reducing bureaucracy and supporting the foundation of start-ups and small enterprises. Local-to-local cooperation and co-planning activities should be fostered in order to identify natural, social and cultural endogenous resources, strengthen their values and potentials, create strong interrelations and promote sustainable and resilient development perspectives. Among the several new methods that have recently been developed, tested, and implemented to bring knowledge from science and multiple social practices together, we particularly prize living labs, innovation hubs, co-working spaces, etc. especially for peripheral regions, led by State agencies, governments, communities, regions, companies, or research institutions.

Planning for resilient Rural Regions

- > RR should look for cross-cutting and comprehensive spatial planning approaches that facilitate participation of the local population.
- > Facilitate population retention by enhancing residential environments and local facilities designed to increase well-being, the feeling of community belonging and an overall high spatial quality. Planning schemes should be coupled with sustainable mobility approaches that enhance accessibility to primary services and foster innovative mobility solutions.

- > Encourage sustainable agriculture and food provision, should foster energy efficiency and should contribute to providing renewable energy supply by including them within regional planning approaches.
- > Develop sustainable planning approaches to promote climate adaptation in RR because and reduce climate impacts and create resilience to future disasters.

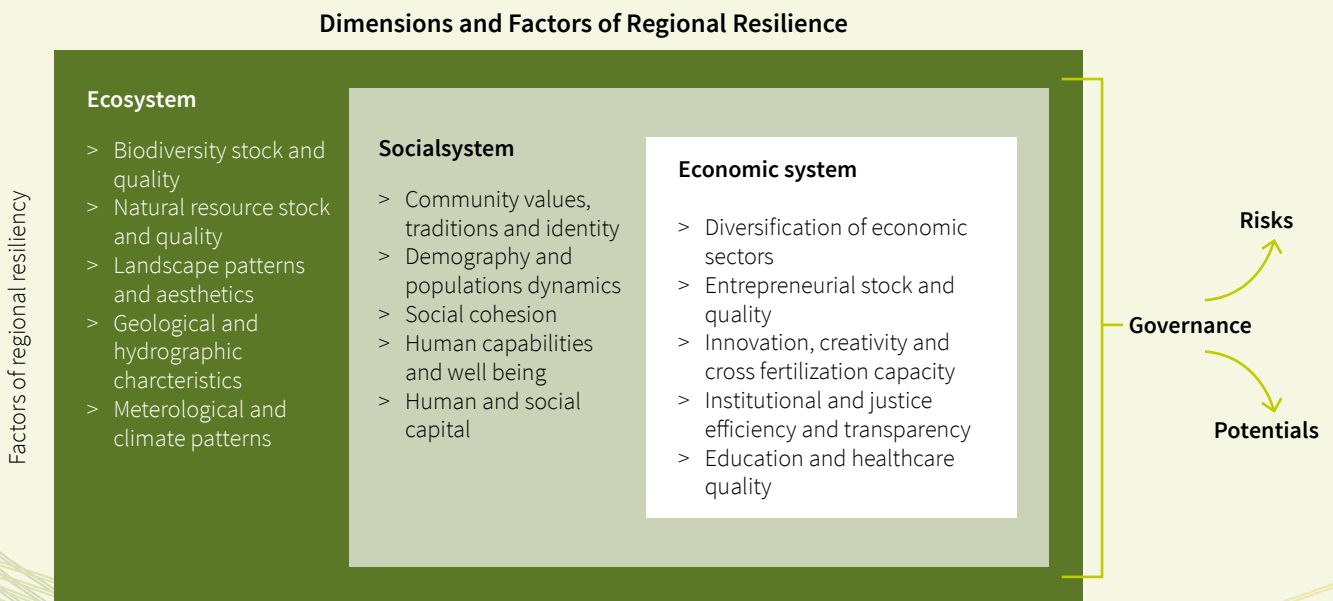


Figure 1. Dimensions and factors of regional resilience.

The process for becoming a resilient rural region: the resilience circle

How to use the resilience circle?

Regions are different in terms of economic and work structures, spatial and demographic conditions, etc. The analysis of key aspects is crucial: Which indicators of the socio-economic, the physical and the ecological potential are important for the region? Every region needs appropriate indicators that can be clearly identified and measured, e.g. regarding population development, life satisfaction, cultural and social investment and infrastructure, environmental quality, risk exposure, business mix, start-ups, etc. The indicators listed in the figure can be supplemented on a region- or municipality-specific basis.

The steps required for becoming a resilient **Rural Regions** are sketched in **Figure 2**:

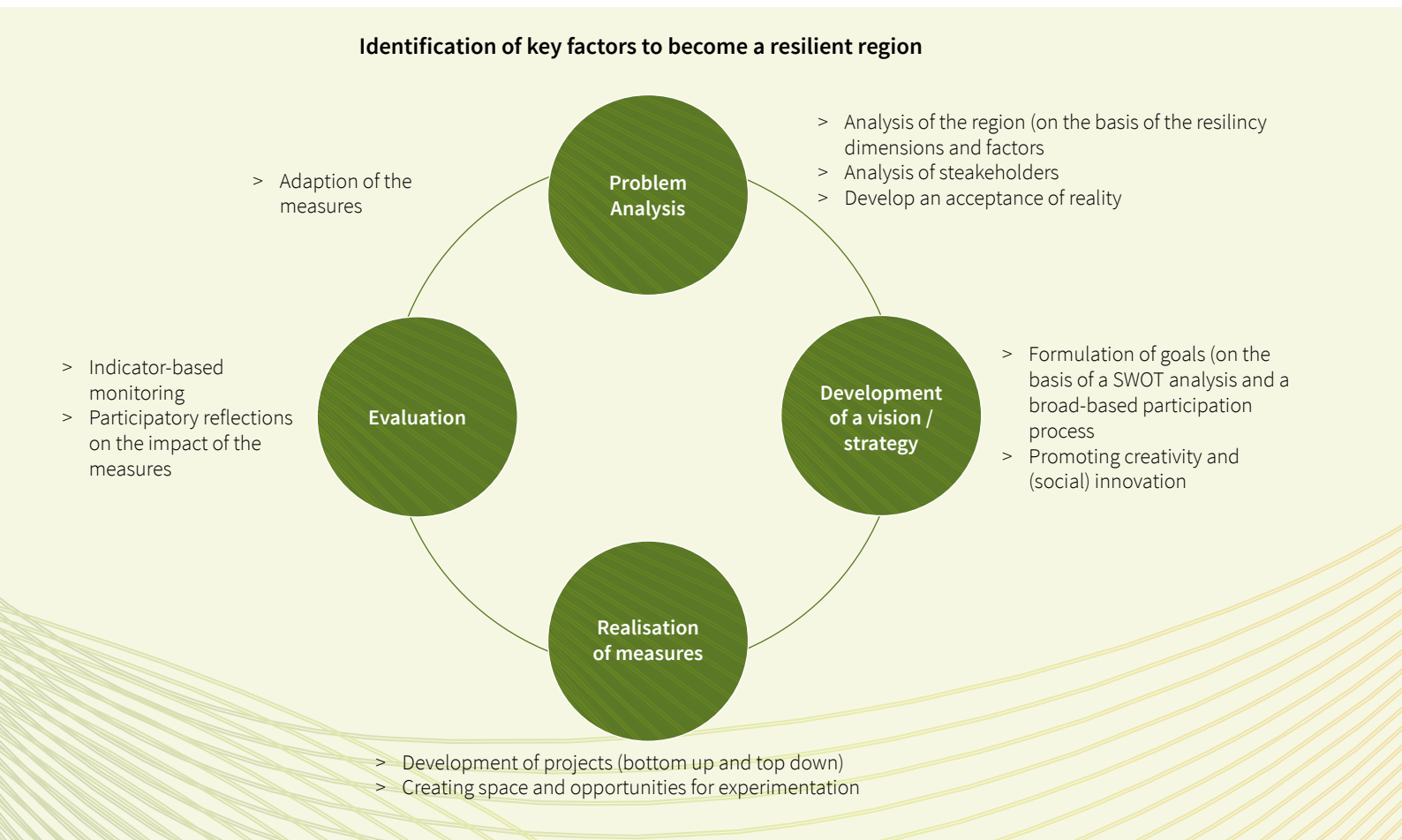


Figure 2.

Future Challenges

As mentioned in the present document, and as it became evident also during the Sustainability Days, resilience is a dimension that cuts across the social, economic and environmental aspects of the rural and alpine regions (see the best practices cited in the four different group sections in this document). However, more is necessary to be done. Thus, consistently with the view of resilience as a continuous process, policymakers are called to exploit new insights and approaches in engaging stakeholders, by asking experts and locals for the best solutions to co-create a sustainability-fit and shared vision for their region.

They should also convincingly continue to open spaces and opportunities for experimentation on social innovation and sustainability-oriented entrepreneurship. All these actions need to be accomplished by preserving the environment and the quality of life of these rural communities.

RECOMMENDATIONS

→ Create strategies to attract younger people and families to move to the Rural Region

Young people and families are the future of a region. Offer families and young people attractive opportunities to live and work in the region. Promote these opportunities in the surrounding towns and cities. It is important to pay special attention to their needs and to involve them in the development of the region.

→ Strengthen existing networks and providing opportunities to build new and diverse networks

Networks are important for social innovation. In rural regions, networks are often close-meshed and hermetic. Analyse the existing networks in your region and create opportunities for new networks to form, including women, newcomers and young people.

→ Provide and support institutions for continuing education (university, vocational education, etc.)

Access to education is an important factor for the attractiveness of a region. Look for innovative ways to improve access to education: Join forces with neighboring communities and regions, cooperate with further education institutions from surrounding cities, Invite further education institutions for lectures, etc. to your region.

→ Provide a good infrastructure for childcare services for all age groups

In order to be attractive for families, good childcare facilities are needed. Cooperation with employers can be helpful to create suitable offers for the region, especially in tourist regions.

→ Systematically strengthen transdisciplinary collaboration for regions that undergo disruptive change

Transdisciplinary approaches enable local experiential knowledge to be combined with scientific knowledge. and are essential for the development of a resilient region. Innovative methods offer a systemic approach to develop suitable solutions for each region. Among these methods we find laboratories (German: Reallabore), Innovation Hubs and Co-Working Spaces with curated programs that are led by state agencies, governments, communities, regions, companies, or research institutions for workers, companies, start-ups and the civil society.

→ **Replace physical connectivity and proximity by the implementation of new IT-based solutions**

New IT-based solutions help to overcome geographical distance and dispersion and improve the access to services of general interest (i.e., online administration, telemedicine, social care, cultural offers, etc.)

→ **Place-based experimentation for economic diversification**

The globalization phenomena have pushed certain regional systems to concentrate their economic development efforts on specific sectors under comparative advantage strategies. The latter might have led to prosperous economic sectors but at the same time exposed poorly diversified economies at the mercy of external market dynamics and global economic trends. To avoid possible regional locked-in and path dependency situations, social innovation, entrepreneurship and SME's policies should also address in a diversification perspective place-based experiments to co-create more sustainable business models and supply chains.

→ **Strengthen existing potentials: hidden champions**

In peripheral regions, there are several hidden champions, that is world market leaders such as SMEs that are highly specialized in a niche market and have the power to provide attractive work for talents. Market access, communication, marketing, and innovation of hidden champions should be supported. The impact of these actions will be job creation and an increase in regional income.

→ **Revive economic potential and “dormant” skills**

Foster dormant skills and knowledge about agricultural habits and their processing to let them blossom again. For example, in the Val de Travers, of the Swiss Jura, the “maison de l’absinthe” was established, with a museum, production facilities, marketing skills etc. ³ The impact of this intervention has been identity creation, new jobs, increased self-confidence and regional income.

→ **Circularity in a local development perspective**

The circular economy is a key pillar of current public policies. Although there is a wide consensus on the circular economy as a guideline for enterprises to reduce, reuse and recycle materials, the concept of circularity can hypothetically be an infinite loop in terms of economic growth perspective. More attention is needed to redefine circularity also in a geographical approach of the local economic system. Reducing the range and timing of transportation of materials and goods (shortening supply chains) is crucial to minimize environmental impacts while strengthening regional economic systems.

→ Economic decoupling for a well-being economy

The concept of decoupling is differentiated into breaking the link between economic growth and resource use (resource decoupling), and the link between economic growth and environmental pressure (environmental decoupling). Decoupling means for industries to focus on energy and resource decoupling in production, logistics and distribution processes, but also, to increase the quality, the value and ultimately the brand of products. Decoupling also means for policy makers to support and empower low environmental impact sectors (e.g. art and music, sport and wellness, eco-tourism and cultural activities, regenerative business and sustainable agriculture)

→ Identify the peculiar natural assets in the Region

RR are characterized by natural assets that sustain the agricultural and harvest systems but also provide ecosystem services (to entire regions). Each RR is asked to identify its peculiar natural assets, to focus on their ecological values and inter-connections, to pay attention to the different primary drivers and strengthen place-based approaches.

→ Enhancing the value of the natural environment and the cultural heritage

Natural assets should be looked at as the basis for sustainable development and regional competitiveness, together with cultural legacies and traditions that might strengthen the feeling of belonging, create visibility, and generate SME activities.

→ Targeted enhancement of biodiversity

RR should preserve and foster the provision of natural areas and enhance their quality. Indeed, natural assets in RR offer a variety of landscape patterns and aesthetics but also contribute to biodiversity and provide unique habitats for a variety of species.

GOOD PRACTICES

Transition Town Totnes

Transition Town Totnes (TTT) is a community-led and run local charity that exists to strengthen the local economy, reduce our environmental impact, and build our resilience for a future with less cheap energy and a changing climate.

→ www.transitiontowntotnes.org

The evergreen cooperatives of cleveland

Innovations for an Emerging Green Economy. The Evergreen Cooperatives of Cleveland have become a global innovation model for creating more sustainable regional economies. Local residents earn an ownership stake as they create thriving businesses, while playing a transformational role in building vibrant neighborhoods.

→ www.evgo.com

Fostering dormant skills in peripheral regions and building suitable programs

One example is the processing, marketing, and selling of Absinth in the Val de Travers in the Canton of Jura in Switzerland. By establishing the “maison de l’absinthe” with a museum, production facilities, marketing skills etc., the product and the process were revalued.

→ www.maison-absinthe.ch

Community housing projects on „ownerless“ land

Puy-Saint-André in the French Alps has reduced the buildable municipal area by confiscating “ownerless” land, is saving space thanks to community housing projects and promoting the supply of local food by means of pasture associations.

→ www.cipra.org

Collection of good examples and helpful brochures about different topics:

Social innovation in marginalised rural areas.

→ www.simra-h2020.eu

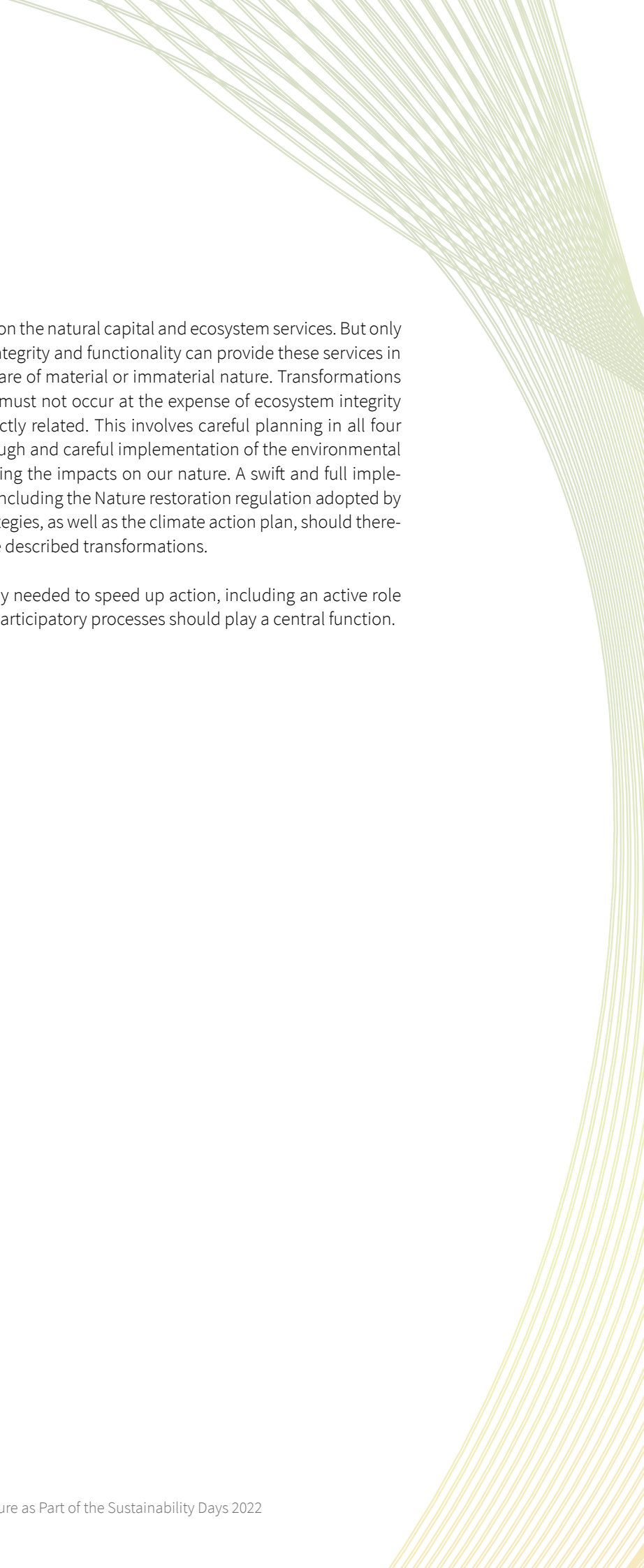
Key Messages for Policy Makers

The recommendations in this document consider sustainability as an integration of social, economic and environmental aspects for all the specific topics addressed. The current crisis and the main challenges should be addressed in an integrated approach based on long-term vision, striving to find win-win solutions. Taking action against climate change if done through a comprehensive approach considering not only economic factors but also ecosystems and human health will result in healthier and happier communities with a higher quality of life. Limiting our emissions might seem like having to renounce to some of our daily items, services and activities, but it mostly entails re-designing them in an innovative way that doesn't compromise the environment and is ultimately better for our health and wellbeing.

Meeting sustainability policy objectives may lead to trade-offs amongst goals, which may mean overlapping and sometimes conflicting stakeholder interests. These may be best addressed through appropriate stakeholder participation and dialogue on a continued basis. Therefore, the local government is responsible for promoting the dialogue between different interest groups to facilitate new cooperation: sustainability is a never-ending process of learning and negotiation. As social innovation and cultural aspects are key factors, a region must retain its traditions and character and combine technical and social innovation with its regional specificity. In this view local experience and traditional knowledge are as important as expert technical and scientific knowledge. Thus, to become a resilient rural region politicians and policy makers will be required to develop strategies and make decisions, but also to provide opportunities that favor the transition to sustainability: cooperation, participation, dialogue and transdisciplinarity are central to this process.

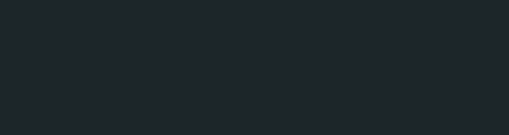
Delaying the implementation of the proposed recommendations will certainly result in additional and avoidable economic, social as well as environmental costs, in terms of the competitive status of the most innovative enterprises, of the well-being of the local communities, and in particular of key stakeholders. Postponing action will ultimately lead to increased physical risks for all of the players (e.g. violent adverse meteorological events are becoming increasingly frequent and intense); it will also make it more difficult, for the decision makers, to reach the targets set by the EU legislation and strategies, namely on climate, biodiversity and other environmental issues. In turn this will result in wasting funding opportunity and will jeopardize leadership of otherwise potentially well positioned regions. This is the time to transform good and visionary policies (including the ones that are voluntary) into immediate concrete action.





All human activities are strictly dependent on the natural capital and ecosystem services. But only ecosystems that maintain a high level of integrity and functionality can provide these services in the long run, irrespective of whether they are of material or immaterial nature. Transformations described in this recommendation paper must not occur at the expense of ecosystem integrity and biodiversity which, of course, are strictly related. This involves careful planning in all four topics described in the paper, and a thorough and careful implementation of the environmental assessment procedures aimed at minimizing the impacts on our nature. A swift and full implementation of the EU Biodiversity strategy, including the Nature restoration regulation adopted by the EU Commission, and Farm to Fork strategies, as well as the climate action plan, should therefore inspire and lay the foundations for the described transformations.

Leadership at all governance levels is badly needed to speed up action, including an active role of local governments, and well-informed participatory processes should play a central function.



STRATEGIC PARTNERSHIP

AUTONOME
PROVINZ
BOZEN
SÜDTIROL



PROVINCIA
AUTONOMA
DI BOLZANO
ALTO ADIGE

PROVINCIA AUTONOMA DE BULSAN
SÜDTIROL

