



Ecological Vineyards Governance Activities for Landscape's Strategies

Deliverable T3.4.3

Transnational guidelines to support agroecological transition processes through participatory governance

Responsible Partner

AZRRI-Agency for Rural Development of Istria Ltd. Pazin

20th of October 2022 – 1st version

28th of November 2022 – final version

BASIC PROJECT INFORMATION:

PROGRAMME CALL: INTERREG V-B Adriatic-Ionian ADRION

Project Acronym ECOVINEGOALS

Project Number: 866

Programme Priority Axis: 2

Start – End Date: 01.03.2020 – 31.08.2022

Total budget: EUR 1 939 505.59

ERDF: 1 399 759.25 IPA: 248 820.5

Lead Partner Organisation: LAG Eastern Venice, Italy

Url: www.ecovinegoals.interregadrion.eu

DOCUMENT INFORMATION

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Dissemination Level	PU and PP ¹

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November, 2022

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¹ PU = Public document; PP = Partnership document

Project Summary

ECOVINEGOALS promotes 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 aims to enhance stakeholders' skills in participatory local governance, to strengthen transnational cooperation and provide specific transnational instruments to promote, support and manage the agroecological transition.

Expected results

- Sharing between partners in the ADRION countries of fundamental concepts and practices necessary for the transition from intensive viticulture management systems, towards agroecological management methods.
- Improvement of the participatory local governance skills of decision makers and all other viticulture stakeholders, both public and private, to jointly develop and define strategies and plans aiming to protect natural habitats and rural landscapes.
- Transnational communication, cooperation, and exchange between regional authorities and civil society organizations concerning common objectives to protect vulnerable environments, to promote ecosystem services, to prevent or mitigate climate change, and to avoid social conflicts in land use.
- An increase in the number and quality of tools and strategies available to support the planning and management of the agroecological transition of viticulture systems in the region.

Partnership:

PP1- LP	LAG EASTERN VENICE, VEGAL (IT)
PP2	Autonomous Province of Trento, PAT (IT)
PP3	Chamber of Agriculture and Forestry of Slovenia, KGZS-Zavod GO (SI)
PP4	Research Centre of the Slovenian Academy of Sciences and Arts, ZRC SAZU (SI)
PP5	Agency for Rural Development of Istria Ltd Pazin, AZRRI (HR)
PP6	Association for the promotion of employment, vocational training and education, INFORMO (HR)
PP7	Business Development Center Kragujevac, BDCKG (RS)
PP8	Foundation Business Start-up Center Bar, BSC BAR (ME)
PP9	Municipality of Bar, BAR (ME)
PP10	Mediterranean Agronomic Institute of Chania, CIHEAM MAICH (EL)

Associated Partners (APs):

General Union CISL Cultivators Venice (IT)
Bio district of production and biological community of central-eastern Venice - BIO VENICE (IT)
IAL - Innovation Learning Work S.r.l. - Social enterprise (IT)
AIAB-Italian Organic Agriculture Association (IT)
Agroecologiki SP (EL)
Municipality of Topola (RS)
Šumadija winemakers association (RS)
Ministry of Agriculture and Rural Development (HR)
Agroecology Europe (BL)

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INTRODUCTION

WPT3: Participatory governance for agroecological transition of vineyards foresees the realization of participatory backcasting paths in wine-growing areas chosen as case studies in each of countries involved. These areas are identified in WP3 as intensive wine-growing areas that are fragile from habitat and landscape point of view. The aim is to increase capacity for shared agroecological governance of territory by public and private decision-makers. The participatory paths allow solution of conflicts of use of territory through identification of shared solutions among interested parties.

The reconciliation between habitat and landscape protection and grapevine cultivation is a common challenge for ADRION area in order to safeguard the sustainability of economic activities based on territorial capital. These challenges must be tackled by an integrated approach pursuing technical, economic, social, cultural, and governance objectives. The corresponding project-outputs concern the sharing of tools and strategies to encourage the agroecological transition of wine growing areas. Overcoming these challenges also entails the increase of population awareness on the impacts of intensive wine systems on habitat and landscape and the adoption of participatory governance methodologies involving citizens, public authorities and stakeholders.

Within the project ECOVINEGOALS, a participatory governance process is foreseen for launching a transformational path of intensive viticultural landscapes toward agroecological modes of production simultaneously promoting harmonious and balanced relationships between vineyards and accompanying multi-functional landscapes and natural habitats.

The agroecological transition entails a long-term process of adopting tailored solutions to context specific challenges of different viticultural landscapes via multi-stakeholder combined actions toward mutually set goals and a common challenge of the respect of environment, economic and social equilibriums of a given territory and a given culture.

Following a common methodology based on backcasting, the participatory backcasting workshops in their pilot area had been held, where has been initiated the process of the agroecological transition of their chosen viticultural landscape. Trained and educated facilitators through several local workshops, had collected the data about the most valuable and vulnerable elements of the pilot area, defined the possible solutions and with the relevant stakeholders demarcated the actions needed for the agroecological transition.

The multi-stakeholder workshops had enabled to define a common future vision of what the sustainable and resilient viticulture is and how to start the agroecological transition in each pilot area. With important stakeholders and decision-makers, the Action Plan on territorial governance for agroecological transition had been made for seven pilot areas. This Action plans had summarized the data about viticulture in pilot areas and the actions that should be applied by using governance in agroecological processes of the intensive wine-growing areas of the ADRION area.

This document represents the development of a participatory governance approach which confronts the viticulture focused only to economic-productive objectives with the sustainable and resilient viticulture, that is in line with the habitat and landscape.

Local and regional decision and policy-makers as well as stakeholders will have on their disposal the guidelines which will be consisted of shared solutions for achieving the participatory and more sustainable governance of fragile areas with intensive viticulture.

1. THE NEED FOR AGROECOLOGY

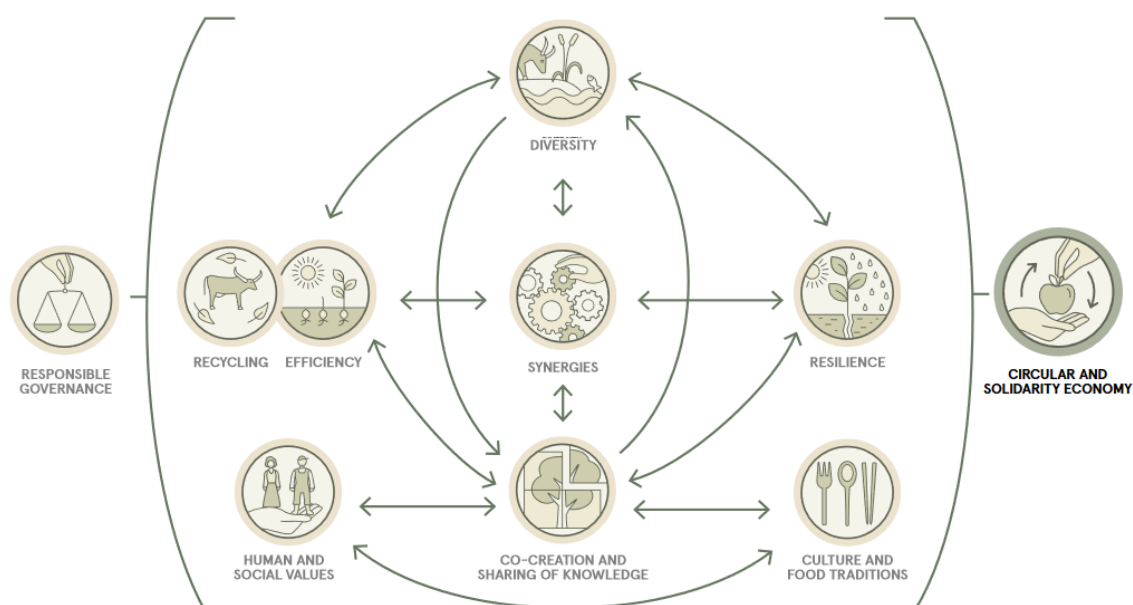
Agroecology is an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.²

The agroecology is derived from two sciences - ecology and agronomy and through the history it has become an approach deeply rooted in family farmers' practices, in grassroots social movements for sustainability and the public policies of various countries around the world.

Today, agroecology continues to straddle established boundaries. On the one hand, agroecology is the study of ecological processes in agroecosystems. On the other, it is a change agent for the complex social and ecological shifts that may need to occur in the future to move agriculture to a truly sustainable basis. Together, these complementary thrusts forge the way toward achieving sustainable food systems.³

Agroecology is based on bottom-up and territorial processes, helping to deliver integral solutions to local problems. The co-creation of knowledge, joining science with the traditional, practical and local knowledge of producers represent the basis of the agroecological innovations. Reinforcing the adaptive capacity, agroecology derives producers, farmers and communities to start the agroecological transition.

The Food and Agriculture Organization of the United Nations (FAO) sees agroecology as having ten primary 'elements', from diversity and resilience to human and social values, and focuses on interdependencies between them.

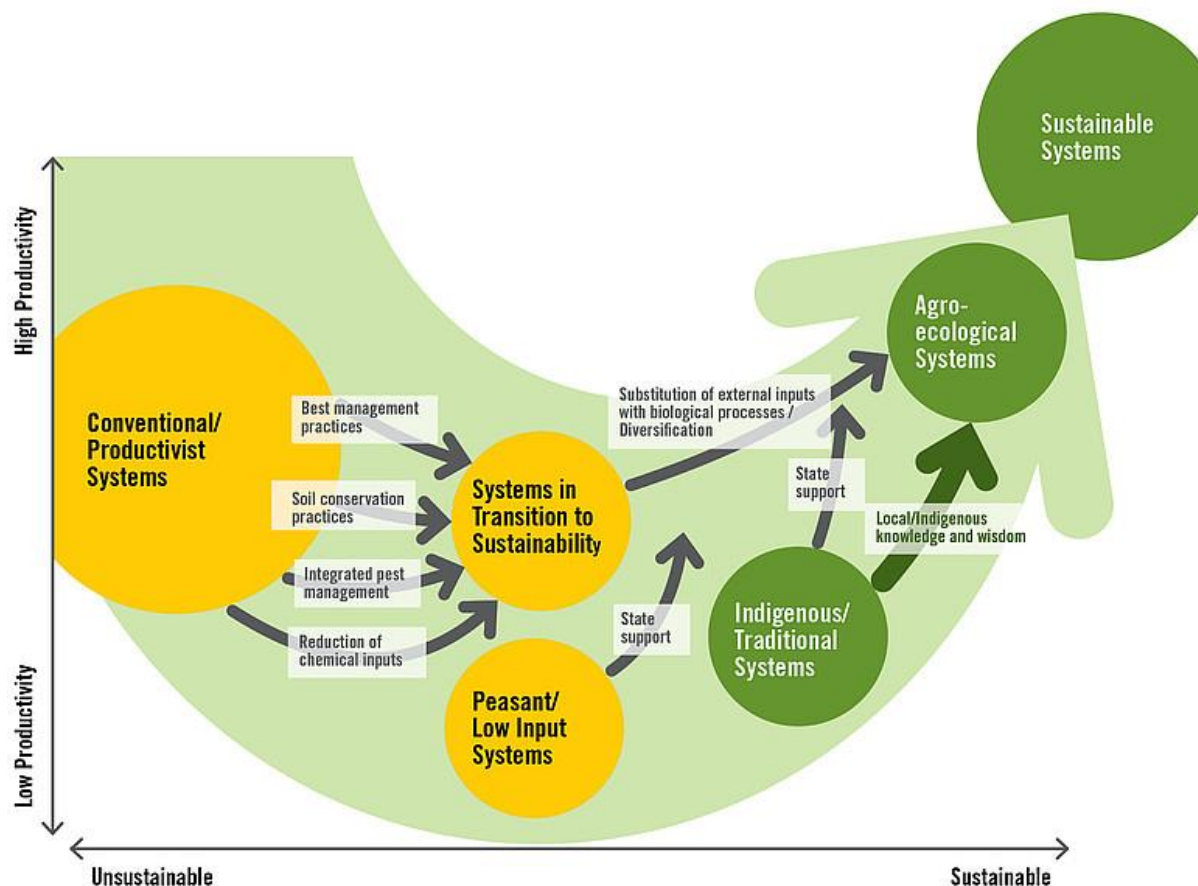


Picture 1. The 10 Elements of Agroecology (source: <https://www.fao.org/3/i9037en/i9037en.pdf>)

² FAO, The 10 Elements of Agroecology

³ Gliessman. S.R., Agroecology: The Ecology of Sustainable Food Systems

These 10 Elements represents a guide for policymakers, practitioners and stakeholders in developing, managing and assessing agroecological transitions in each agricultural system.



Picture 2: Agroecological evolution in agriculture, food production and consumption⁴

For instance, climate-smart agriculture, sustainable intensification, some forms of organic agriculture and integrated pest management are all currently in use to frame agricultural transitions, yet generally emphasize technical aspects rather than the political, social and cultural dimensions needed for the transformations needed to address the multitude of crises in food systems today⁵. The heart of the agroecology lies at the producers' traditional methods and knowledge, collective action and linkages with consumers and a re-territorialization of food systems.

⁴ European Committee of the Regions. Opinion of the European Committee of the Regions - Agro-ecology

⁵ Pimbert, M. P. (2015). Agroecology as an Alternative Vision to Conventional Development and Climate-Smart Agriculture

2. BACKGROUND ON PARTICIPATORY GOVERNANCE

Put simply, governance encompasses the varied ways different societies make decisions and resolve conflicts about collective problems. The Food and Agriculture Organization of the United Nations (FAO) defines governance as “the processes through which public and private actors articulate their interests; frame and prioritize issues; and make, implement, monitor and enforce decisions.”⁶ It represents a set of political, social, economic and administrative systems, rules and processes that determine the way decisions are taken and implemented by actors and through which decision-makers are held responsible.

In the context of agroecology, responsible governance is one of FAO’s key principles for guiding policy-makers and landscape agents in planning, managing and evaluating agroecological transitions.



Responsible governance: sustainable food and agriculture requires responsible and effective governance mechanisms at different scales – from local to national to global.

Agroecology calls for responsible and effective governance to support the transition to sustainable food and agricultural systems. Transparent, accountable and inclusive governance mechanisms are necessary to create an enabling environment that supports producers to transform their systems following agroecological concepts and practices. Successful examples include school feeding and public procurement programmes, market regulations allowing for branding of differentiated agroecological produce, and subsidies and incentives for ecosystem services.

Land and natural resources governance is a prime example. The majority of the world’s rural poor and vulnerable populations heavily rely on terrestrial and aquatic biodiversity and ecosystem services for their livelihoods, yet lack secure access to these resources. Agroecology depends on equitable access to land and natural resources – a key to social justice, but also in providing incentives for the long-term investments that are necessary to protect soil, biodiversity and ecosystem services.

Agroecology is best supported by responsible governance mechanisms at different scales. Many countries have already developed national level legislation, policies and programmes that reward agricultural management that enhances biodiversity and the provision of ecosystem services. Territorial, landscape and community level governance, such as traditional and customary governance models, is also extremely important to foster cooperation between stakeholders, maximising synergies while reducing or managing trade-offs.⁷



A useful related term is landscape governance, which can be defined as the rules and processes for making decision that affect the landscape and it is “concerned with the institutional arrangements, decision-making processes, policy instruments and underlying values in the system by which multiple actors pursue their interests in sustainable food production, biodiversity and ecosystem service conservation and livelihood security in multifunctional landscapes. As such, landscape governance refers to the combination of decision-making processes of both state and non-state actors, which together shape the day-to-day practical actions of management. It stresses principles such as dialogue, negotiation, and the need to balance agricultural, conservation, livelihood, and climate objectives.

⁶ FAO, <http://www.fao.org/policy-support/governance/en/>

⁷ FAO, The 10 Elements of Agroecology

Civil society organizations (CSOs) can help make landscape governance more inclusive and sustainable, among others, by building capacity of local stakeholders to stand up for their rights and participate in decision-making processes, lobbying for policies to promote inclusion and sustainability, facilitating multi-stakeholder processes, and acting as watchdogs.”⁸

An inclusive and integrated governance approach encompasses all stakeholder groups present in the landscape by including them in the decision-making processes for planning changes in that landscape. The purpose of participative governance is to actively engage all stakeholders in all discussions and jointly co-create decisions that affect them, seeking to include a diversity of voices and mobilize them towards a common goal, giving equal opportunity for participation to those with less power so that they can meaningfully engage in the process in its entirety.

For this purpose, multi-stakeholder engagement processes are used to ensure participatory equity, transparency and accountability and to develop partnerships and trust between multiple stakeholders, including holders of traditional and local knowledge. They provide a venue for reaching mutually acceptable and win-win solutions. Designing an inclusive and participatory process increases the sense of ownership over its outcomes leading to greater sustainability of the consensus-reached results. By providing mechanisms for consultations and generation of feedback-loops, multi-stakeholder processes and partnerships contribute to greater monitoring, evaluation and accountability for policy- and other decision-making in the landscape, in turn leading to better governance of the territory.⁹

Within the project ECOVINEGOALS, a participatory governance process was foreseen for launching a transformational path of intensive viticultural landscapes toward agroecological modes of production simultaneously promoting harmonious and balanced relationships between vineyards and accompanying multi-functional landscapes and natural habitats. The **agroecological transition** entails a long-term process of adopting tailored solutions to context specific challenges of different viticultural landscapes via multi-stakeholder combined actions toward mutually set goals and a common challenge of the respect of environment, economic and social equilibriums of a given territory and a given culture.

Following a common methodology based on **backcasting**, project partners had pilot the participatory governance process for initiating the agroecological transition of their chosen viticultural landscape, resulting in the preparation of seven local action plans (in Chapter 6.2 is briefly explained). The evaluated governance models, tools, guidelines and lessons learned from the pilots had enabled the collection of key inputs crucial for the agroecological transition of viticultural landscapes across the ADRION Programme area at scale, spearheaded by the AVINE project network.

⁸ Kusters et al., Inclusive Landscape Governance for Sustainable Development: Assessment Methodology and Lessons for Civil Society Organizations. Land 2020, 9, 128., 2020

⁹ UNDP, Multi-Stakeholder Engagement Processes. A Capacity Development Resource, 2006

3. SCALING UP THE PROCESS OF AGROECOLOGICAL TRANSITION IN VITICULTURE

Multifunctional benefits are offered by agroecology, from improving yield and profitability to enhancing biodiversity, addressing climate mitigation and enhancing the landscape and ecosystem. When the usage of the agroecological practices is suitably supported and in right economic conditions, it can outperform conventional systems of agricultural production in many ways.

Agroecological practices constitute a prime example of nature-based solutions for addressing the climate crisis, through both mitigation and adaptation. Practices such as the use of organic and green manures, intercropping and tree-planting on farms or in hedges boost organic matter in the soil and, in turn, carbon-sequestration capacity.¹⁰ Agroecological strategies, such as crop diversification, the maintenance of local genetic diversity, organic management of soils, water conservation and agroforestry, for example, can also help producers adapt to climate change.

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

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 led to more intensive weather events due to climate change, such as heatwaves, frost events, unpredictable storms and more devastating hailstorms, also with bad influence on viticulture.

The needed transition in viticulture and agriculture in general, is to move from these homogeneous monoculture systems that are highly dependent on pesticides, fertilizers, fuel, and other external inputs, to systems that are low input and depend on biodiversity for biological control. A transition from a system-degrading high input agriculture to sustainable low input agricultural systems.

¹⁰ Lin, B, B., Chappell, J., Vandermeer, J., et al. 2011. Effects of industrial agriculture on climate change and the mitigation potential of small-scale agro-ecological farms

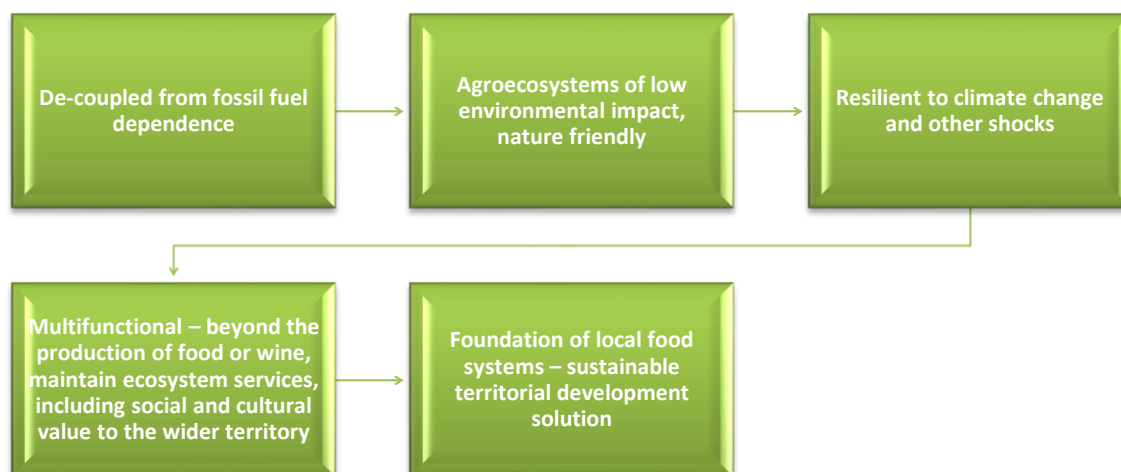


Figure 1: Features of an agriculture for the future

In recognition of agroecology’s multifunctional benefits and potential as a paradigm for the future of food, researchers, policy-makers and civil society organizations are converging around the theory and practice of scaling this system. They are looking at how food producers might be encouraged to adopt agroecology and, beyond that, at how agroecology can provide the framework for organizing and transforming entire food systems.

One of the most commonly used frameworks for formulating transitions in agroecology is Stephen Gliessman’s five-level approach.¹¹

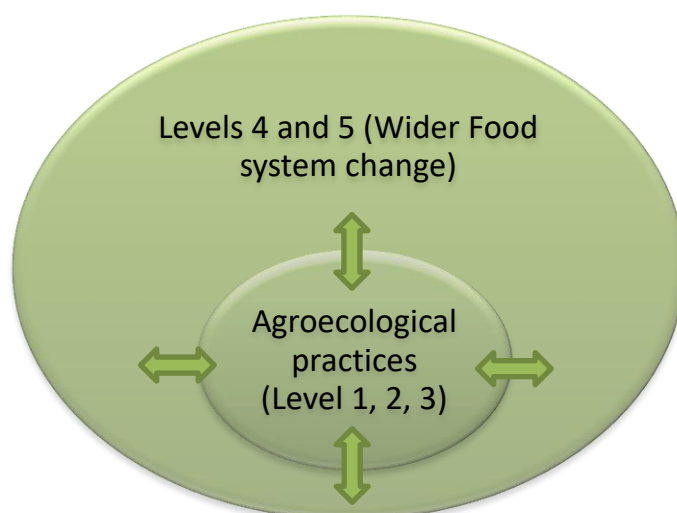


Figure 2: Steve Gliessman’s 5-level system¹²

¹¹ Gliessman. S.R., Agroecology: The Ecology of Sustainable Food Systems

¹² Anderson C.R, Bruil J., Chappell M.J., Kiss C., Pimbert M.P., Agroecology Now! Transformations Towards More Just and Sustainable Food Systems, p. 32

This five-level system conceptualises agroecology transition explaining that agroecology was historically focused on transition at the level of the farm and through changes in farm practices. In recent years, the reconceptualization of agroecology at broader scales and political agroecology as the basis for food-system change has centred analysis on levels 4 and 5¹³.

Level 1 implies the usage of organic instead of conventional inputs (such as fertilizer, fuel or pesticides) in order to achieve more efficient production. At level 2, without fundamentally re-organizing the farming system, the external synthetic inputs are replaced with more sustainable ones (such as biofertilizers or organic pest management products). The researches shows that many successful agroecological transitions on farms start with simple practices focusing on input substitution or incremental integration that have better benefits, so without local or governance support, first two levels are unlikely to be transformative. At level 3, the agroecological practices (such as intercropping, compost, mixed farming) are representing the level of change because they are all integrated in order to develop an intentional agroecological system. These changes are foreseen to be taken on farm level but are deeply connected with economic, cultural and social dynamics that help producers' capacity to act.

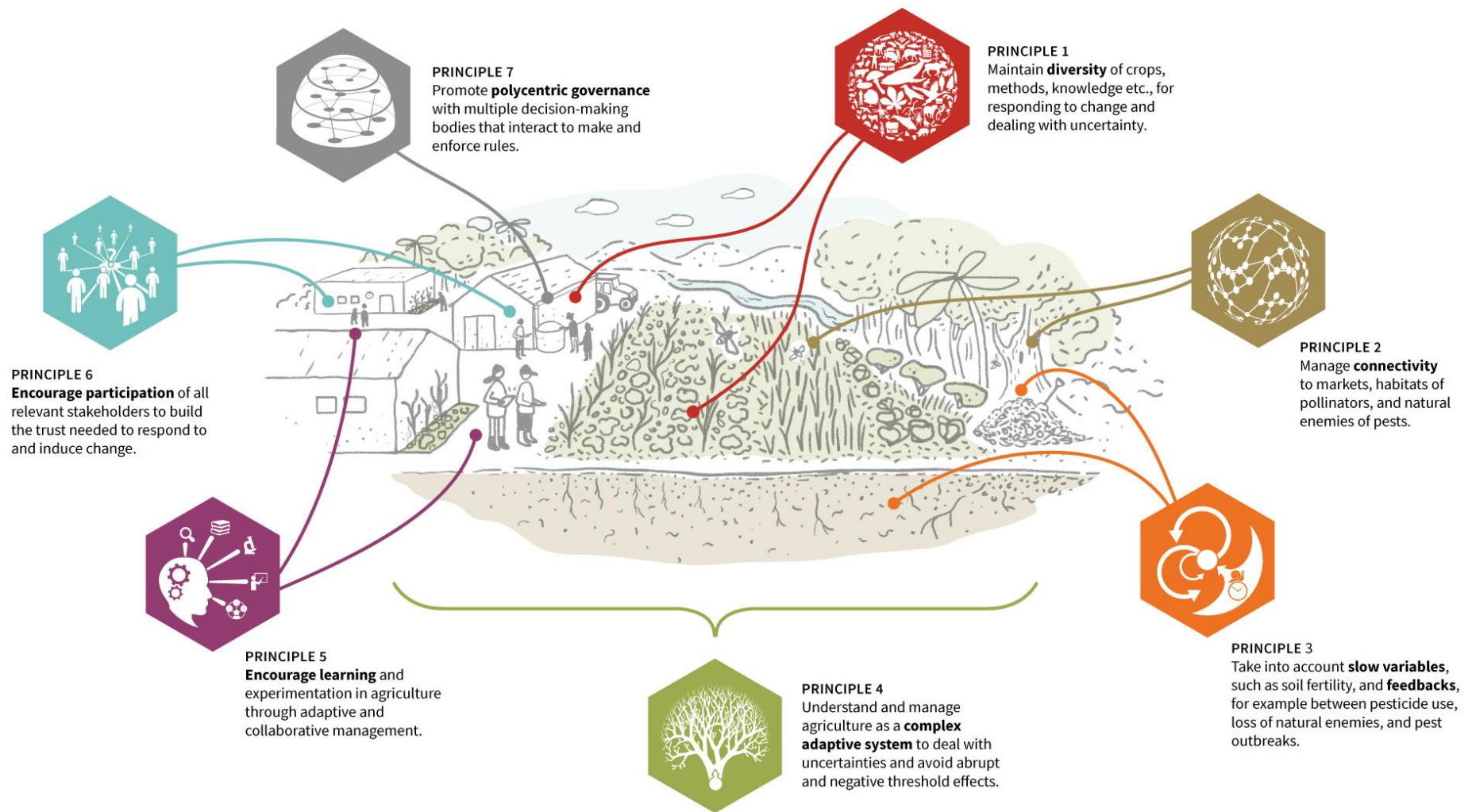
Levels 4 and 5 are deeply shaped by the wider social, political and economic dynamics that cause the potential for the agroecological transition. The complex integrations between components of the farm involved in agroecological redesign are often possible with the support of the structures beyond farm. The territorial food market, reciprocal labour arrangements with neighbours and wider diverse landscape that foster different pollinators represent the fourth level. The support through policies, rules, institutions and even culture are represented on the fifth level, focuses on social justice, democracy and other wide-ranging shifts.

Agroecology embraces the knowledge of traditional sciences and combines it with the knowledge of farmers. It creates a dialogue of wisdoms, a combination of modern and traditional knowledge, and from this the principles are derived. These principles, which are universal, have different technical and technological forms, different practices and design in the management of agricultural systems. Participatory research in farmers' fields is increasingly seen as a useful agroecological approach for translating principles to specific technological and management forms of knowledge of practical use.

What are the key agroecological principles?

- Enhance the recycling of biomass, to optimize organic matter decomposition and nutrient cycling over time.
- Provide favourable soil conditions for plant growth, managing organic matter and by enhancing soil biological activity.
- Minimize losses of energy, water, nutrients and genetic resources by enhancing conservation and regeneration of soil and water resources and agrobiodiversity.
- Break the monocultures by diversifying the system – diversify species and genetic resources in the agroecosystem over time and space at the field and landscape level.
- Enhance beneficial biological interactions and synergies among the components of agrobiodiversity, thereby promoting key ecological processes and services.

¹³ Ibid, p. 32



Picture 3: Agroecological approaches in line with the resilience - Illustration: E. Wikander/Azote

When we apply agroecological principles through practices (locally adapted), we affect processes that are fundamental for the functioning of the ecosystem (such as organic matter accumulation, nutrient cycling, biotic pest regulation, water conservation) that lead to improved plant health, enhanced soil fertility, higher total productivity and enhanced agroecosystem resilience.



Picture 4: Agroecological principles for the conversion of farming systems

In the case of viticulture, the challenge is to manage agroecosystems that are more diversified and resilient, starting with the traditional systems. Especially in grape production there are traditions that span thousands of years in the past. E.g., in Italy it was common to combine vines with olive groves and interrow grassland for sheep. Agroecology is an approach deeply rooted in the ecological rationale of traditional agriculture. It is based on a set of knowledge systems and practices developed by farmers over centuries of experimentation. The agroecological approach features the properties of diversity, synergism, recycling, efficiency and integration inherent to traditional farming systems.

Starting from traditional agroecosystems it can be learned from their different features such as how they manage diversity and what are the factors that make them resilient. Then it can be utilised also the elements of modern science and apply it to the two-pillar framework of agroecological conversion:

1. “Below ground” habitat management – enhance organic matter, improve the structure of the soil and increase the biological activity of soils (e.g., 1% increase of organic matter can result in the rise of the capacity of the soils to retain water by as much as 12 l/square meter).
2. “Above ground” habitat management – modification of habitat by breaking the monoculture and increasing the diversification of the system to, e.g., enhance the beneficial fauna that will assist in the control of pests in vineyards.

These two pillars of agroecological conversion are key for crop health and consequently the health of the whole agroecosystem.

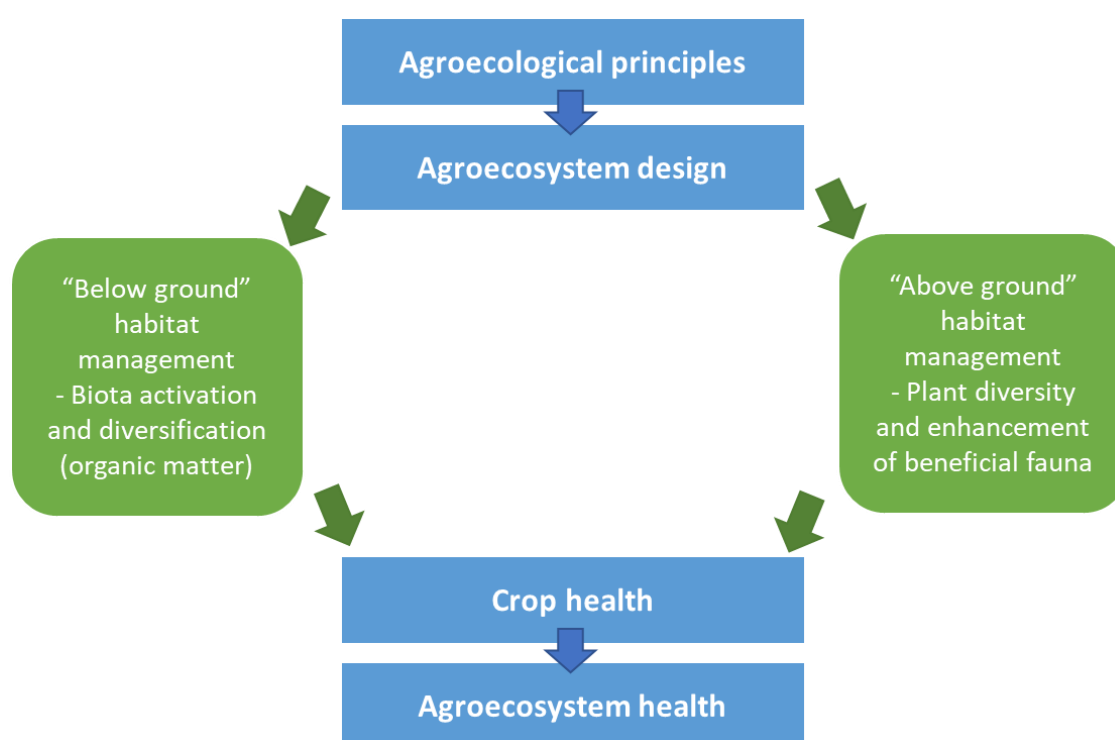


Figure 3: The pillars of agroecosystem health (prepared by author)

Practices used to conserve or enhance biodiversity in vineyards:

- Planting cover crops, including flowering plants.
- Planting vegetation / habitat islands around/in vineyards.
- Corridors that connect crops with wild habitats.
- Conserving plants and trees in surrounding environments.
- Building structures to attract beneficial birds (raptors).

- Using compost (or other organic soil amendments) to enhance microorganisms in the soil.
- Introducing grazing animals in vineyards (e.g., sheep).
- Increasing crop diversity with diverse grape varieties.
- Integrating other cash crops.

Heterogeneity in landscapes is an important approach to increase diversity and resilience of vineyards. Hedgerows and corridors can be used for attracting beneficial insects from surrounding environments and habitat islands. In fact, they are a common landscape feature in healthy agroecosystems with high biodiversity levels, ecosystem services and resilience to climate change.

Within vineyards biodiversity is facilitated by planting:

- Mixed leguminous species – fix nitrogen and increase fertility (bell beans, clover, ...)
- Mixed grass species – increase organic matter and conserve soil (rye, oats, ...)
- Mix of grasses and leguminous cover crops (dual purpose)

Flowering species attract beneficial insects (alyssum, poppies, red clover, ...). ***A key strategy in sustainable viticulture is to enhance biodiversity at the landscape and field level through the use of cover crops, corridors and various habitats.***

The main approach in ecologically-based pest management is to increase agroecosystem diversity and complexity as a foundation for establishing beneficial interactions that keep pest populations in check. Diverse and complex vineyards may be harder to manage, but when properly implemented, habitat management leads to the establishment of the desired type of plant biodiversity and unique ecological infrastructure necessary for attaining optimal natural enemy diversity and abundance.

The progression towards sustainability requires changes and improvements in the management of vineyards. With each step of improvement, the inputs are gradually reduced, while the water use efficiency (rainfall + irrigation), resilience, and sustainability in the vineyard increase. Many of these agroecological practices can be combined in Mediterranean vineyards under more holistic approaches such as organic and biodynamic farming, but more research is necessary.

The main objectives of these agroecological approaches are:

- to maintain/improve the fertility of the soil,
- to produce healthy plants that can resist diseases and pests,
- to increase agrobiodiversity, and
- to produce food of the highest possible quality.

Agroecological practices that reduce the dependence of cropping systems on synthetic inputs are numerous and diverse and the transition towards agroecological systems can be progressive or fast

Key agroecological principles are:

- Enhance the recycling of biomass and break the monocultures by diversifying the system.
- Provide favourable soil conditions by managing organic matter and soil biological activity.
- Enhance beneficial biological interactions among the components of agrobiodiversity.

Agroecological practices in vineyards and viticultural landscapes (ECOVINEGOALS open list):

- Agroforestry in vineyard
- Bio-district
- Biodiversity friend certification
- Bio stimulants in viticulture
- Vineyard Canopy Management
- Cover crops - Flowering c. c.
- Maintenance of traditional elements of Winescape - Dry stone walls
- Green Manure in vineyard
- Hand picking the grapes
- High Nature Value Farming (HNV)
- Mechanical Inter-row weed control in vineyard
- Sustainable irrigation in vineyard
- A board game to identify the perception of the value of the viticulture based on Landscapital
- Mating disruption
- Mulching
- Participatory Guarantee Systems
- Land Use Maintenance
- Bird nests and shelter for bees and pollinating insects
- “Pyro-weeding” in vineyards
- Decision support systems (DSS) to reduce pesticides in viticulture
- Resistant grape varieties
- Social learning and knowledge generation in agriculture
- Soil Fertility Monitoring
- Wine routes as promotional tools for viticulture
- Wood Poles in vineyards
- Strategy for communication Agroecological Products
- Erosion prevention
- Composting or mulching of grape vine winter pruning residues
- The use of wood chips (BRF - bois ramea fragmentè).

4. PARTICIPATION AND RELATIONAL GOVERNANCE

In any given place (a community, a city, a country, etc.), governance sets rules, rights of access, and the design of economic tools and accountability mechanisms for all actors involved. Governance determines how agroecology is supported as it spreads and how it is strengthened across sectors, regions and countries.¹⁴

Governance is about how power is used to take decisions on different levels but in communities or not and who benefits and who does not from the process of change. The forms of governance that prevail in each of the domains of transformation vary depending on the culture, history and balance of social forces in a particular context.

Once the general motivation for adopting the policy of transition to agroecological viticultural landscape governance is clear and well argued, it is time to consider the actors involved.

The following questions might be of assistance:

- Which actors can influence policy adoption?
- Which actors are affected by a given problem and by attempts to solve that problem?
- To what extent are these actors able to participate in policymaking interactions themselves or to hold the actors in policymaking interactions accountable?

Assessing the political supportability of a policy starts with an understanding of the landscape of different stakeholders, the authority they have, and the power dynamics between these actors; which can be defined as the **“authorizing environment”**. It is necessary to gauge the extent to which the policy aligns (or does not align) with the interests and incentives of these relevant actors in the context of both the formal processes of decision-making, and the patterns of relationship, alliances, conflicts, coalitions, and so forth that constitute the given landscape.

It is important to find the purpose of defining the important stakeholders involved in the policy of agroecological transition of viticultural landscapes, and their positions. The next step is to map the incentives for each stakeholder. This information should help answer the questions: What does this stakeholder care about? Why might this policy be important to them? To understand the incentives of policy actors fully, consider the political system and the political processes in which the policy is embedded. The field of comparative politics and institutional theory has created classifications which provides structure to think about how form of government shapes who holds the power and how those people confer it to policymakers (check local context).

The next step is to map all relationships between stakeholders. These relationships could be accountability mechanisms or channels through which a policy change would affect the actor. These relationship maps are a tool to clarify which stakeholders are the most crucial for ensuring success of the policy, and how they interrelate.

After all the information are collected, now it's important to assess whether there is enough support for the policy of agroecological transition of viticultural landscapes to be adopted, and what coalitions to pursue to make that happen. This is rarely a simple yes or no answer, but often involves making judgement calls about the viability of bringing different stakeholders on board, and creating a strategy for doing so.

¹⁴ Anderson C.R, Bruil J., Chappell M.J., Kiss C., Pimbert M.P., Agroecology Now! Transformations Towards More Just and Sustainable Food Systems, p. 155

5. METHOD - BACKCASTING

5.1 Overview of backcasting

Within the project ECOVINEGOALS, the realisation of participatory backcasting paths in wine-growing areas chosen as case studies are foreseen to increase capacity for shared agroecological governance of territory by public and private decision-makers.

In contrast to predictively oriented forecasting techniques, backcasting is goal-oriented, meaning that it focuses not on passively predicting a likely future scenario or scenarios, but on how one can actively design and create a desirable future. To implement this in the framework of participative governance is to empower communities to actively co-design and co-create a shared future, i.e., to connect vision with concrete near-term priorities for action and responsibilities.

Backward planning or backcasting starts with where you want to get to (vision) and then asks what needs to be done in order to reach that future goal – which actions and policies need to be deployed. Backcasting is a key participative process for (1) identifying the key processes, structures and cultures that need to change, and (2) informing the development of an action plan that has buy-in and ownership of participants for its realisation.

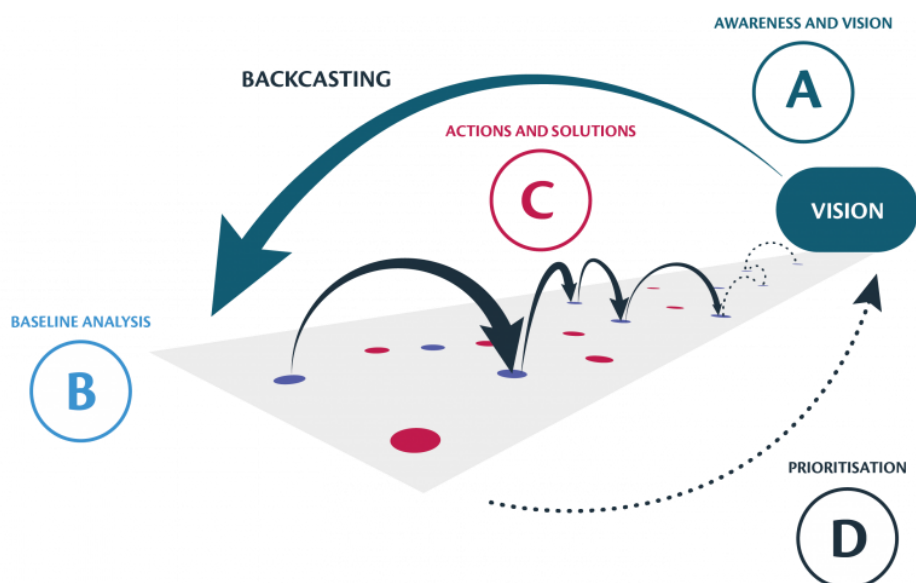


Image 5: Backcasting illustrated¹⁵

5.2 ECOVINEGOALS backcasting methodology

The following backcasting method was developed by Agenda21 and piloted by PAT within T1.2. The methodological approach is inspired by the European Awareness Scenario Workshop (EASW).

The European Awareness Scenario Workshops (EASW), an initiative of the EU's INNOVATION programme that was launched in 1994, has the aim of exploring possible new actions and social experiments for promoting an innovation favouring environment in Europe.

¹⁵ Source: <https://dpmc.govt.nz/our-programmes/policy-project/policy-methods-toolbox/futures-thinking/backcasting>

The EASW initiative focused on two fields of action:

- Assessing the transferability of best practices between different cultural and political contexts, including identification of conditions for success;
- Identification and further development of instruments and tools to support the know-how transfer processes.”¹⁶

The backcasting methodology was chosen for the ECOVINEGOALS project in order to gather the right and important stakeholders, decision and policy-makers who will have the capacity to support the agroecological transition in the pilot area. The participatory paths allow solution of conflicts of use of territory through identification of shared solutions among interested parties.

The ECOVINEGOALS participatory backcasting workshops followed a general structure of activities, as represented here after:

- participatory activity n°1: Community Mapping/Photovoice;
- participatory activity n°2: Future Search;
- participatory activity n°3: Ideas Factory;
- participatory activity n°4: World Cafe;
- participatory activity n°5: Invest in your agroecological transition.

The chosen facilitator in partner’s pilot areas facilitated each session/activity, provided with a “Manual of Participatory Governance for Agroecological Transition” with templates, prepared by Agenda21 and delivered at the training for facilitators which will precede the participatory backcasting workshops. Each facilitator, in collaboration with the relative ECOVINEGOALS partner, designed the participatory planning process according to the expected results of their Local Action Plan and the peculiar contexts of their territories.

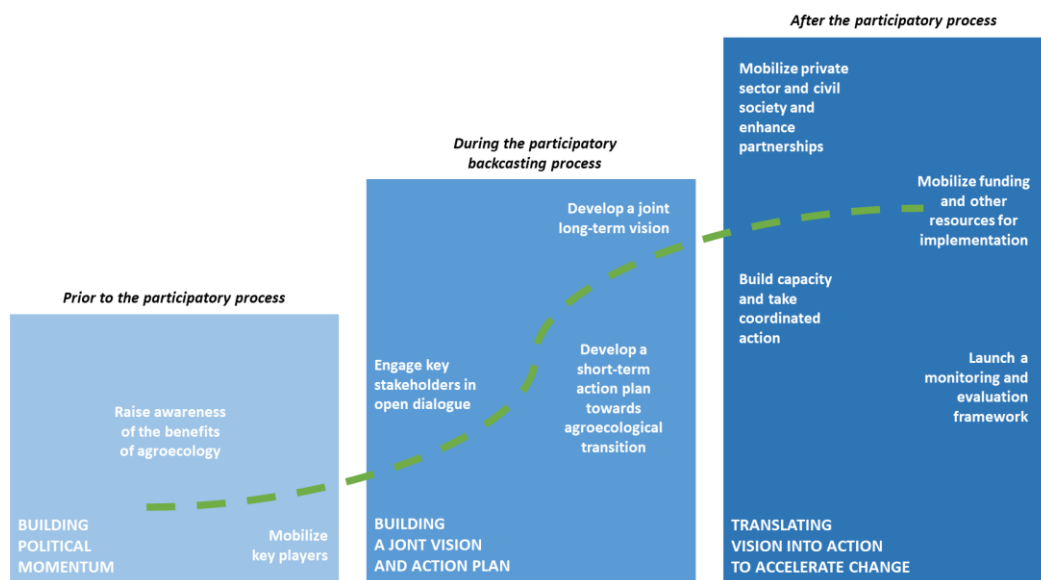


Figure 4: A backcasting process for a participatory agroecological transition (prepared by author)

¹⁶ EC, European Awareness Scenario Workshops, <https://cordis.europa.eu/article/id/8356-european-awareness-scenario-workshops>

6. PARTICIPATORY BACKASTING PROCESS

6.1 Contextual considerations

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 that influence all of the above.

In order 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 national and local level.

6.1.1 The global/international legal regimes

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

- The UNFCCC is an international environmental treaty founded with the aim 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.

2. 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.

3. 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.

4. 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 evidence¹⁷ 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 study¹⁸ 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.

6.1.2. 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 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.

















¹⁷ Leppert, 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

¹⁸ Ibid.

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) for the purpose of providing guidelines for sustainable use and distribution of pesticides. Its Article 6 lays down standards for state regulatory frameworks on pesticides, as critical components of sustainable agricultural systems.

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 <i>terroir</i> , enhanced with the modern scientific insights of our age.
5 GENDER EQUALITY 	Agroecology has potential to advance women's rights and through inclusion in participatory processes to 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 preserving jobs.
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.	
<i>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</i>		

6.1.3. 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 restore 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 innovation 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	Reverse the rise in overweight and obesity	***				**	*	***	***	**	**

food consumption, facilitating the shift towards healthy, sustainable diets	rates across the EU by 2030										
	Improve nutritional and sustainability labelling		*			*	*	***	***	***	**
	Improve the role for 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 protected areas	Strictly protect at least a third of the EU's protected areas, including all 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% use of more hazardous pesticides by 2030 (F2F)	*		*	***	***	***			*	*

	At least 25% of 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 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 restoring soil ecosystems	Step up efforts to protect soil fertility, reduce soil 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	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. This can be leveraged in the process of visioning and setting the goals of the participatory governance processes in project pilot localities. Furthermore, it can be seen, jointly with the international governance framework, as vital argument for the inclusion of agroecology and its practices in development plans and documents at national and local level.

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.

6.2. Transition as a guided process of change

In order to contribute to sustainable development, the agroecological transition cannot be limited to a set of individual transitions, even if they are numerous, for two reasons. The first is technical in nature, because landscapes, where agroecological transitions of agroecosystems take place, are continuous. Thus, a single farmer using pesticides can pollute an entire watershed, making agroecological certification impossible. The second reason is organizational and institutional. The territorial and collective footprint of agricultural activities, the externalities and services, the functioning of markets, the management of resources and ecosystems, and the innovation networks all presuppose a coordinated collective and institutional action.

The processes of agroecological transition are anchored in territories because they depend, on the one hand, on a coordination between local actors and, on the other, on social and institutional changes that support and encourage learning and the co-creation of knowledge and innovations among farmers and in agri-chains.

Key values of the participatory governance process:

- Responsible
- Effective
- Transparent
- Accountable
- Inclusive.

The aim of the participatory backcasting process is to increase capacity for shared agroecological governance of territory by public and private decision-makers. The participatory paths allow solution of conflicts of use of territory through identification of shared solutions among interested parties.

The decision to engage the public through a participatory process is inherently political. Whether or not the aim is to directly influence policy, participatory methods are interventions in society. Thus, the first order of business is to be very clear about the aims and objectives of such a project.

It is important to take an accurate reading of the current political situation as it regards the topic in question. Understandings gleaned from such an exercise illuminate considerations for timing and political relevance, increasing the potential for real political influence. The table below lists ten factors necessary for using participatory methods to successfully influence policy.”¹⁹

¹⁹ Slocum, N., Participatory Methods Toolkit. A practitioner's manual, UNU-CRIS, 2003

Success Factors of the Political Role of Participatory Methods

Societal context

- Part of the public debate.
- Coincides temporarily with de facto policy-making.
- Societal relevance of the topic.
- Political culture open for informal participation.

Institutional setting

- Link to the political sphere.
- Credibility and reputation of the organising institution.

Properties of the participatory process

- Precise definition of the objective (making the case for agroecological transition).
- Fair and competent process as perceived by political observers (legitimacy).
- Result of the process aiming at practical implementation.
- Involvement of key policy actors in the process.²⁰

6.3. Participatory backcasting workshops

The participatory backcasting paths are designed to elaborate main land use conflicts that emerge in pilot areas, and to understand the importance of agroecological practices to follow the objectives of conservation and enhancement of the landscape and habitat. This was the main aim of the participatory backcasting workshops held in each pilot area within the ECOVINEGOALS project.



Figure 5: The participatory backcasting workshops held in project pilot areas

The trained facilitators for each pilot area had gained the skills and knowledge how to lead and conduct the participatory backcasting workshops. Following a common methodology based on backcasting, facilitators with project partners had conducted the participatory backcasting workshops in their pilot area, where they had initiated the process of the agroecological transition of their chosen viticultural landscape. Also, their main task was to encourage different stakeholders and actors on local, regional and national level to participate in the process and give their opinion, ideas and proposals.

²⁰ Kluver, et.al. 2000. EUROPTA: European Participatory Technology Assessment - Participatory Methods in Technology Assessment and Technology Decision-Making, EUROPTA project, 2000

Table 3: Description of the participatory backcasting workshops

Sessions	Participatory Activities	Main aim
1	Community Mapping	Community Mapping (or Participatory Mapping) methodology combines cartography with participatory methods to represent territorial knowledge of local communities. Participatory maps are planned around a common goal. The higher the level of participation by all interested stakeholders of the community, the more relevant are the information that the map contains.
2	Future Search	The Future Search methodology is an interactive planning activity that focuses on breaking down borders between different, and maybe conflicting, interests enlightening alliances and creating understanding about common scenarios for the future. It represents the core of the backcasting process. Once a common issue is defined the participant are asked to imagine the future, starting from analysing the time-line that has brought to the present situation. It brings on the same table – focused on the same goal – different informations, expertises, abilities, knowledges and prerogatives.
3	Ideas Factory	The Ideas Factory is a participatory activity to draft different potential answers to react to a common issue/problem or to take advantage of opportunities. The higher the level of participation by all interested stakeholders of the community, the easier is to find alliances and partnerships to overcome obstacles and find incisive solutions. Different ideas coming from stakeholders with different backgrounds and abilities can help to build up more effective and integrated Action Plans, in which actions and projects can take advantage of other complementary one.
4	World Cafe (puzzle game)	World Cafe methodology is designed to create a collaborative environment to develop concrete actions and initiatives from multiple ideas coming from different stakeholders. World Cafe combines interactions between stakeholders and multiple focus group on different thematics and topics. Scientific, technical and community knowledges are committed on the same goal. The higher the “biodiversity” of the stakeholders (for walk of life, expertise, interest and culture), the easier is to define concrete actions.
5	Invest in your agroecological transition (optional)	Each participant will give her/his priority to the actions included in the plan. This activity, simple and less time consuming compared to the other presented, allows the policy maker and/or the partners to understand what are the most relevant action to be taken towards the desirable future emerged in the first stages of the participatory process. For the purpose of ECOVINEGOALS, “Invest in your agroecological transition” defined the implementation priority, or suggest a timeline of implementation, of the Local Action Plan.

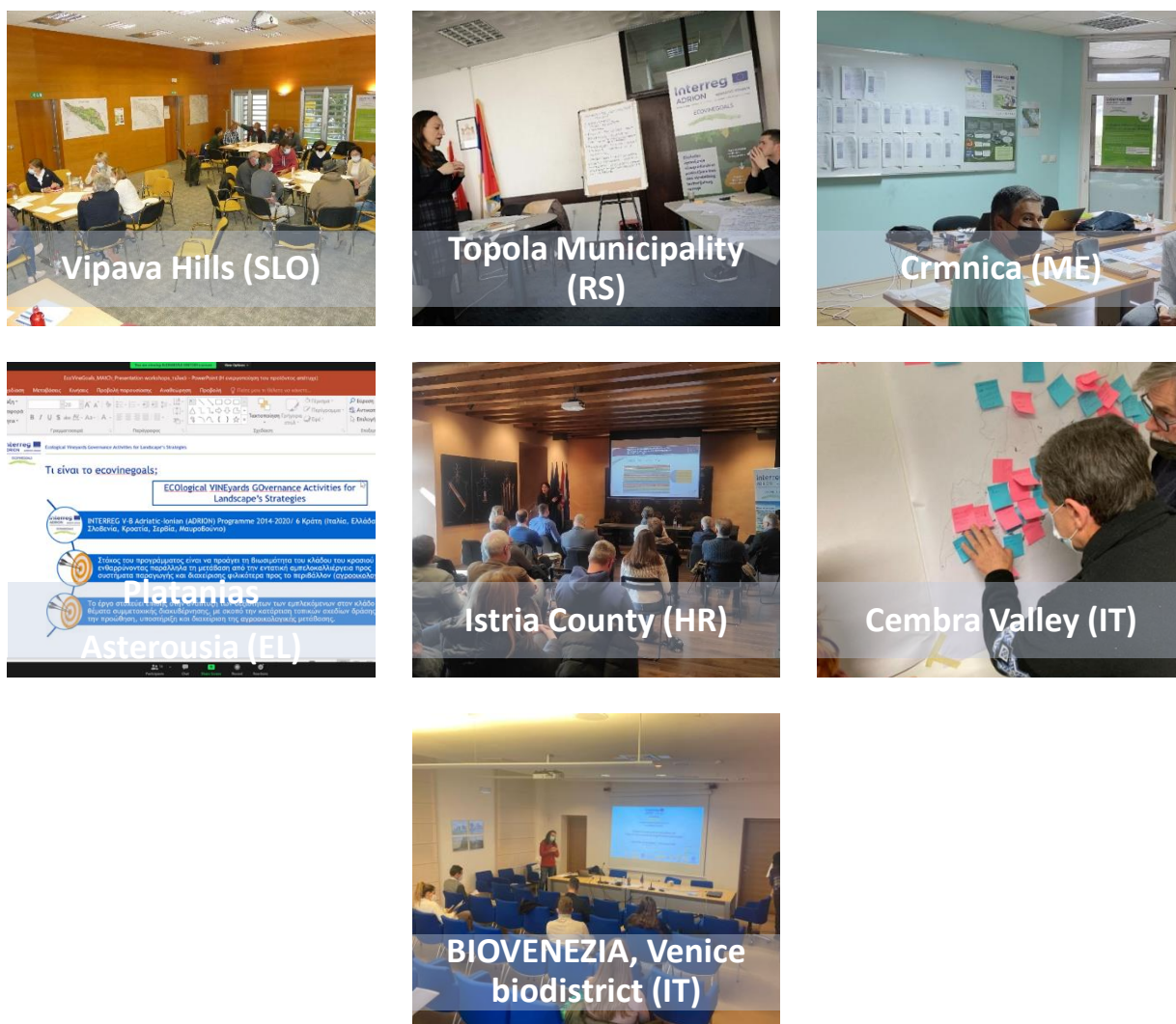


Figure 6: Participatory backcasting workshops held in pilot areas of ECOVINEGOALS project

Trained and educated facilitators through several online and offline local workshops had collected the data about the most valuable and vulnerable elements of the pilot area, defined the possible solutions through SWOT analysis and with the relevant stakeholders demarcated the actions needed for the agroecological transition.

The multi-stakeholder workshops resulted in a common future vision of an agroecological transition of viticultural landscapes and a short-term action plan with activities to realize this vision. After the participatory backcasting workshops have been realized, partners worked on the definition of guidelines and strategies for using territorial governance as tool to support shared transition to agroecological practices in wine-growing areas of ADRION regions.

The participatory backcasting process in each pilot area had shown which could be the paths in the transition to a more sustainable and resilient viticulture by using agroecological practices in ADRION area.

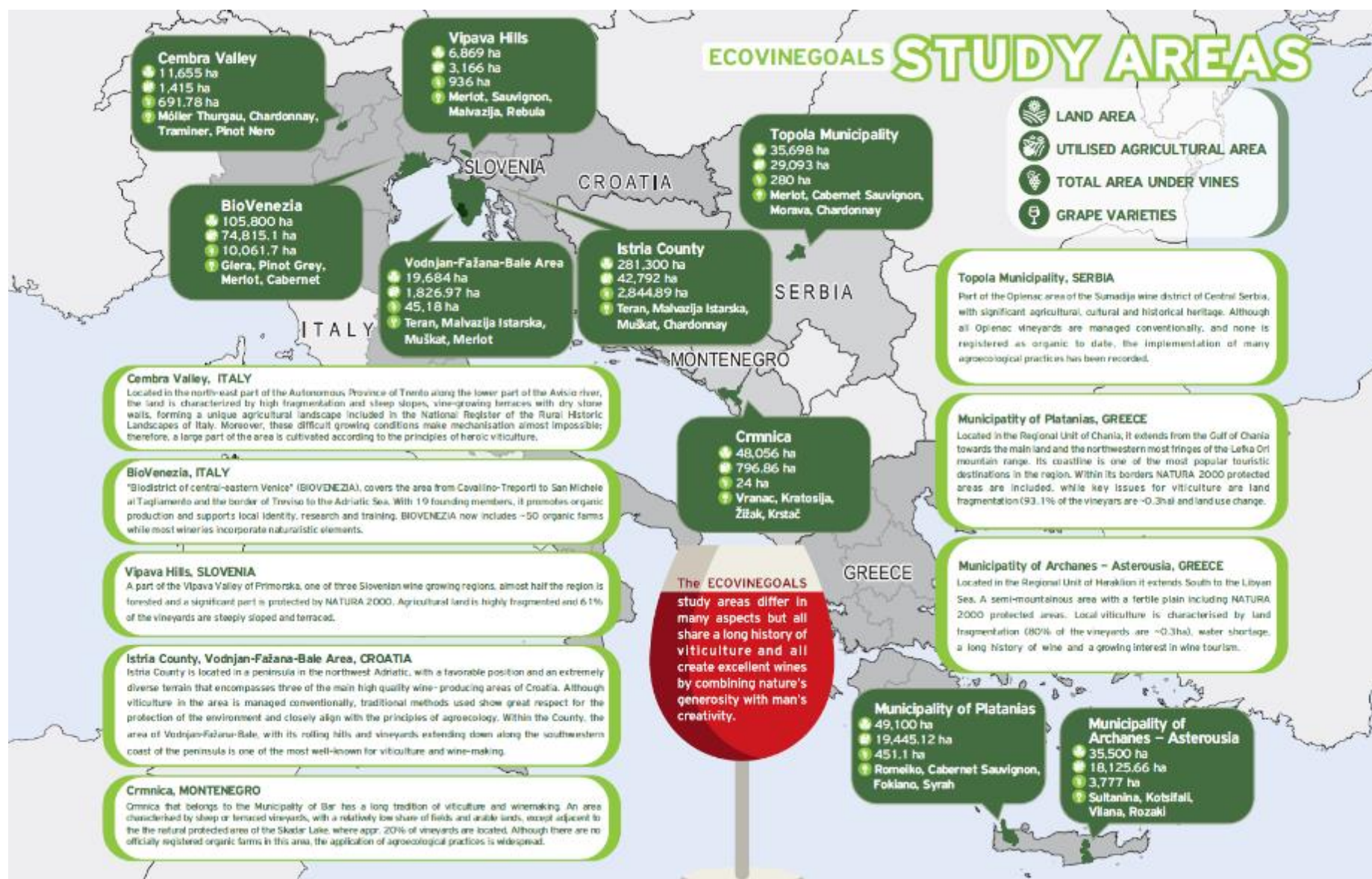
7. PARTICIPATORY GOVERNANCE APPROACH ADDAPTED TO THE CURRENT SITUATION IN VITICULTURE IN ADRION AREA

To limit the impact of agriculture on the environment and health, a profound change in practices is required in the 21st century, the agro-ecological transition. This transformation involves a specific difficulty in viticulture, that of having to mobilise an efficient agroecosystem around a perennial plant grown in monoculture, with the aim of limiting inputs while preserving natural resources, with the assurance of a fair distribution of value and the maintenance of the economic profitability of the farms.

For twenty years, agro-environmental practices have been developing in the vineyard. The approaches are beginning to be extended to the landscape, the territory and the different types of actors. Under regulatory and societal pressure, the transition is accelerating with the appearance of the notion of socio-agroecological landscapes. To accompany agro-ecological policies and their implementation, the question of a spatial, systemic and landscape approach nevertheless remains to be integrated at the level of the overall management of transformations.

Agroecology is a new way of linking agriculture, science, the environment and society. In this sense, agroecology goes far beyond a normative set of practices, farming systems, and even principles and rules of action. It shapes a social mechanism that brings together the agricultural world, research, public decision-makers and citizens, to define a path of change, transition and progress. Agroecological transition calls for the recomposition of agroecosystems. This approach is said to be 'breakthrough', since it is established by taking advantage of processes ignored by conventional agriculture, but on which the agricultural systems that preceded the green revolutions were based on the observation or intuition of ecological relationships.

In order to better understand the situation in ADRION area, more specifically in ECOVINEGOALS pilot areas, on the picture 2. is presented the viticulture and wine-growing sector in each of the study areas. The following picture brings together the main relevant results from previous ECOVINEGOALS outputs and other sources in order to better understand the current viticulture situation in the study areas.



Picture 6: ECOVINEGOALS pilot areas

In the table 3. is described the level of governance and the legislative and jurisdictional context of each pilot area.

Table 4: Description of the level of governance and the legislative and jurisdictional context of each pilot area

Pilot area	Description of the level of governance and the legislative and jurisdictional context of each pilot area
Cembra Valley (Italy)	<p>From a legislative point of view, the Autonomous province of Trento enjoys particular privileges compared to other Italian regions, in fact it represents a province with an autonomous statute able to legislate at local level in almost all institutional matters such as infrastructure, construction, hunting and fishing, agriculture and environment, education, work, transport, sport and culture.</p> <p>For these reasons, the Autonomous Province of Trento together with the new laws dictated by the European community and its own subsidies from the territory manages to help the agriculture and the environment of these disadvantaged areas by focusing on the quality of typical products, trying to survive the tough globalized market. It also tries to keep up with the times, in which the term quality also means sustainability and attention to the health of the environment and human and animal well-being. Furthermore, it should be noted that it actively participates in Agenda 2030 and various community projects to improve itself more and more.</p> <p>The significance of the participation of the Autonomous Province of Trento in the ECOVINEGOALS project is that of wanting to improve both from an agricultural and environmental point of view, to protect the community that lives there and its traditions. This will be achieved through the creation of particular local action plans and strategies aimed at increasing sustainability, with the help of a local participatory governance which is now very attentive to this issue and has already conscious of the importance of this concept.</p>
BIOVENEZIA Venice biodistrict (Italy)	<p>The primary sector in Veneto has an annual gross output equal to 11% of the national GDP, and generates an added value of 3 billion euro (2016-2018 average), which represents 2.1% of the regional GDP. The structure of regional agriculture preserves a size dichotomy with a predominance of small farms, which manage a minority share of the agricultural area, and a moderately small number of medium and large farms, which manage the majority share of the regional rural area.</p> <p>Italian Ministry of Agriculture introduced the agroecological approach for the first time in the National Strategic Plan to develop organic system, approved on 24 March 2016. The context in which the regional strategy "Veneto's agriculture towards 2030" (DGR nr. 1297 of 10 September 2019) is set is the Agenda 2030; in particular, for the agricultural sector and rural areas the reform of the CAP (Common Agricultural Policy) is of particular interest. Within this context, 10 Regional Priorities have been identified for the agricultural, agrifood and forestry sector and more generally for rural areas, focusing on a relatively limited number of strategic options to be pursued by 2030.</p>
Vipava Hills (Slovenia)	<p>In the case of the pilot area of the Vipava Hills, the municipalities involved – Ajdovščina, Vipava, Nova Gorica and Komen – are responsible for the sustainable and balanced development of the area or for the implementation of the adopted rural development strategy, in accordance with international regulations, the legislation of the Republic of Slovenia, and regional regulations. Their role is to monitor the implementation of programmes and projects aimed at implementing the outlined policy, and give initiatives, opinions and proposals for carrying out the tasks necessary to achieve the objectives set. Their departments for the economy, the environment and spatial planning, and social affairs manage the pursuit of common interests and coordinated action with the public administration, chambers of commerce, other municipalities, towns, regional and local units, and their associations. The municipalities take care of the possible involvement in international organisations and associations. The administrative authorities enforce the rules, make independent decisions in their area of activity, and are accountable to the mayors and the communities for the legality and timely performance of their tasks or for the state of affairs in their areas of competence.</p>

	<p>Their work enables them to realise the rights and needs of citizens and legal persons. The agroecological transition of viticulture in the Vipava Hills will be made easier if the results of the ECOVINEGOALS research project are taken into account. The results of the analyses should be incorporated into the guidelines, plans and strategies of the municipalities of the Vipava Valley, especially in the context of the viticulture sector. The results of the project can also be of help to the Slovenian Forestry Institute, the Tolmin Regional Unit or its Local Unit Ajdovščina, the Regional Development Agency ROD Ajdovščina, the TRG Vipava Tourism Institute, the Slovenian Nature Conservation and Cultural Heritage Conservation Institutes in Nova Gorica, as well as to agencies and associations in the Vipava Valley area.</p>
Istria County (Croatia)	<p>In the case of the pilot area of Istria County, according to the Statute, The Istria County can, in the process of preparing and adopting regulations at the level of the Republic of Croatia, give initiatives, opinions and proposals to competent authorities. But also, Istria County is independent in deciding on tasks within its self-governing scope. Istria County realises a common interest in improving social development, and establishes cooperation with other regional and local units and their associations. Istria County can join international organizations and associations of regional and local units. The Assembly decide on the establishment of long-term and permanent cooperation with other regional and local units and their associations.</p> <p>For the agro-ecological transition of viticulture in Istria County, the most important step is to use this project's research results as an example of good practice in order to include them in the guidelines, plans and strategy of Istria County, with the main accent on the Administrative Department of agriculture in Istria County.</p> <p>The Administrative Department for Agriculture, Forestry, Hunting, Fisheries and Water Management of Istria County needs to convey the thematic of agro-ecology and sustainable agroecological practices in vineyards, researched as a part of the ECOVINEGOALS project, on the level of including them into the Strategy of Rural Development of Istria County, plans and guidelines for the viticulture sector.</p>
Crnica (Montenegro)	<p>Crnica is located within municipality of Bar, and therefore the Secretariat for Commerce within Municipality of Bar is competent for the development of programs to enhance the agriculture and rural development in this area. On the national level, Directorate for Agriculture, within Ministry of Agriculture, Forestry and Water management prepares and develops programs of supporting measures and subsidies for the farmers.</p> <p>The Directorate for Agriculture, as well as municipal Secretariat for Commerce need to convey the thematic of agro-ecology and sustainable agro-ecological practices in vineyards, researched as a part of the ECOVINEGOALS project, on the level of including them into agricultural strategy Montenegro, strategy for the development of rural tourism in Montenegro, but as well in other plans and guidelines for the viticulture sector. It is also important to engage other administrative departments, and regional and local decision-makers in the process of raising the awareness and including the actions listed in this Local Action Plan, as fundamental principles for the sustainable and responsible development of viticulture and related activities in Crnica.</p>
Topola Municipality (Serbia)	<p>The National Assembly is the supreme representative body and holder of constitutional and legislative power in the Republic of Serbia. By means of majority votes of all deputies, the National Assembly elects the President who presides over the sessions and one or more Vice Presidents of the National Assembly. All decisions are made by majority vote of deputies at the session at which majority of deputies are present, except for amending the Constitution, when two thirds majority is needed. The Government is the holder of executive power in the Republic of Serbia. Ministers accounts for their work and situation within the competence of their ministries to the Prime Minister, Government and National Assembly.</p> <p>Guidelines for the Agroecological Transition of Viticulture Areas produced during the project ECOVINEGOALS will represent a referent document for the stakeholders in the area. The established network of regions from the project will continue to be a peer supporting group for the future interactions and experience exchange. The process of agroecology transition of the Topola region will be successful only if it is created and</p>

	<p>facilitated with high level of actors' involvement and in a participatory manner. Agroecology is foreseen in National rural development strategies and programmes, as well as implementation of participatory processes and citizen engagement. These two provide good basis for the processes to be implemented in the Topola region.</p>
Platanias Asterousia (Greece)	<p>Greece has two subnational levels of government, apart from the National/Central Government, the Regions and the Municipalities, as well as the decentralized administrative units. The island of Crete represents one of these Regions and decentralized units, while the two pilot areas (the Municipality of Platanias and the Municipality of Archanes-Asterousia) two of the Greek Municipalities. The main administrative authority of Greece in matters of agriculture and rural development is the Central Government. The Central Government is managing the European Agricultural Fund and the Rural Development Funds. It is also responsible for the framework laws on regional planning, environmental protection and regional development. The responsibilities of the Central Government include the promotion of exports of agricultural products, the improvement of agricultural production and business environment, the support innovation and training as well as development of measures of funding of agricultural production.</p> <p>At the subnational level, regional authorities – through their directorates or rural development – participate in the drafting and implementation of regional rural development policies (e.g., LEADER) but also of sectoral regional programmes. They are also responsible for keeping databases e.g. on vine crops, promoting and supporting producers organizations, the determination of protection zones, licensing for replanting vineyards in accordance with the respective legislation, controlling the production and marketing of wine, conducting inspection for quality control, implementation of disinfection methods, environmental evaluation, assessment and approval of environmental conditions concerning the location and development of industries such as wine production.</p> <p>The actions included in the Local Action Plan, proposed for the pilot areas in Crete, have derived through a participatory process with local stakeholders and represent building blocks that will form the pathway towards the agroecological transition of Cretan vineyards and wine-production. The sub-national authorities, through their advisory role may provide recommendations to the Central Government of Greece in order for specific actions regarding the agroecological transition of vineyards and the promotion of agroecological practices to be incorporated in the National Development Programme, since they are aligned with its main elements. Regional and local authorities should also establish cooperation with local development bodies and producer organizations for the promotion of quality Cretan wine products and preservation of Cretan landscape and tradition.</p>

8. ACTIONS ON TERRITORIAL GOVERNANCE FOR AGROECOLOGICAL TRANSITION IN ADRION AREA

The following table sums the proposed actions in the Local Action Plans on territorial governance for agroecological transition for each pilot area of the ECOVINEGOALS (deliverable T3.4.1.).

Table 5. Results from Local Action Plans on territorial governance for agroecological transition

Pilot area	Actions in short term	Actions in medium term	Actions in long term
Cembra Valley (Italy)	<ul style="list-style-type: none"> • Identification of disused quarries available for redevelopment activities • Identification of the available areas and an initial rough design of the installations and activities that can be hosted • Inventory of natural and cultural assets in the area and design of IT tools 	<ul style="list-style-type: none"> • Publication of the announcement and acceptance of project ideas and sharing of the planning and executive path with local communities • Expansion of wellness paths and activities; ordinary maintenance of those already prepared. • Creation of cards and IT tools 	<ul style="list-style-type: none"> • Conclusion of the realization of at least one initiative to recover an abandoned quarry and start of the • following ones based on the results of the pilot project. • Networking of all wellness paths and their continuous maintenance and promotion. • Realization of further redevelopments
BIOVENEZIA Venice biodistrict (Italy)	<ul style="list-style-type: none"> • Stajnbach 2030 - the use of renewable energy also to save economic resources, so as to invest in the workforce and future generations through training and attention to health • Piwi to support the agroecological transition - extend the cultivation of resistant vines that, in the near future, will have the possibility of being recognised within the specifications of wines with geographical indications • Sharing - identify and creation of a common territorial brand. • Touristic geo-localization - territorial mapping and identification of a wine-tourism route • Slow Food Travel – Giralivenza - becoming a quality wine and food destination thanks to alliance and experiences which highlight the gastronomic heritage • The wood as an added value to the vineyard - Promote 		<ul style="list-style-type: none"> • Wine Tourism... Not only wine - The flagship action builds on the results of the Giralivenza project with the design of a joint environmental enhancement plan, the census of attractions in the various municipalities along the route and the creation of cycling and walking routes/itineraries • Bio+Land = Ritrovando un clone... con le radici - Consolidate a territorial identity, relaunching the involvement of Municipalities in winemaking organizations, Opening of a local wine shop and organization of dedicated events • School of Agroecology of Eastern Venice: innovation and prevention - promote the consolidation of biological and agroecological experiences through a continuous assistance and training service for companies.

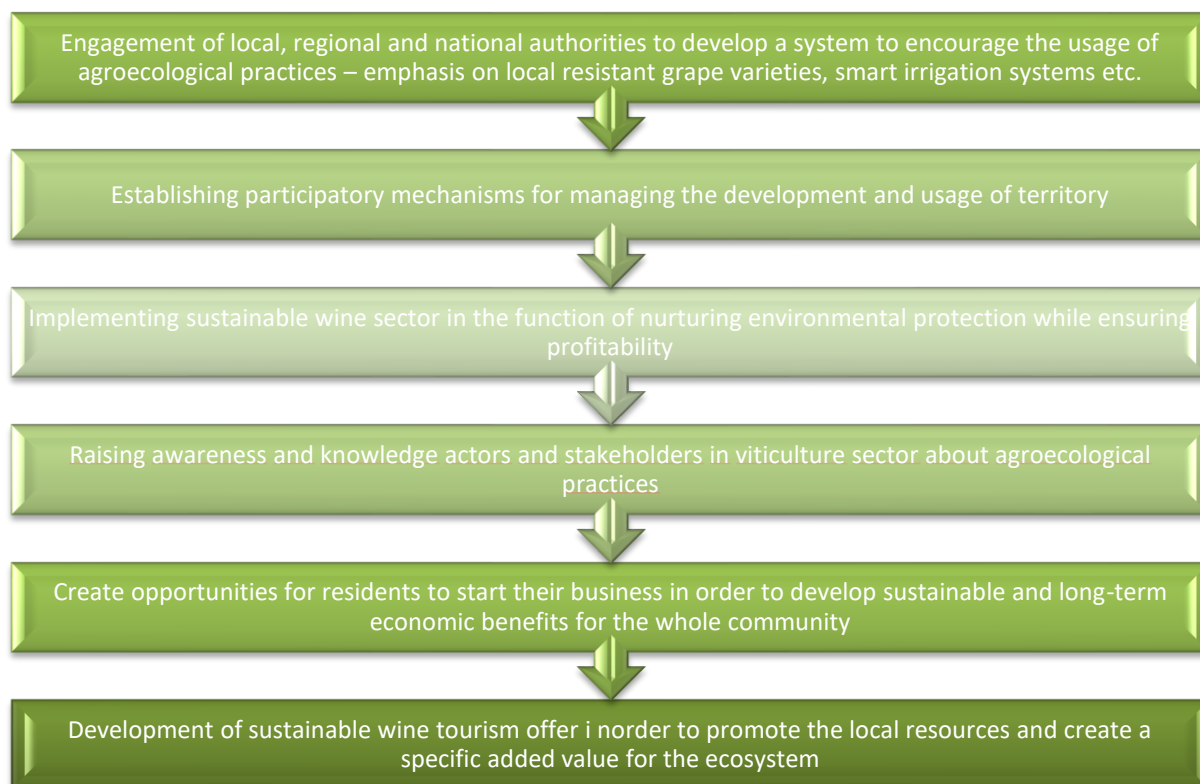
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	the interaction between agriculture and lowland forests to: diversify the landscape and make it more usable for slow tourism; support biodiversity by replacing pesticides with beneficial insects and animals...		
Vipava Hills (Slovenia)	<ul style="list-style-type: none"> • Activation of the Vipava Wine Museum • Raising awareness and educating stakeholders about sustainable management and agroecological practices • Design and establishment of the AVINE network • Creation of a map of the areas of former vineyards 	<ul style="list-style-type: none"> • Establishing an ecoregion and creating a brand • Restoration of the wine road • Strengthening the role of the wine cooperative • Amendment of OPN and granting of permits for the gradual restoration of vineyards in the areas of former vineyards 	<ul style="list-style-type: none"> • Strengthening the presence of indigenous grape varieties • Development and maintenance of the AVINE network
Istria County (Croatia)	<ul style="list-style-type: none"> • Creation of a new tourist offer based on local resources through eco-agritourism • The connection between winemakers and luxury holiday houses in order to attract a new segment of the tourist • Raising awareness and knowledge of wine makers and viticulturists about agroecological practices 	<ul style="list-style-type: none"> • Solving the problem of a workforce that will have knowledge of agroecological practices to ensure the transition in Istria County • Istria County strong branding based on local viticulture and agriculture • Scientific education based on the scientific and technical research regarding agroecological practices carried out by the researchers and professors 	<ul style="list-style-type: none"> • Sustainable increase of hectares under vineyards, emphasized on autochthonous variety • Solving the problem of a workforce that will have knowledge of agroecological practices to ensure the transition in Istria County
Crnica (Montenegro)	<ul style="list-style-type: none"> • Enhancement of the current subsidy schemes at local and national level aimed towards optimization of the support system in viticulture and viniculture • Regulation of grape and wine import market with the aim of better positioning and marketing of boutique wines and wineries originating from Crnica • Adaptation of legislative framework to the standards of the European Union and simplification of the 	<ul style="list-style-type: none"> • Development of the wine tourist offer through the implementation of operational marketing strategy for viticulture and viniculture of Crnica • Preservation of traditional ambient arrangement and authenticity of the sub-region in the function of rural tourism development • Development and improvement of 	<ul style="list-style-type: none"> • Protecting existing natural areas from uncontrolled urbanization and unsustainable and illegal use of natural resources • Ensuring continuous support of the competent institutions and research & development sector

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	administrative-bureaucratic procedures <ul style="list-style-type: none"> • Foundation of the consortium dedicated to the economic development of Crmnica subregion 	communal, public and road infrastructure in the function of sustainable management of natural resources	
Topola Municipality (Serbia)	<ul style="list-style-type: none"> • Establishing mechanisms/platform for wide consultations and organizing events with relevant institutions • LSG has developed their participatory budgeting model for financing agroecological transition • Establishing LAG for the Topola area (wine and history region) as a partnership of all interested actors 	<ul style="list-style-type: none"> • Conceptualisation and implementation of the Agroecological Annual Conference for wine production as a referent event of the region • Establishing the valorisation system for volunteering in different private and public entities for secondary school students 	<ul style="list-style-type: none"> • Developing online participatory portal for citizen participation in decision making, project preparation for sustainable community development and participatory budgeting
Platanias Asterousia (Greece)	<ul style="list-style-type: none"> • Developing and promoting a multifaceted authentic Cretan tourist experience • Organizing a centre for stakeholders' networking and the promotion of local wines 	<ul style="list-style-type: none"> • Providing training and education to winegrowers and producers regarding agroecological practices and innovations that may foster agroecological transition • Developing a local brand for agroecological and/or sustainable viticulture 	<ul style="list-style-type: none"> • Restructuring of the sector <ul style="list-style-type: none"> - Sustainable increase of total hectares under vineyards in the pilot areas, increase of farm size –coping with farm fragmentation-sustainable modernization of farms • Recording, researching and promoting indigenous Cretan varieties • Promoting the expansion of organic viticulture and establishing bio-district areas

Figure 7: Main identified actions to support agroecological transition in viticulture in Adrion area



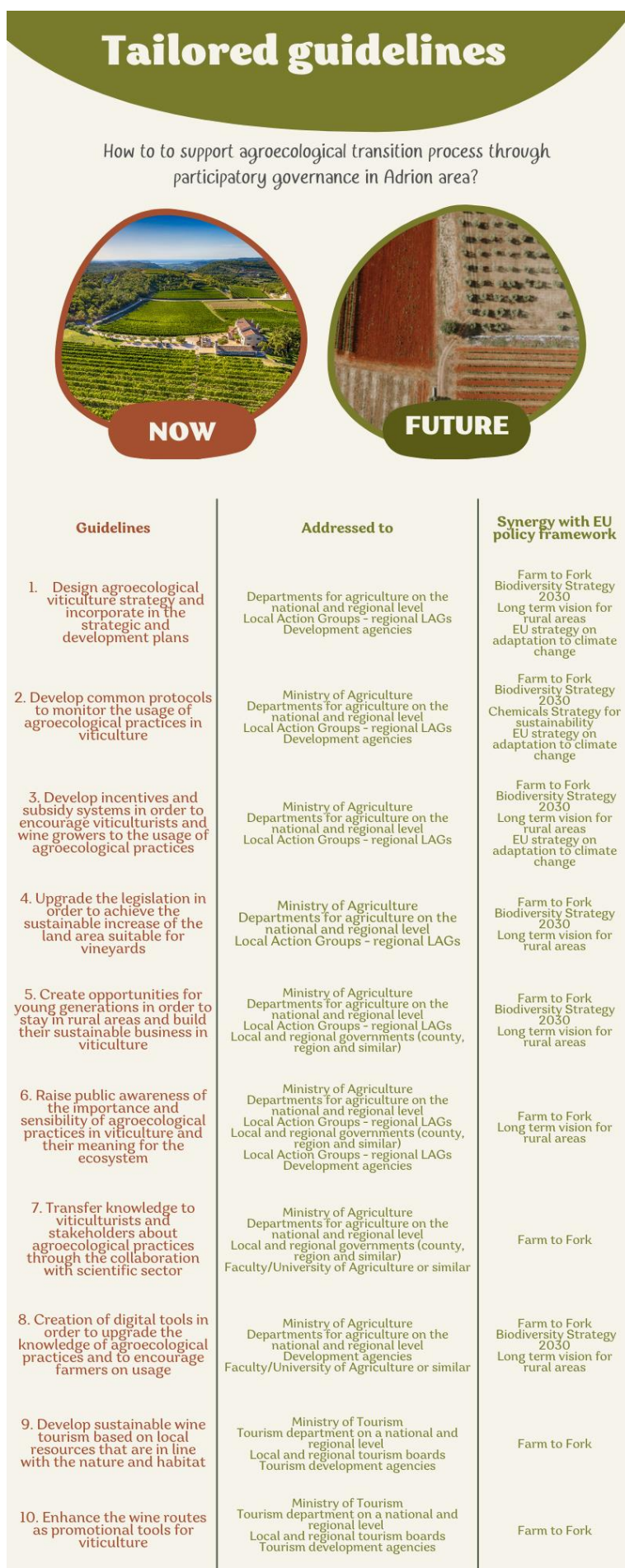
9. TRANSNATIONAL GUIDELINES TO SUPPORT AGROECOLOGICAL TRANSITION IN VITICULTURE IN ADRION AREA

The creation of new governance mechanisms involving policy and decision makers, research institutes, advisory services, small farms and other local value chain actors through networking instruments and regional policies helps re-shaping value chains and landscapes consistently with agro-ecological principles, especially by facilitating overcoming social and institutional barriers. The changes that are tackling the challenge of implementing agro-ecology practices in the vineyards, are mostly considered on how to encourage viticulturalist and owners of the wine farms to implement these sustainable methods. In order to raise their awareness about the agro-ecological practices but also to ensure the time horizon in which some of them will be implemented, these guidelines and directions need to come from the policy and decision-makers.

The proposed guidelines (Picture 7.) that are addressed to the policy and decision-makers on local, regional and national level could be translated into a formalisation of objectives of strategic documents and policies. Agroecological practices and agroecology in general is able to produce a great impact on the resistance of viticulture in future but also to set the ground for sustainable tourism offer based on local resources. The proposed guidelines are in line with the EU policy framework (From Farm to Fork, Biodiversity Strategy 2030, Long term vision for rural areas, EU strategy on adaptation to climate change) and most importantly with the Common Agricultural Policy 2021-2027, so the path has been taken and only needs to be continued in each country.

In order to create the strategy and other documents for the agroecological transition of each territory, the way of involving the community and decision and policy-makers has a significant role. This is why the participatory backcasting process, with the identified aim in advance, had led to the increased capacity for shared agroecological governance of territory by public and private decision-makers. This why of participatory planning helped to the identification of solution of conflicts about the use of territory through identification of shared solutions among interested parties.

Picture 7: Tailored guidelines for the ADRION area



T3.4.3 - Transnational guidelines to support agroecological transition processes through participatory governance

10.CONCLUSION

The agroecology is derived from two sciences - ecology and agronomy and through the history it has become an approach deeply rooted in family farmers' practices, in grassroots social movements for sustainability and the public policies of various countries around the world. Today, agroecology continues to straddle established boundaries. be integrated at the level of the overall management of transformations. Agroecology is a new way of linking agriculture, science, the environment and society. In this sense, agroecology goes far beyond a normative set of practices, farming systems, and even principles and rules of action. It shapes a social mechanism that brings together the agricultural world, research, public decision-makers and citizens, to define a path of change, transition and progress. Agroecological transition calls for the recomposition of agroecosystems.

The needed transition in viticulture and agriculture in general, is to move from these homogeneous monoculture systems that are highly dependent on pesticides, fertilizers, fuel, and other external inputs, to systems that are low input and depend on biodiversity for biological control. A transition from a system-degrading high input agriculture to sustainable low input agricultural systems. Also, 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 risk for established typical varieties, decreases in grapevine yields, increased incidence of certain pests and diseases.

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

These guidelines had elaborated the identified actions to support agroecological transition in viticulture in seven pilot areas located in Italy, Slovenia, Croatia, Serbia, Montenegro and Greece and how the agroecological transition needs to be supported through participatory governance mechanisms. In all of the involved countries, the agroecology and agroecological practices are very limited mostly because of a lack of short-term economic valuation, political support and practical knowledge. In all of the cases, it exists a great interest for their implementation but with support coming from the local, regional or national level. One of the most important conclusions is that the research on the agroecology needs to be dispersed and communicated with the policy and decision-makers and with wine farms, viticulturist and wine makers.

First of all, a common strategy on agroecology in viticulture needs to be developed so in line with this could be developed protocols to monitor the usage of agroecological practices and to give incentives to the farmers. In addition to this, raising of public awareness about agroecological practices is the next step and the last, but one of the most important is the development of sustainable wine tourism offer, promoting local resources and resilient ecosystem.

This report represents a significant baseline for future research and developments of agroecology. It also gives an overview of practices and initiatives that might be replicated or fine-tuned in other contexts. However, one of the main findings of this work is that agroecology is strictly depending from the context where it develops, therefore each initiative should be adapted to its socio-political context. This is why the participatory governance mechanisms are one of the most important processes in order to start the agroecological transition in any area.

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