Ecological Vineyards Governance Activities for Landscape's Strategies

Output T3.2

Transnational strategy for applying participated territorial governance processes

Responsible Partner

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1. INTRODUCTION

The strategies, policies and guidelines regarding agroecology in general and with special regard to agriculture are developed on global, international and European Union levels and are in line with The Food and Agriculture Organization's 10 elements of Agroecology. On the other hand, there are no specific actions and steps how to achieve the transition to agroecological systems in agriculture and also in the viticulture sector.

In the Adriatic-Ionian (ADRION) area, viticulture is generally managed using intensive conventional systems with a large number of chemical products and substantial modifications of the traditional landscape. This type of intensive system leads to negative effects on soil, water and air quality, biodiversity and ecosystem services. On the other hand, in some ADRION areas the viticulture is still managed traditionally, but without a proper connection of the vineyards area with the landscape and ecosystem and building the sustainable and resilient grapevine cultivation and production, the future of viticulture could be threatened. This is why there is a special need to identify the main actions how to achieve the agroecological transition in viticulture and incorporate it into existing and future policy frameworks, with special regard to EU strategies.

The agroecological transition in viticulture was tackled by the ECOVINEGOALS project whose goal was to promote sustainability and resilience in the winemaking industry by encouraging the transition of intensive viticulture towards agroecological management systems that protect natural habitats and landscapes while reducing chemical and fossil fuel inputs and harmful emissions. The project's main aim was to enhance stakeholders' skills in participatory local governance, strengthen transnational cooperation and provide specific transnational instruments to promote, support and manage the agroecological transition.

The Transnational strategy for applying participated territorial governance processes represents an integrated framework with recommendations for participatory and more sustainable territorial governance of fragile wine-growing areas. The Strategy is based on the participatory governance process initiated in eight project pilot areas in Italy, Slovenia, Croatia, Serbia, Montenegro and Greece. The process was foreseen for launching a transformational path of intensive and fragile viticultural landscapes toward agroecological modes of production simultaneously promoting harmonious and balanced relationships between vineyards and accompanying multi-functional landscapes and natural habitats.

In our vision, this strategy will be used as a helpful tool to start the agroecological transition in viticulture in the ADRION area and could be further used in other wine-growing areas facing similar challenges.

The first part of the strategy is presented the strategic vision and the strategic goals to be achieved in the long run regarding the participatory governance for achieving the agroecological transition in viticulture in the ADRION area. The strategy explains the current situation in the ADRION area and the main challenges identified through the ECOVINEGOALS project. The main domains of the agroecological transition identified through the project had been presented and also territorial governance at play. The main body of the strategy presents the policy overview and the most important strategies that can be adapted with the agroecological transition approach.

2. THE STRATEGY VISION

Based on the findings of the ECOVINEGOALS project and the Adriatic-Ionian geographic area peculiarities is had been defined a common strategic vision aimed to achieve **sustainable and resilient viticulture with low input and emission management systems enhancing landscape and ecosystem.** With this vision, attention is given to the process of agroecological transition of viticulture in the ADRION area with special attention to the participatory territorial governance tackling the fragile viticultural landscapes. This is a transformative vision that encompasses all the levels of transition, starting from the farm-level landscape and ecosystem and governance level.

To achieve this vision of success, future political frameworks and strategies in ADRION and EU area need to incorporate the main findings of this strategy and adopt specific actions to encourage the process of transition. Future policies need to enable the development of sustainable viticulture in line with agroecological principles which will become more resilient, and energy-efficient and which do not disturb the habitat and ecosystem.

The ECOVINEGOALS project tackled the main challenges in the viticulture sector in the ADRION area. It was identified that the ADRION area used intensive management of viticulture and vineyard cultivation system that isn't in line with the habitat and ecosystem. The project approach and eminence partnership enabled the identification of the critical situations and main actions for achieving the agroecological transition of viticulture. Through the project, implementation had been identified the process of agroecological transition of viticulture adaptive and resilient to climate change, e.g., intensive weather conditions and events, that can have no or smaller influence on the vineyard profitability and ecosystem.

Through a participatory governance process, assembled within the ECOVINEGOALS project, the core was to design and assess the process of agroecological transition of intensive and fragile viticultural landscapes to sustainable low-input agricultural systems. This process was initiated in eight project pilot areas in Italy, Slovenia, Croatia, Serbia, Montenegro and Greece by engaging the key actors, policy-makers and stakeholders through participatory governance.

The ECOVINEGOALS approach enabled the identification of the actions necessary for the transition in viticulture in the ADRION area by using agroecological practices that will increase the economic management of vineyards and safeguard habitat and ecosystem, but also include all the actors through using participatory governance. Agroecological VIneyards NEtwork – AVINE will enable the achievement of the strategic goals through specific actions implemented through European policies and the continuation of the promotion of agroecology and benefits of agroecological transition in the ADRION area.

3. STRATEGIC GOALS

The strategic goals of *The Transnational strategy for applying participated territorial governance processes* are identified as the main long-term goals, which will enable the achievement of the vision defined. The strategic goals of this strategy will be accomplished when the connected specific actions would be included in the strategic policies on the European level and national levels of each country.

Figure 1. The main goals of *The Transnational strategy for applying participated territorial governance processes*

Increasing the resilience of cultivation systems in fragile wine-growing areas is identified as the first strategic goal of the Transnational strategy. Based on the participatory governance process and identified challenges through the project, the agroecological transition of wine-growing areas with identified agroecological practices will be achieved as the long-term goal. It was identified that each wine-growing area has its difficulties and challenges, but they could be overcome by using specific agroecological practices. For example, in BIOVENEZIA (Italy) should focus on soil fertility, in Vipava Hills (Slovenia) on the degree of biodiversity, Crmnica (Montenegro) on prevention of water eutrophication and other means of pollution, Istria County on the usage of resistant grape varieties and smart irrigation. This shows that there is a common need to be translated to other similar wine-growing areas on ADRION territory. The resilience of cultivation systems in fragile wine-growing area could be accomplished by implementing specific actions explained in Figure 2. By focusing on the specific actions and incorporating them into the policy framework, itcould be a solid ground to start the agroecological transition using responsible governance mechanisms.

Straighten the competitive advantage and knowledge of the viticulture sector s tackling the challenge of lack of education, training and raising awareness of the farmers, wine-growers, viticulturists and other stakeholders operating in the viticulture sector about agroecological practices and its benefits. Even if there would exist incentives for encouraging wine-growers and farmers to the usage of agroecological practices and also a strategy implying to start of the agroecological transition, the process of transition wouldn't be successful. The reason is an important one. Wine-growers, farm owners and employees don't have enough knowledge and skills to use the agroecological practices, not even enough financial resources to try. This is why there is a need to be more promoted and disseminated results from the scientific sector, especially about the influence of agroecological practices on soil, biodiversity, pollution, production and similar. Raising awareness and education of farmers and wine-growers but also the general public could help to achieve this long-term goal.

Increasing the development of rural areas by enhancing the viticultural production in line with ecosystem is a strategic goal identified because of the main issues happening in the ADRION area. One of them is the absence of young people willing to stay in the rural area and build a business in viticulture. Another issue is that a lot of the older population is cultivating the vineyards and they don't have any youngsters to inherit the work. This is why the local communities need to be supported through policies and strategies and encourage people to stay in rural areas. Building common benefits for the whole community will engage people to build their businesses more sustainably and improve the rural area.

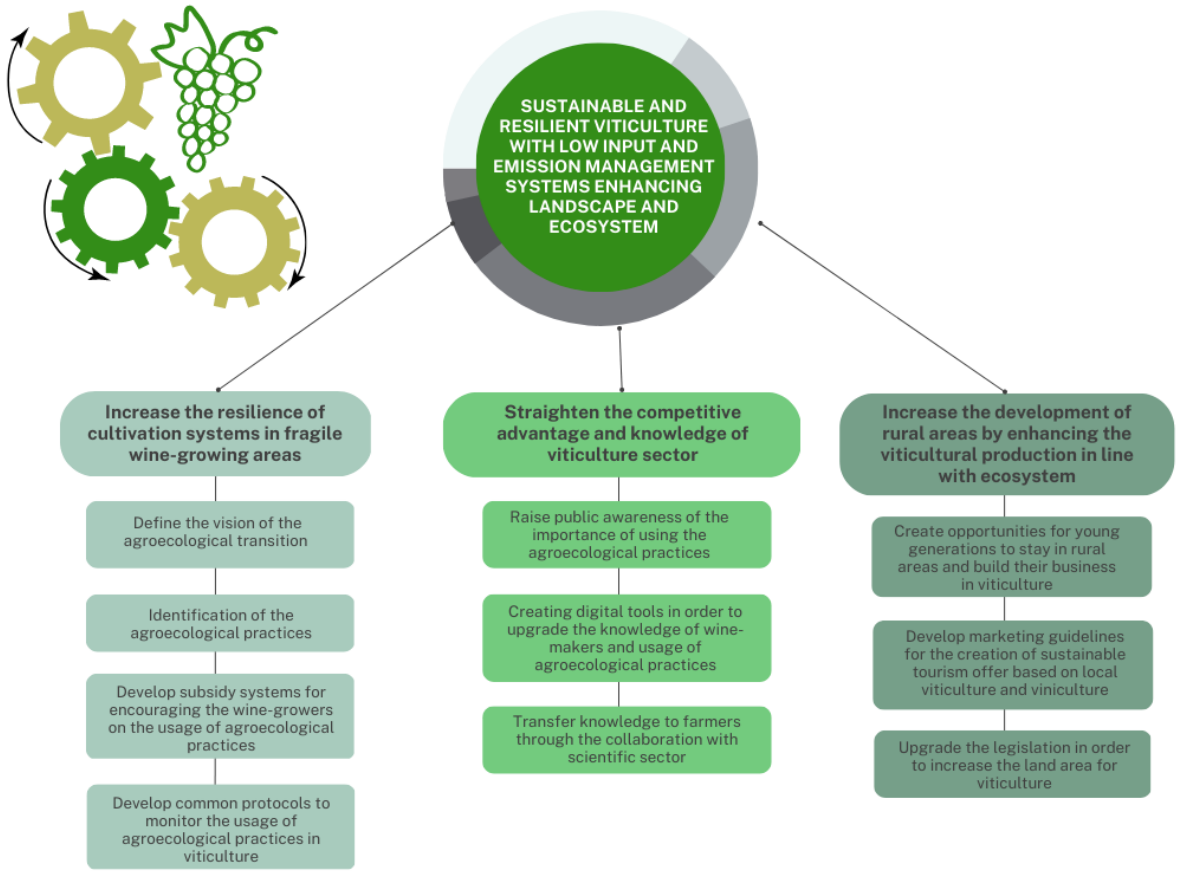

Figure 2. The relationship between strategic goals and actions of agroecological transition in ADRION area (prepared by author)

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4. STATE OF THE PLAY – STATUS IN THE ADRION AREA

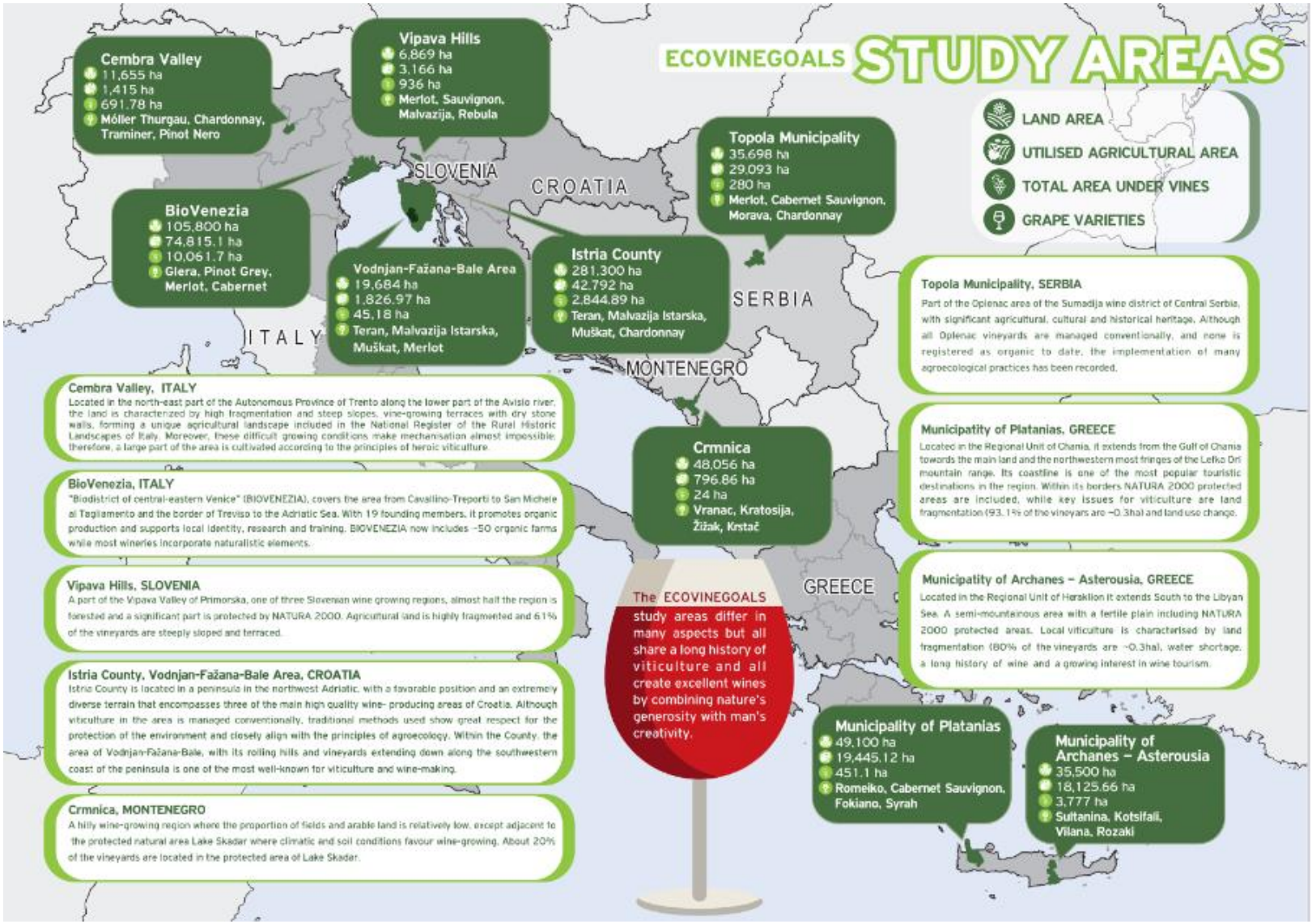
The reconciliation between habitat and landscape protection and grapevine cultivation is a common challenge for the ADRION area to safeguard the sustainability of economic activities based on territorial capital. These challenges were tackled by an integrated approach pursuing technical, economic, social, cultural, and governance objectives by the ECOVINEGOALS project.

The intensification of agriculture and the simplification of nature is becoming a reality in the vineyard regions. The increased simplification of landscapes and the creation of homogeneous agricultural systems leads to the increased vulnerability to potential yield losses due to plant diseases and insect pests. Also, the ecosystem services such as natural pest control, pollination, and soil fertility, could be lost. The unpredictability in weather patterns associated with climate change is increasing the volatility in the yield and production of crops.

Picture 1. Pilot area of Cembra Valley (IT)

Future climate change, precisely increased warming and dryness will probably bring about numerous impacts on European viticulture, mainly described as additional changes in grapevine phenological timing, disruption of the balance in grape and wine, earlier harvest, short growing season, changed taste: high in alcohol / low in acidity / too sweet, high risk for established typical varieties, decreases in grapevine yields, increased incidence of certain pests and diseases. It will potentially be led to more intensive weather events due to climate change, such as heatwaves, frost events, unpredictable storms and more devastating hailstorms, which also with a bad influence on viticulture.

The main challenges connected with the process of agroecological transition in viticulture had been identified through the analysis of eight project pilot areas, **Cembra Valley and BIOVENEZIA, Venice biodistrict in Italy, Vipava Hills in Slovenia, Istria County in Croatia, Crmnica in Montenegro, Topola Municipality in Serbia and Platanias and Asterousia Municipalities in Greece**.



Picture 2. ECOVINEGOALS pilot areas

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The main common concerns of pilot areas in some cases overlap, meaning that they present a real challenge also for the territory:

- Parcel fragmentation, small agricultural areas for wine-growing and unfavourable land policy regarding uncultivated agricultural land,
- A lack of know-how and skills for performing agroecological production and in the specialized work force,
- Out-migration of young people and employment outside the region and outside agriculture and ageing of farmers,
- Absence of recognition as specific wine-growing areas lack promotion and low awareness of the community of the viticulture opportunities,
- Lack of coordination among agricultural, touristic and service sectors regarding the promotion of viticulture,
- The devastation of natural and cultural resources to satisfy current tourist demand;
- High maintenance costs for the traditional dry-stone terraces;
- Inconsistency in the development of individual units of local self-government, regarding the spatial plans, planning and urban documentation,
- Basic geological and morphometrically data for the area is not available for end users at the national or local level,
- Intensive cultivation of grapes, excessive use of pesticides and fertilizers and poor soil management in vineyards,
- The gradual abandonment of local varieties and replacement of indigenous varieties with international ones,
- Organic wine growers face difficulties to find quality organic inputs,
- Low level of control for regulation application and
- Insufficient area of irrigated land and also poor utilization of precise irrigation of vineyards.

The ECOVINEGOALS project has identified two main situations that are crucial for achieving agroecological transition in the viticulture of the ADRION area. The first situation identified through the process of participatory governance is ***the level of connection with agroecology*** and this was identified through the SWOT analyses of each pilot area. The main result of the SWOT analyses had shown the opportunities in each area that could be achieved in the future to upgrade the viticulture and viniculture sectors.

The level of connection with agroecology in the project pilot areas can be identified through several factors. Factors are articulated around the geographical and natural conditions of the areas, types of agricultural practices (differences of using conventional, certified organic or integrated practices or if the farms are in transition), farm management system of weeds, crop diversity, usage of soil, connection with the landscape and ecosystem and socio-economic factors.

The second challenge identified is the ***involvement of the crucial actors, policy and decision-makers and their possibility to influence the policies, strategies and key documents to achieve the agroecological transition in viticulture***. The agroecological transition in viticulture, even if the territory and landscape show a high possibility for the transition achievement, could not be possible without responsible territorial governance. The level of involvement of key policy and decision-makers and their connection with farmers and communities, in general, represents a crucial part of the agroecological transition.

5. GOVERNANCE ACROSS DOMAINS OF AGROECOLOGICAL TRANSFORMATION

Agroecology has become a transformative paradigm in food production and farming, where the viticulture sector takes a large share. The ECOVINEGOALS project enabled the identification of main critical issues in wine-growing areas situated in the ADRION area to define a shared approach for the transition of viticultural farms towards progressive degrees of agroecological intensity and safeguarding of ecosystem services.

The participatory governance process, which was conducted through the project activities, it was identified as an important process of creating the ground and identifying the reasons and opportunities for the agroecological transition in wine-growing areas. Agroecology calls for responsible and effective governance to support the transition to sustainable viticultural systems. Transparent, accountable and inclusive governance mechanisms are necessary to create an enabling environment that supports the farmers, wine-growers and viticulturists to transform their systems following agroecological concepts and practices.

Agroecology goes far beyond demands for technical change and acknowledges that a range of 'lock-ins' to unsustainable regimes will only be addressed by shifts in political-economic power.[1] Responsible governance is the key point for starting the agroecological transition, where is needed to find a linkage between ecosystems and social needs. This is why agroecology emphasizes social and political aspects, crucial for accomplishing any change.

Agroecology, in its most transformative and political presentation, represents a framework that is centred on the synergistic relationship between people and nature, the agency, knowledge and rights of food producers and other food system actors, and the de-centring of profit, "the" (singular, reified) market, technology transfer and similar elements of "mainstream development" (such as the neologism "climate-smart agriculture"), and elite systems of governance. Social movements, scientists, and governments are thus linking agroecology to the notion of food sovereignty, just transitions and other transformative political economy frameworks. In this view, agroecology will only be possible when based on the affirmation of the right to food, the rights of peasants, eaters, and food producers, their cultures and their control over food practice and policy.[2]

The agroecological transition that tackled the main challenges on the ADRION wine-growing areas had identified exactly above-mentioned connections. Trough the participatory paths in eight wine-growing areas chosen as case studies in Italy, Slovenia, Croatia, Serbia, Montenegro and Greece was identified the strong connection of the farmers with the vineyards and surrounding landscape but without the right knowledge, skills and experience to completely understand the benefits of agroecology. This is the main reason why the participatory governance process of conducting different workshops and engaging all the key actors, could achieve further more quality and sustainable path of agroecological transition.

[1] Anderson C.R., Bruil J., Chappell M. J., Kiss C., Pimbert M.P.From Transition to Domains of Transformation: Getting to Sustainable and Just Food Systems through Agroecology

[2] Anderson C.R., Bruil J., Chappell M. J., Kiss C., Pimbert M.P.From Transition to Domains of Transformation: Getting to Sustainable and Just Food Systems through Agroecology

The futures-orientation and systems-sensibility of the sustainability transitions literature are valuable tools for making sense of processes of food systems change.[3] Within this tradition, sustainability transitions are considered ''long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption''.[4]

To better understand the process of agroecological transition through the participatory governance process, it will be explained the main domains of transformation. On the Figure 3 can be seen the transformation through the multi-level perspective, where the domains are having enabling and disabling factors in the transition.

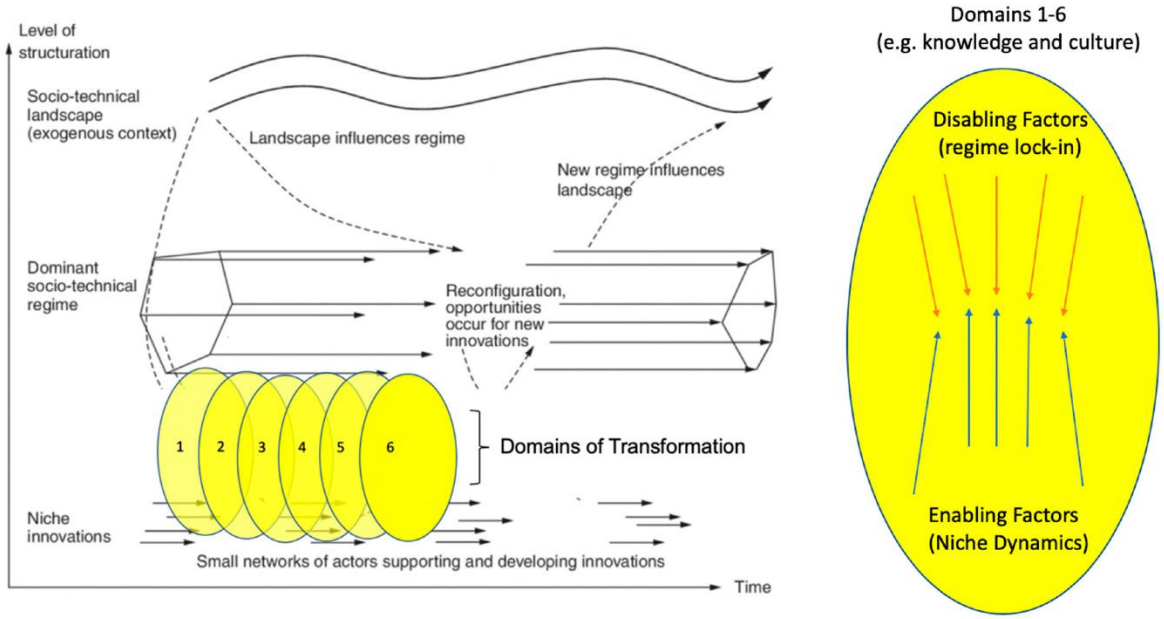

Figure 3. Domains of transformation

In figure 4 can be seen the domains as a determining factor in shaping agroecological production practices that are influenced by and in turn influence, processes of governance. These domains will be explained based on the participatory governance processes organized in each pilot area and its results for starting agroecological transition in wine-growing areas.

[3] Hinrichs, C.C. Transitions to sustainability: A change in thinking about food systems change? Agric. Hum. Values 2014

[4] Anderson C.R, Bruil J., Chappell M.J., Kiss C., Pimbert M.P., Agroecology Now! Transformations Towards More Just and Sustainable Food Systems

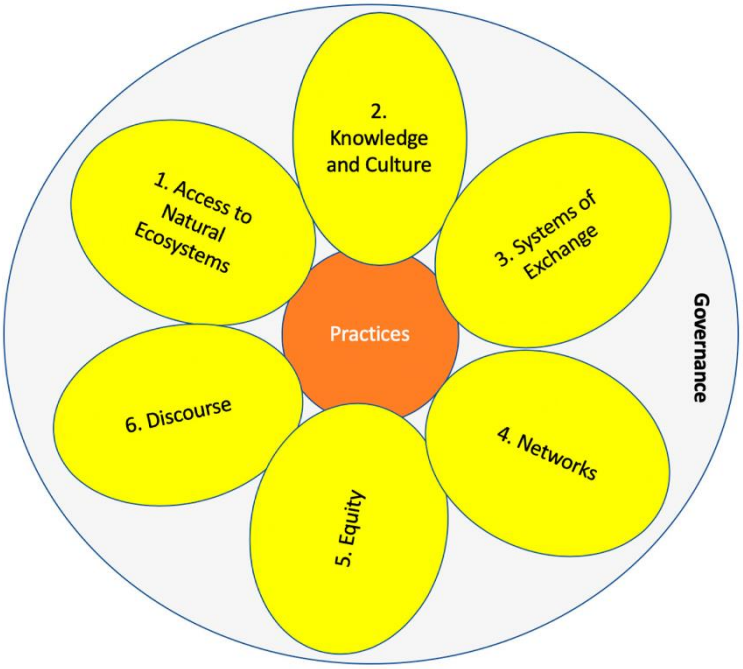

Figure 4. Domains of transformation for sustainable food systems through agroecology

5.1 Domain 1. Access to Natural Ecosystem

Agroecological transformations are closely tied to food producers' need to secure and access, control, use, and shape or configure land and physical territory consisting of communities, infrastructure, soil, water, biodiversity, air, mountains, valleys, plains, rivers, and coasts.[5] Changes in the political framework regarding land usage and appropriate land reforms, including other elements of natural ecosystems have already been revealed to be of crucial importance for smaller areas and livelihoods and investment in sustainable agriculture and agroecology. The results of the participatory governance and Local Action Plans of the eight pilot areas had shown that it has been identified a crucial need for upgrading the legislation to modify the land use and increase the land area for vineyards cultivation. It has been identified that the ADRION area isn't quite well regulated in the land use for agriculture and especially not for viticulture, and two main situations are happening. The first one is the smaller plot for growing vineyards and the bigger one for building and constructing houses and facilities. The second one is unused agricultural areas and unsolved state-owned land ownership. These situations are decreasing the adaptability and resilience of the areas to start the agroecological transition, so the policy frameworks and strategies need to be focused on this crucial issue. The participatory process conducted on the ECOVINEGOALS pilot areas enabled the identification of this issue as crucial for achieving the agroecological transition and safeguarding the ecosystem.

5.2 Domain 2. Knowledge and Culture

In light of agroecology's knowledge-intensive nature, the way that knowledge is constructed, produced, shared, and mobilized is a critical domain in agroecology transformations.[6] Through the participatory governance process has been identified that almost all pilot areas identified the need to transfer knowledge and educate farmers and wine-growers about the agroecological practices and benefits of the agroecological cultivation systems.

[5] Rosset, P.M.; Martínez-Torres, M.E. Rural Social Movements and Agroecology: Context, Theory, and Process
[6] Levidow, L.; Pimbert, M.; Vanloqueren, G. Agroecological Research: Conforming—Or Transforming the Dominant Agro-Food Regime

Also, it has been identified a need to create a linkage between the viticulture sector with the scientific sector to share knowledge and research results crucial for the work of farmers. It has been identified that in the ADRION area, the vineyards are managed traditionally with high respect for nature and landscape but this way of cultivation could not raise their resilience and future sustainability. Integrating different knowledge, and encouraging the collaboration of the real and scientific sectors could encourage viticulturalist to become a part of the agroecological cultivation system.

Picture 3. Pilot area of Vipava Hills (SLO)

5.3 Domain 3. Systems of exchange

Systems of exchange in food systems include the systems and processes by which: (a) agricultural products move from producers to the various users and consumers of these products; (b) the ways food producers acquire production inputs. The existence of appropriate and robust systems of exchange, including different types of markets, state provisioning, barter, gifts, and self-provisioning, are all important enablers of agroecology.[7] From the participatory process had been identified that in some of the pilot areas, the products like products or tourist experiences in vineyards are offered by the wine-growers and wine farms by themselves but also through different tourist operators, agencies and markets. It has been identified that the tourist offer based on viticulture and connected to the wine-growing areas and landscapes needs to be developed with the support of the local and regional policy and decision-makers. This is why each area needs to develop marketing guidelines regarding viticulture and connect it with agroecology from ecological, social, economic and political points of view.

[7] Cacho, M.M.Y.T.G.; Giraldo, O.F.; Aldasoro, M.; Morales, H.; Ferguson, B.G.; Rosset, P.; Khadse, A.; Campos, C. Bringing agroecology to scale: Key drivers and emblematic cases.

5.4 Domain 4. Networks

Multi-actor networks are pivotal in strengthening community self-organization for agroecology. Knowledge, markets, discourse, inclusivity, and production practices in agroecology are all developed through networking and social organization. Indeed, the depth and degree of social organization in networks is key for bringing agroecology to scale.[8] The agroecological transition can be effectively managed if all the actors are involved in the process. This was seen in each of the eight project pilot areas where have been involved all the key participants, starting from policy and decision-makers, local and regional governments, the scientific sector, wine-growers, representatives of wine-farms and viticulturists, institutions, agencies, associations and also in some cases general public. This identified the vision of agroecological transition of each area encompassing each perspective.

5.5 Domain 5. Equity

Since agroecology develops mostly through networking and community self-organizing, addressing equity at multiple levels is crucial. Gender inequity is a particularly critical barrier in agroecology transformations. Women generally have less access to productive resources and decision making, while still being disproportionately responsible for the household, caretaking, and agricultural tasks.[9] Even the results of the participatory governance process and the Local Action Plan for each project pilot area didn't identify any gender equity, it is important to pay special focus to this domain. Here can be only mentioned that while designing the process of agroecological transition, it's important to consider gender equity.

5.6 Domain 6. Discourse

Discourse, or the ways in which language is used to frame debates, policy, and action, can help or hinder processes of community-self organization and is a critical domain for agroecology transformations.[10] Given the dynamic and contested framing of agroecology, discourse on agroecology is in constant flux, and these fluid framing processes influence the direction of the agroecological transition and the capacity of communities to self-organize and shape agroecological transformations.[11]

[8] Cacho, M.M.Y.T.G.; Giraldo, O.F.; Aldasoro, M.; Morales, H.; Ferguson, B.G.; Rosset, P.; Khadse, A.; Campos, C. Bringing agroecology to scale: Key drivers and emblematic cases.
[9] Mora, A.; De Muro, P. Inequality and malnutrition.
[10] Giraldo, O.F.; Rosset, P.M. Agroecology as a territory in dispute: Between institutionality and social movements
[11] Benford, R.D.; Snow, D.A. Framing Processes and Social Movements: An Overview and Assessment

6. TERRITORIAL GOVERNANCE AT PLAY

A territorial approach to agroecology thus allows for holistic perspectives that take into account interlinkages between the three dimensions of sustainable development— social, economic and environmental—and the possible tensions and trade-offs between these dimensions and between different sectors. In other words: in the territory, farm-level land-use decisions that involve ecosystem functions are connected with dynamics at a landscape or territorial level.[12] Key to the potential for agroecological transformation is thus interaction and collaboration between wine-growers and other land users in a territory.

In terms of power and governance, the territory is an important interface between top-down provisioning by government programmes and investment *and* the democratic expression of citizens' needs, aspirations and demands—it is precisely here that the two can mesh through issues of power and governance. At the territorial scale, support structures and resources can be tailored to specificities of place (OECD/FAO/UNCDF) while increasing the potential for building and mobilizing territorial resources and mechanisms (knowledge, labour, relations, nature) to further catalyse agroecological transformations. Thus, the territory allows collective work to shift the rules of the game, reform institutions, build markets and foster innovation.

The territorial governance approach to agroecology can be strengthened in some ways through regional institutions and through regional policy but also through new grassroots and alternative institutions that transcend existing regional boundaries. Such new institutions and grassroots networks help to broaden and deepen territorial connections, relations and practices within the multi-scale governance framework (Figure 2.) and are most effectively built through the agency of territorial actors in processes of endogenous development.

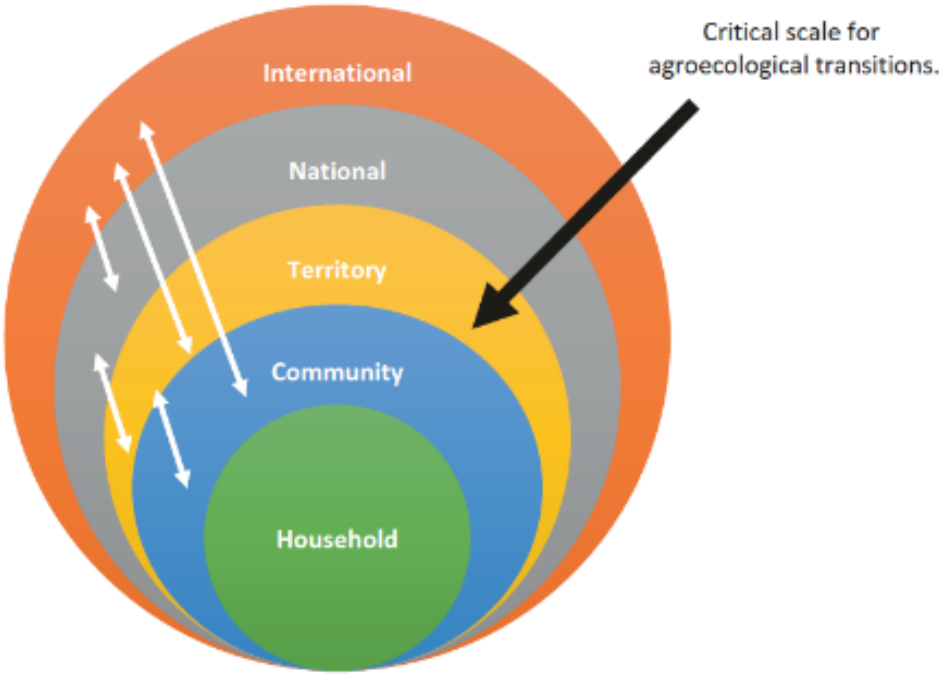

Figure 5. Multi-scale governance framework

[12] Anderson C.R, Bruil J., Chappell M.J., Kiss C., Pimbert M.P., Agroecology Now! Transformations Towards More Just and Sustainable Food Systems

Agroecology should be considered within a multi-scalar governance framework that examines the dynamic relationship between actors, institutions, systems, practices, and policies across the household, community, territorial, national, and international scales. At the same time, there is growing evidence of the primacy of the territorial scale for successful agroecological transformations.

Chapter 7 are analysed the most important policies to foster the agroecological transition but for upscaling the agroecological transition in the Adriatic-Ionian area the most important policy frameworks and strategies are the ones regulating on the European level. Regarding the above-shown multi-scale governance framework in the case of achieving agroecological transition in viticulture needs to first accomplish the policy change/modification on the national level e.g., on European Union Level and to be arranged to enable actors in territories to make decisions the national/regional/local level.

7. THE POLICIES TO FOSTER THE AGROECOLOGICAL TRANSITION

7.1 Policy context/framework

Multi-level governance frameworks necessitate horizontal/vertical alignment and policy coherence across global/national/local goals and development priorities.

Important contextual considerations:

- Purpose of the process.
- Geographic scope and focus.
- Legislative and jurisdictional (e.g., relevant connections to policy-making bodies) contexts.
- Time frame and process for decisions.
- Cultural, political and institutional considerations influence all of the above.

To understand the legislative, jurisdictional and social context, it is advantageous to provide an overview of the wider policy framework. As a starting point, an appraisal of relevant international legal instruments can give an overall normative frame for proposals at the national and local levels.

The global/international legal regimes:

The Paris Agreement / United Nations Framework Convention on Climate Change (UNFCCC)

- The UNFCCC is an international environmental treaty founded to reduce the greenhouse gas (GFG) concentration in the atmosphere to prevent dangerous anthropogenic human-induced climate change. The Paris Agreement was approved by 196 states at the 21st Conference of the Parties (COP) of the UNFCCC, with the goal to keep the rise in global average temperature to well below 2 °C above pre-industrial levels; targeting the increase to 1.5 °C, which should substantially reduce the risks and long-term impacts of climate change. All countries set discrete Nationally determined contributions (NDCs) for a five-year period.

1. **The Convention on Biological Diversity (CBD)**

- The Convention was adopted in 1992 as a multilateral legally-binding treaty with the objectives of conserving biodiversity, ensuring its sustainable use, and the equitable sharing of benefits from the genetic resources used. In 2010 the Strategic Plan for Biodiversity was agreed which included 20 "Aichi Biodiversity Targets". Its supplementary agreements are the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

2. **The International Treaty on Plant Genetic Resources for Food and Agriculture and the International Convention for the Protection of New Varieties of Plants (ITPGRFA)**

- The ITPGRFA institutes a global system that grants access to plant genetic materials to farmers, plant breeders and scientists, while ensuring that benefits from their use are shared fairly with countries where they originated.

3. **Conventions on chemical management**

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
- Stockholm Convention on Persistent Organic Pollutants.

Embedding Agroecology Elements in Nationally Determined Contributions (NDCs)

- Agroecology has increasingly been viewed as an approach with significant climate change mitigation and adaptation potential. Currently, 12.5% of countries explicitly mention agroecology in their NDCs (17 out of 136), and many others include sustainable agriculture principles and practices without naming agroecology specifically.
- Robust evidence[13] shows that agroecology aids climate change resilience through increased adaptive capacity and mitigation co-benefits, as well as increasing biodiversity, improving soil health, and supporting the co-creation and sharing of knowledge and traditions.
- Recommendations from a recent study[14] include: supporting agroecology as a climate change adaptation strategy; promoting multi-stakeholder dialogues and participatory governance and policy development processes; accentuating agroecology's systemic approach to capitalize on its transformative resilience-building possibilities; encouraging co-creation of knowledge; grasping the future NDC revision opportunities to incorporate agroecology in successive NDC cycles.
- In addition to the 17 countries citing agroecology explicitly, many other have referred to some elements of agroecology. Production elements were highlighted most prominently (diversity, synergies, efficiency, recycling, resilience) as opposed to the socio-economic and political dimension of agroecology (co-creation and sharing of knowledge, human and social values, culture and food tradition, responsible governance, circular and solidarity economy) which were principally neglected.

7.2 Non-legally-binding international instruments

1. **United Nations Agenda 2030 – The 17 Sustainable Development Goals (SDGs)**

   - The SDGs were agreed as part of the UN 2030 Agenda Resolution and comprise a set of 17 interlinked goals providing a blueprint to achieve a sustainable future for all. In Table 1 below, it's shown how agroecology can be leveraged to realize the SDGs.

2. **The Voluntary Guidelines for Responsible Governance of Tenure of Land, Fisheries and Forestry in the Context of National Food Security (VGGT)**

   - The VGGT provides functional guidance to countries on institutional frameworks for safeguarding tenure rights and supporting the sustainable management of land.

3. **The Voluntary Guidelines for Sustainable Soil Management (VGSSM)**

   - The VGSSM contain recommendations on sustainable soil management (SSM) from a technical and policy perspective, providing solid scientific principles and guidance on their practical applications for farming, pastoralism, and other forms of natural resources management.

4. **The International Code of Conduct on Pesticide Management**

   - The Code of Conduct was developed by The Food and Agriculture Organization of the United Nations (FAO) to provide guidelines for the sustainable use and distribution of pesticides. Article 6 lays down standards for state regulatory frameworks on pesticides, as critical components of sustainable agricultural systems.

[13] Leippert, F., Darmaun, M., Bernoux, M., and Mpheshea, M., The potential of agroecology to build climate-resilient livelihoods and food systems, Rome, FAO and Biovision, 2020
[14] Ibid.

Table 1: Leveraging Agroecology for realizing the Sustainable Development Goals

SDGs	Relevance of Agroecology	SDGs	Relevance of Agroecology
1 NO POVERTY	Agroecological approaches support family farmers and smallholders in lowering production costs, resulting in more stable livelihoods, reduced risks, economic security and resilience.	2 ZERO HUNGER	Agroecological production systems optimize the benefits of ecosystems such as soil health, pollination and pest control, both conserving biodiversity and ensuring productivity.
3 GOOD HEALTH AND WELL-BEING	By harnessing the biological processes in agriculture and reducing chemical inputs use, agroecological practices can be leveraged as safeguards for the health of both people and the planet.	4 QUALITY EDUCATION	Agroecology as a science is based on the indigenous knowledge of farmers, rooted in the context and "sense of place" or *terroir*, enhanced with the modern scientific insights of our age.
5 GENDER EQUALITY	Agroecology has the potential to advance women's rights and through inclusion in participatory processes recognize and empower women as central actors in farming and rural economies.	6 CLEAN WATER AND SANITATION	Agroecology promotes efficient water use practices, enhances soil water retention, values locally adapted crops that require less irrigation, as well as preventing groundwater pollution.
7 AFFORDABLE AND CLEAN ENERGY	Agroecology entails an integrated production approach that leverages locally available energy for reaching economically, environmentally and socially sustainable food systems.	8 DECENT WORK AND ECONOMIC GROWTH	Securing decent rural employment opportunities and farmer livelihoods are key features of the agroecological approach. The resilience of agroecology farming aids in preservingjobs.
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Agroecology promotes innovation in diverse food systems by fostering collaboration between all actors, especially farmers and researchers for sharing and acquiring new knowledge.	10 REDUCED INEQUALITIES	Agroecology promotes equal opportunities, trusting partnerships, sharing of traditional knowledge and collective action toward inclusive and sustainable local communities.
11 SUSTAINABLE CITIES AND COMMUNITIES	Balanced territorial development is a key feature of the agroecological approach, resulting in sustainable landscapes that provide multiple benefits for rural and urban areas.	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Agroecology is a key pillar of sustainable food systems. It promotes local and traditional knowledge led production with short value chains, resulting also in higher-quality diets.
13 CLIMATE ACTION	Agroecological practices can foster resilience and mitigate against climate change by reducing GHG emissions, storing carbon in soils and promoting integrated production systems.	14 LIFE BELOW WATER	The agroecological approach is seen in the Ecosystem Approach to Fisheries (EAF) and to aquaculture (EAA), ensuring an integrated approach to safe and balanced aquatic systems.
15 LIFE ON LAND	Agroecology can be leveraged for conserving biodiversity, restoring landscapes and expanding ecosystem services from farming above and beyond the agricultural sector.	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Agroecology supports responsible and participatory governance processes, collective representation and inclusive producers' organisations at all levels, solidarity and sharing of knowledge.
17 PARTNERSHIPS FOR THE GOALS	Collaboration, co-creation and trusting partnerships between local food system stakeholders are key features of productive, just, resilient and balanced agroecological ecosystems.	SUSTAINABLE DEVELOPMENT GOALS	

Adapted from FAO, Scaling up Agroecology Initiative. Transforming food and agricultural systems in support of the SDGs, 2018 & FAO's Work on Agroecology. A pathway to achieving the SDGs, 2018

7.3 European Union policy framework

The European Green deal is the new growth strategy of the European Union with the goal of a green industrial transition to boost the efficient use of resources by moving to a clean, circular economy and restoring biodiversity. In Table 2 below, the key post-2020 EU strategies and targets are recorded and linked to the FAO's 10 elements of Agroecology. The EU's Common Agricultural Policy until 2027 is currently being negotiated at national levels and the CAP Strategic Plans are being drawn up. The novel focus on the wider ecosystem seen in three of nine objectives – climate action, environmental care and landscape and biodiversity preservation, shows the potential of the new CAP to be an instrument for the agroecological transition.

The purpose of the 10 Elements of Agroecology is to operationalize agroecology. The FAO has categorized the interdependent elements into three groups.

Characteristics of agroecological systems, foundational practices and innovative approaches

1. Diversity;
2. Co-creation and sharing of knowledge;
3. Synergies;
4. Efficiency;
5. Recycling;
6. Resilience;

Context features

7. Human and social values;
8. Culture and food traditions;

Enabling environment

9. Responsible governance;
10. Circular and solidarity economy

In the table below an indicative overview of possible synergies between the key EU strategies and targets, and the 10 elements of Agroecology were drawn up.

Table 2: Synergy between the EU policy framework and the FAO's 10 elements of Agroecology

		10 elements of Agroecology									
Strategies and main headings	Headline targets / objectives	DIVERSITY	CO-CREATION AND SHARING OF KNOWLEDGE	SYNERGIES	EFFICIENCY	RECYCLING	RESILIENCE	HUMAN AND SOCIAL VALUES	CULTURE AND FOOD TRADITIONS	RESPONSIBLE GOVERNANCE	CIRCULAR AND SOLIDARITY ECONOMY
Farm to Fork											
Ensuring sustainable food production	Reduce by 50 % the overall use and risk of synthetic chemical pesticides & the use of more hazardous pesticides by 50% by 2030	*		*	***	***	***			*	*
	Reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility. This will reduce	*		*	***	***	***			*	*

	the use of fertilisers by at least 20% by 2030.										
	Reduce by 50% sales of antimicrobials for farmed animals and in aquaculture by 2030			*	***	***	***			*	*
	at least 25% of the EU's agricultural land under organic farming by 2030	**		*	***	**	***	*	*	*	*
	Promote sustainable agricultural practices including through improved sustainability accounting		**	*	*	***	***	**	**	**	***
	Promote diversity in seed varieties	***		*		***	***	**	***	*	***
	Improved animal welfare					***	***	**	***	*	*
	Addressing emerging plant health issues					***	***				
Ensuring food security	Increase the sustainability of food producers to increase their resilience	**		**	*	***	***	***	***	***	***
Stimulate sustainable food processing, wholesale, retail, hospitality and food services practices	Improve the marketing of sustainable food and drink products			*		*	*	***	***	**	**
	Promote sustainable and socially responsible production methods and circular business models in food processing		**			***	***	***	***	**	***
Promote sustainable food consumption, facilitating the shift towards healthy, sustainable diets	Reverse the rise in overweight and obesity rates across the EU by 2030	***				**	*	***	***	**	**
	Improve nutritional and sustainability labelling		*			*	*	***	***	***	**
	Improve the role of sustainable food public procurement, including catering		*				*	***	***	***	**
Reducing food loss and waste	Halving per capita food waste at retail and consumer levels by 2030				**	***	***	***	***	***	***
Enabling the transition	Research, innovation, technology and investments	*	***	*	*	*	*	**	**	**	**
	Advisory services, data & knowledge-sharing, skills	*	***	*	*	*	*	**	**	**	**
Promoting the global transition	Sustainable, green and inclusive international development	*	**	*	*	*	**	***	***	***	***
Biodiversity Strategy 2030											
A coherent network of	Strictly protect at least a third of the EU's protected areas, including all	**				*	**			**	*

protected areas	remaining EU primary and old-growth forests										
	Legally protect a minimum of 30% of the EU's land area and integrate ecological corridors, as part of a true Trans-European Nature Network	**				*	**			**	*
	Effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately	**	**		**	*	**			**	*
Strengthening the EU legal framework for nature restoration	By 2030, significant areas of degraded and carbon-rich ecosystems are restored; habitats and species show no deterioration in conservation trends and status; and at least 30% reach favourable conservation status or at least show positive trends	**				**	***	*	*	***	***
Bringing nature back to agricultural land	Support and incentivise the transition to fully sustainable agricultural practices	***	*	**	*	**	***	***	***	***	***
	Reduce by 50% the overall use of – and risk from – chemical pesticides by 2030 and reduce by 50% the use of more hazardous pesticides by 2030 (F2F)	*		*	***	***	***			*	*
	At least 25% of the EU's agricultural land must be organically farmed by 2030 (F2F)	**		*	***	**	***	*	*	*	*
	Consider an increased uptake of agroforestry practices	**		*	*	*	**	*	*	**	**
	Reverse the decline of genetic diversity	***			*		***	*	*	**	**
	Reverse the decline in pollinators	***			*		***			**	**
	At least 10% of the agricultural area is under high-diversity landscape features	***		**	*		***			**	**
Increasing the quantity of forests and improving their health and resilience	Three billion new trees are planted in the EU, in full respect of ecological principles	*			*		*			**	**
Addressing land take and	Step up efforts to protect soil fertility, reduce soil	***		***	**	***	***	**	**	**	**

restoring soil ecosystems	erosion and increase soil organic matter										
Addressing invasive alien species	There is a 50% reduction in the number of Red List species threatened by invasive alien species	***					**			**	**
Win-win solutions for energy generation	Ensure forest biomass is sustainably used for energy generation	***			***	**	*	**	**	**	**
Restoring freshwater ecosystems	Restore at least 25,000 km of rivers into free-flowing rivers by 2030	***				*	**	**	**	*	
Reducing pollution	Reduce nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility. This will reduce the use of fertilisers by at least 20% by 2030 (F2F)	*		*	***	***	***			*	*
Measuring & integrating the value of nature	Robust measurement of essential features of biodiversity, its services, values, & sustainable use		**	*	**		**	**	**	***	**
Improving knowledge and skills	Capacity building as a horizontal objective		***	*	*	*	**	***	***	***	***
Other EU Green Deal strategies											
Long-term vision for rural areas	A common vision for rural development	**	***	***	**	*	**	***	***	***	***
European Climate Law	A legally binding target of net zero greenhouse gas emissions by 2050			*	**	*	***	**	*	**	**
Circular Economy Action Plan	Recycling and circular systems.		*	*	**	***	***	**	**	***	***
LULUCF Regulation	No debit rule: Member States to ensure that accounted emissions from land use are entirely compensated by an equivalent removal of CO_2 from the atmosphere via action in the sector			*	*	***	***	*	*	**	**
Effort Sharing Regulation	GHG emissions reduction targets				**	***	***	**	**	***	
Zero pollution action plan for water, air and soil	Improving air quality (reduce deaths by 55%), reducing waste in water (50%), soil quality (50% reduction of pesticides)	*	**	*	*	***	***	**	*	***	***
Chemicals strategy for sustainability	Reduction of harmful pesticides and boost use of sustainable chemicals				*	*	**	**	*	**	**
New EU Forest Strategy	Effective afforestation, forest preservation and restoration in the EU				*	*	**	*		**	**

EU strategy on adaptation to climate change	Integrating adaptation into macro-fiscal policy; nature-based solutions; local adaptation action				*	*	***	**	*	***	**
Industrial Strategy for a clean and circular economy	Competitive, climate-neutral, digital, circular and just industrial transition				**	***	***	***	**	***	***
8th environmental action plan	Accelerating the green transition in a just and inclusive way				*	**	***	***	**	***	**
Legislative waste reforms	Reduction of food waste				*	***	***	***	***	***	***
2020 Clean Energy Package	20% cut in GHG emissions (from 1990 levels); 20% of EU energy from renewables; 20% improvement in energy efficiency				*	*	**	**	**	***	**
Adapted from EU Green Deal documents and the ENRD thematic work on The European Green Deal and Rural Areas.											

Legend
***** *Some synergy*
****** *Medium synergy*
******* *Significant synergy*
[based on the authors' assessment]

Most of the EU policy framework chronicled above can be seen as highly or partially in a synergetic relationship with the agroecological approach. Furthermore, it can be seen, jointly with the international governance framework, as a vital argument for the inclusion of agroecology and its practices in development plans and documents at the national and local levels.

Common Agricultural Policy (CAP)

The Common Agricultural Policy is instrumental in managing the transition towards a sustainable food system and in strengthening the efforts of European farmers to contribute to the EU's climate objectives and to protect the environment. The European Parliament approved 2021 the new CAP 2023-2027 and it focuses on nine specific objectives, linked to community, environment and economy, to increase sustainability in agriculture and rural area. They are the following[15]:

- to support viable farm income and the resilience of the agricultural sector across the Union to enhance long-term food security and agricultural diversity as well as to ensure the economic sustainability of agricultural production in the Union;
- to enhance market orientation and increase farm competitiveness both in the short and long terms, including a greater focus on research, technology and digitalisation;
- to improve the farmers' position in the value chain;
- to contribute to climate change mitigation and adaptation, including by reducing greenhouse gas emissions and enhancing carbon sequestration;
- to foster sustainable development and efficient management of natural resources such as water, soil and air, including by reducing chemical dependency;
- to contribute to halting and reversing biodiversity loss, enhance ecosystem services and preserve habitats and landscapes;
- to attract and sustain young farmers and new farmers and facilitate sustainable business development in rural areas;
- to promote employment, growth, and gender equality, including the participation of women in farming, social inclusion and local development in rural areas, including the circular bio-economy and sustainable forestry;
- to improve the response of Union agriculture to societal demands on food and health, including high-quality, safe and nutritious food produced sustainably, to reduce food waste, as well as to improve animal welfare and to combat antimicrobial resistance.

7.4 The Instrument for Pre-accession Assistance in Rural Development (IPARD) and Green Agenda for Western Balkans (GAWB)

The EU pre-accession assistance for rural development16 aims to improve agricultural sustainability in countries in the process of joining the EU – such as Montenegro and Serbia where two of the eight pilot areas of the project are settled – and to align them with the EU's common agricultural policy. The Green Agenda for the Western Balkans (GAWB) constitutes instead a strategic plan, endorsed by representatives of North Macedonia, Montenegro, Serbia, Albania, Bosnia and Herzegovina and Kosovo, to align with European Green Deal objectives. They will adopt:

- a strict climate policy to achieve the target of a carbon-neutral continent;
- a circular economy to improve environmental protection and minimize the amount of waste;
- a long-term strategy for preserving biodiversity and finally;
- efforts to make more sustainable the agriculture sector more, also through the transfer to innovative and environmentally friendly technologies, including agroecological practices.

[15] The new common agricultural policy: 2023-27 https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/new-cap-2023-27_en

9. POLICY RECOMMENDATIONS FOR APPLYING PARTICIPATED TERRITORIAL GOVERNANCE PROCESSES IN ADRION AREA

Over the past five years, agroecology has emerged in the international policy arena as an alternative paradigm for food and farming that can address multiple crises in the food system, contribute to the Sustainable Development Goals and enable a just transition. Agroecology entails a process of continuous transition that does not follow prescriptive rules, but is based on core principles, values, or elements that inform agroecology in the cultural, ecological, and social specificities of place.[16]

The Adriatic-Ionian area is rich with beautiful vineyards landscape and it's well known for its quality wine production and also as a tourist wine destination. The ECOVINEGOALS project had proved the existence of great possibilities to enhance the wine-growing areas' sustainability and resilience by using agroecology principles and practices. It had been identified main challenges extracted from eight pilot areas, Cembra Valley and BIOVENEZIA, Venice district in Italy, Vipava Hills in Slovenia, Istria County in Croatia, Crmnica in Montenegro, Topola Municipality in Serbia and Platanias and Asterousia Municipalities in Greece, and it has been developed a mutual consensus on actions adequate for the ADRION area.

Chapter 7., were explained the main policies that can have an effect on agroecological transition and upscaling the process of viticulture areas with a long tradition of vineyards cultivation. To establish the path for the agroecological transition in the ADRION area and encourage farmers, wine-growers and viticulturists on the agroecological practices usage, the European policies and strategies directly and indirectly connected with agriculture, agroecology, viticulture, climate change and biodiversity need to be modified and changed. Agroecological practices and agroecology, in general, can produce a great impact on the resistance of viticulture in future but also encourage farmers and wine-growers to start with the agroecological transition even in small steps.

The strategy vision with its strategic objectives connected with the specific actions are in line with the From Farm to Fork, Biodiversity Strategy 2030, Green Deal and especially with the Common Agricultural Policy 2021-2027. Also, very important is The Instrument for Pre-accession Assistance in Rural Development (IPARD) and Green Agenda for Western Balkans (GAWB), regarding the countries that are situated

In a recent communication from the Commission to the European Parliament, an Agroecology Eco-scheme, including organic farming, but also more limited farming practice changes going beyond conditionality, was highlighted as one of four flagship Eco-schemes, the others being agroforestry, precision farming and carbon farming (EC, 2020c). As part of the implementation of the European Commission's Green Deal, the Biodiversity and Farm to Fork Strategies (EC, 2020a, 2020b), are intended to be the starting point of a new debate on formulating a more sustainable and bio diversity friendly food policy, encouraging agroecology and in particular ambitious targets for the further expansion of organic farming to 25 % of EU land area by 2030.

[16] Anderson C.R., Bruil J., Chappell M. J., Kiss C., Pimbert M.P.From Transition to Domains of Transformation: Getting to Sustainable and Just Food Systems through Agroecology

These strategies cover most of the key areas identified here and require coordination between agricultural, food, environmental and public health policies and collaboration of stakeholders across those sectors. The key challenge will be how they are realised in practice, and the extent to which member states and their regions are enabled/required to integrate them in their CAP strategic plans.

The policy framework of the From Farm to Fork, Biodiversity Strategy 2030, Green Deal and Common Agricultural Policy 2021-2027 can be modified and upgraded with specific actions to achieve the strategic goals for agroecological transition in the ADRION area. The most important thing is that agroecology in general, agroecological practices and principles need to be supported by the most important European policies and encouraged to be used. The second most crucial issue is that participatory governance processes are important to define the aspects, challenges and opportunities for the agroecological transition in viticulture. For the Adriatic-Ionian viticulturist, wine-growers and farmers are essential to be encouraged to use agroecological practices through specific incentives and their skills and knowledge needs to be advanced with education., collaboration with the scientific sector and with digital tools. Their work needs to be monitored to use the most appropriate agroecological practices to enhance the landscape and safeguard the ecosystem. An important matter is the encouragement of youngsters and younger people to stay in rural areas and cultivate the land by using agroecology and raising awareness among the citizens and the general public about the benefits of the agroecological transition. Special requirements for creating sustainable tourism offers in the ADRION area are articulated around specific packages promoting traditional landscapes in line with nature and providing a picture of viticulture as a tourism experience.

One of the main outputs of the ECOVINEGOALS project is the created network called Agroecological VIneyards NEtwork – AVINE whose key aim is the capitalisation of the project results. The project partnership signatories agreed to continue cross-border cooperation to find solutions to reconcile agricultural production with biodiversity conservation, habitat and landscape maintenance and restoration at different scales, to address the environmental vulnerability, and fragmentation, safeguard ecosystem services, promote participatory governance activities and support agroecological in the Adriatic-Ionian area. The AVINE network will enable the achievement of the strategic goals through specific actions implemented through European policies and the continuation of the promotion of agroecology and benefits of agroecological transition in the ADRION area.

Figure 6. Agroecological transition of viticulture in ADRION area through participatory territorial governance processes

11.CONCLUSION

There is growing urgency over the ecological crisis and increasing evidence that socio-economic systems are fundamentally undermining the functioning of the natural world. The latest Intergovernmental Panel on Climate Change (IPCC) report paints a dire picture of the impacts of anthropogenic climate change. Other major reports have drawn attention to other convergent crises, including the accelerating extinction rate of species, looming water shortages for 5 billion people, dangerous degradation and pollution of land and soil and accelerating resource throughputs, and the increasing levels of air pollution and resulting health-related death and disease. Yet, questions of the nature of these changes and how to achieve them require urgent attention.[17]

The situation in the Adriatic-Ionian area is tackling the intensive management of viticulture resulting in negative effects on soil, water and air quality, biodiversity and ecosystem services but also territories where the vineyards are cultivated traditionally with high respect to nature, but without special attention to agroecology and sustainable systems. This is why the project ECOVINEGOALS undertook the main challenges in the viticulture sector in the ADRION area and by using a participatory governance process, help develop strategies, action plans, tools and capacities for agroecological transition of viticulture towards low input and low emission management systems, with special attention to the agroecology principles and practices.

This strategic document had identified the main vision aimed to achieve sustainable and resilient viticulture with low input and emission management systems enhancing landscape and ecosystem. This vision will enable the crucial steps for the agroecological transition of viticulture in the ADRION area by modifying and upgrading the most important European policies with specific actions. The From Farm to Fork, Biodiversity Strategy 2030, Green Deal and Common Agricultural Policy 2021-2027 have been identified as the most important policy framework for incorporating actions crucial for achieving agroecological transition in fragile wine-growing areas.

In eight pilot areas, Cembra Valley and BIOVENEZIA, Venice biodistrict in Italy, Vipava Hills in Slovenia, Istria County in Croatia, Crmnica in Montenegro, Topola Municipality in Serbia and Platanias and Asterousia Municipalities in Greece had been identified main challenges tackling the viticulture sectors and actions significant for the agroecological transition in viticulture. These actions because of the peculiarities of the area can be easily adapted to the whole ADRION area. It has been identified that agroecology is best supported by responsible governance mechanisms at different scales and that any action can't be achieved without the alliance between ecosystem and social needs. This is why it is based on a multiscale approach and the agroecological transition can be initiated when all the factors had been taken into account.

The Transnational strategy for applying participated territorial governance processes developed an integrated framework with recommendations for participatory and more sustainable territorial governance of fragile wine-growing areas to become more sustainable and resilient.

[17] Anderson C.R., Bruil J., Chappell M. J., Kiss C., Pimbert M.P.From Transition to Domains of Transformation: Getting to Sustainable and Just Food Systems through Agroecology

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