



SUBTOPIC: Agroforestry and the landscape

TITLE: Agroforestry in vineyards as part of the agroecology approach: reviews, perspectives and insights from the ECOVINEGOALS partnership.

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Introduction



The project **ECOVINEGOALS** (www.ecovinegoals.adrioninterreg.eu) aims to develop strategies, action plans, tools and capacities for the agroecological transition of viticultural areas in the Adrion region in order to overcome the negative effects of intensive viticulture systems on soil, water, air quality, biodiversity and landscape and to increase the sustainability and resilience of viticulture.

Within the project key activities, the ten partners are collecting and evaluating several **agroecological best practice** landscape level. Among the practices analyzed so far are the systematic integration of trees, shrubs, annual crops and are ancient practices in the Mediterranean area; these are now grouped under the term 'agroforestry', and they deliver **ecosystem services** and benefits both for population and the farming system.



PARTNERS



LAG Eastern Venice, VEGAL, ITALY
(Lead Partner)



Autonomous Province of Trento, PAT, ITALY



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Nova Gorica, KGZS-Zavod GO, SLOVENIA



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Agency for Rural Development of Istria
Ltd. Pazin, AZRRI, CROATIA



Association for the Promotion of
Employment, Vocational Training and
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Business Development Centre
Kragujevac, BDCKG, SERBIA



Foundation Business Start-up Center,
BSC Bar, MONTENEGRO



Municipality of Bar, BAR,
MONTENEGRO



Mediterranean Agronomic Institute of
Chania, CIHEAM - MAICH, GREECE

Provisional services: in addition to grapes and wine, an agroforestry-managed vineyard can provide many other products such as: forage, wood, cereals, vegetables, fruits, berries, aromatic plants, poultry and other small livestock products.

Regulating and maintenance services: filtration, sequestration, storage, accumulations efficiency of the agro-ecosystem, mitigation of smells, noise, and visual impacts, local climate regulation by shading and mitigating extreme temperatures, protection from hail, wind and frost, pest and disease control.

Supporting services: increase of biomass production, soil protection and formation, increase in the stability of the slopes, ease in soil management, pollination, provisioning of different habitat and a higher level of biodiversity.

Cultural services: creation of a diversified landscape, enhancement of landscape character and scenic value, rediscovery of ancient and traditional agricultural practices.

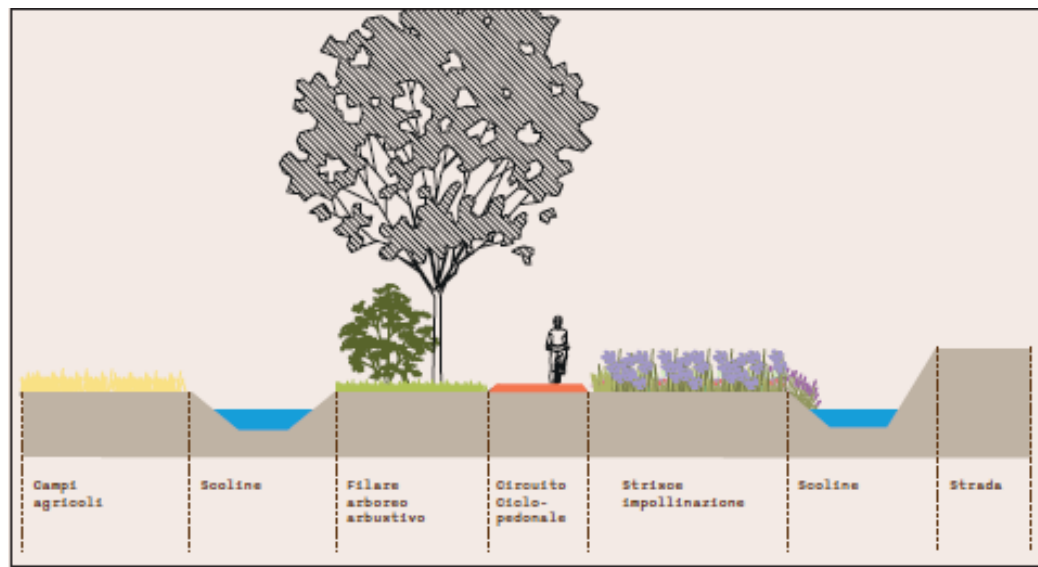
In order to exchange experience, knowledge and initiatives on agroforestry in vineyards, the project partnership started with the elaboration of an info-sheet for describing the best practices, using a simple form with a short description of the practice, the aim of the practice, suggestions for practice implementation, expected results, improvable or critical aspects, bibliographic indications and references. The partners are collecting data and information. The activity is still on course and this contribution reports some Agroforestry Best Practices detected in the Eastern Veneto Region, in the province of Vojvodina (Serbia) and in Trentino (Italy).

From Eastern Veneto (Italy)



VALLEVECCHIA di Caorle (VE)

Since 1999 Veneto Agricoltura, the Agency for innovation in the primary sector of the Veneto Region, has been actively involved in studying and promoting agroforestry systems. This was mainly possible thanks to its network of pilot and demonstration farms (1,100 ha). The company Vallevvecchia (Caorle, VE) houses an extensive system (over 20 km) of hedges for productive purposes (woody biomass for the district heating) and natural beauty. In addition, a project for the installation of new silvoarable systems was launched in 2017 and will be used for long-term studies on carbon in soil..



CA' CORNIANI CAORLE (VE)

The project LAND (Landscape Enhancement Project), based in the Ca' Corniani Estate in Caorle (VE), implemented the realization of pollination strips at the edge of agricultural fields using a mix of local wild herbaceous flowering species, annual and perennial. The proportion between the different species traces the natural condition. The flowering strips, placed also along bicycle and pedestrian paths, wind for almost 5 km inside the estate and ensure a series of benefits:

- **Aesthetic** landscape aspect: the strips create an element of territorial landmark that strongly connotes the estate and accompanies the user along the routes;
- **ecological-environmental** aspect: the strips, by interrupting the monotony and uniformity of the agricultural fabric, contribute to increasing the rate of biodiversity within the estate;
- **productive** aspect: the presence of the strips reinforces the presence of beneficial entomofauna, which benefit the agricultural cultures through the processes of pollination and biological control of pathogens and parasites.

The University of Padova (C. Bolzonella) is analyzing the contribution of agroforestry practices on the soundscape and the singing imprint.



R.A.I.V.O. PROJECT - CONSORTIUM OF EASTERN VENETO RECLAMATION

The aim of the project is to create a network of direct cooperation between the Consortium and the local agricultural enterprises to achieve the following objectives:

- **To avoid** the direct inflow of chemical substances, such as agropharmaceuticals and fertilizers, into the minor hydraulic network through the planting of buffer strips and hedges close to cultivated plots acting as an environmental filter.
- **To improve** existing and create new natural habitats with tree and shrub, and local species.
- **To increase** and safeguard local ornithological species through the realization and the installation of artifacts to be used as shelters in the different phases of the biological cycle of the species (artificial nests placed on trees, hedges or appropriate supports).
- **To requalify** the biological quality of the minor hydraulic network and the creation of aquatic ecosystems through the enlargement of pre-existing ditches or through the realization of new ditch heads.

FROM PROVINCE OF VOJVODINA -SERBIA

- Forestry, spatial planning and protective plantation

Since 2009 in the province of Vojvodina, seven municipalities issued a common plan for the construction of agricultural protection zones and agro-forest production systems. At present, all the ecosystems (agro and forest ecosystems) in this region are highly endangered and the province has the lowest percentage of forested land in Europe and only 5,5% of the total province area is classified as protected natural area. Of the total land area of 2,150,600 ha in Vojvodina, about 83.24% is used for agricultural production; wind erosion represents a very destructive factor because it causes the detachment and transport of the most fertile particles of the arable topsoil, permanently changing its fertility properties. The process for a diffusion of agroforestry in vineyards has begun and it is still ongoing. In the province there are 50.317 ha under vineyards so the definition of best practices for the implementation of agroforestry in vineyards is of great importance. In accordance with the standards of developed countries, the optimal area under forests and protective plantations is **0,16 hectares per resident**. According to this standard, currently Vojvodina lacks about 170 thousand hectares of new forests and protective plantations. Protective plantations reduce microclimatic extremes, change the air flows and reduce wind speed up to 50%, thus reducing soil dispersal and wind erosion, preventing the application of sand to fields. Protective plantation can have a multi-functional use as greenways, shelterbelts, beekeeping plantations, buffer plantations and eco-corridors. Shelterbelts can additionally increase income from wood assortments, fruits and biomass, increase biodiversity, contribute to the migration of wild species and contribute to the beauty of landscapes. Protective plantation needs care measures, such as weeding or watering, that should be implemented at least five years after planting.

FROM TRENTINO - ITALY



An ancient practice is foreseen in the plantation of Common Willow near or within the vineyards in order to have annually the vegetable material to bind the vine-shoots. This avoids the dispersal of plastics in the environment. A high level of biodiversity at the landscape level reduces the necessity to undertake initiatives at the farm level.



Preliminary consideration:

Agroforestry best practices for vineyards represent an important knowledge resource for fully developing the agroecological approach to grape production in the different contexts. The foreseen agroecological **network AVINE**, as a long-lasting result of the ECOVINEGOALS project, could be an opportunity to set up a community practice for further application of agroforestry practices in viticulture.



AGROFORESTRY, ECOSYSTEM SERVICES, LANDSCAPE AND RURAL DEVELOPMENT



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