



# Bridging Tradition and Innovation: Dual Apprenticeships for Wine Technicians in Siena



Regione Toscana



Cofinanziato  
dall'Unione europea



European  
Qualifications  
Framework





Regione Toscana



Cofinanziato  
dall'Unione europea



European  
Qualifications  
Framework



# The Italian and Tuscan Wine Sector:

## *Key Insights*

- Italy is the world's largest wine producer and exporter by volume.
- Tuscany is a key region, producing 2.6 million hectoliters in 2024.
- 95% of Tuscan vineyards are dedicated to high-quality DOP wines.
- The region is home to 58 Geographical Indications (52 DOPs, 6 IGPs).
- Organic viticulture is expanding, covering 38% of Tuscan vineyards.
- The sector is mainly composed of small and medium-sized enterprises.

## **Key Trends and Challenges**

- **Exports:** Growth in volume (+5%) and value (+10%) in 2024.
- **Main Markets:** The US is the top destination (33% volume, 40% value).
- **Challenges:** Climate change, shifting consumer preferences, and workforce needs.
- **Opportunities:** Innovation in sustainability and vocational training to enhance sector resilience.
- *Source: ISMEA Report 2025*



# Skills Ecosystems and Governance

Skills ecosystems are networks of businesses, institutions, and workers that co-develop and apply competences, enhancing economic resilience and competitiveness.

- **Conceptual Foundations:** **Finegold (1999)** on skills ecosystems; **Spours (2019)** on social ecosystems; **Ramsarup (2023)** on systemic leadership for just transitions.
- **Skills Governance:** The coordination of skill supply and demand among public, private, and third-sector actors to ensure continuous skill development and adaptability to economic transitions.

## Role of VET and Governance

National, Regional and Local authorities have a strategic role in facilitating the alignment of education, industry, and policy to foster workforce upskilling and SME innovation.

# The research methodology

## Approach

- **Grounded Theory** (Strauss & Corbin, 1990): Iterative process: each phase builds on previous findings
- **Spours' Social Ecosystem Model adapted to the wine sector**

## Research Design


- **Multiphase Mixed-Methods** (Creswell & Plano Clark, 2011), Integration of qualitative and quantitative methods
- Unstructured & semi-structured **interviews** with different actors
- Life stories as a tool to **analyze knowledge circulation & upskilling needs**


## Regional Case Studies

- Siena & San Michele all'Adige (ITA), Neustadt (GER)

### The ConnActions ITA GER project and the "Wine Network"



 **Local governance dynamics** & VET adaptation to labour market needs

 **Dual apprenticeships** as key enablers of skill development

# The VEM Model

## *A Skills Ecosystem Approach*

### Analytical Framework: Viticulture Ecosystem Model (VEM)

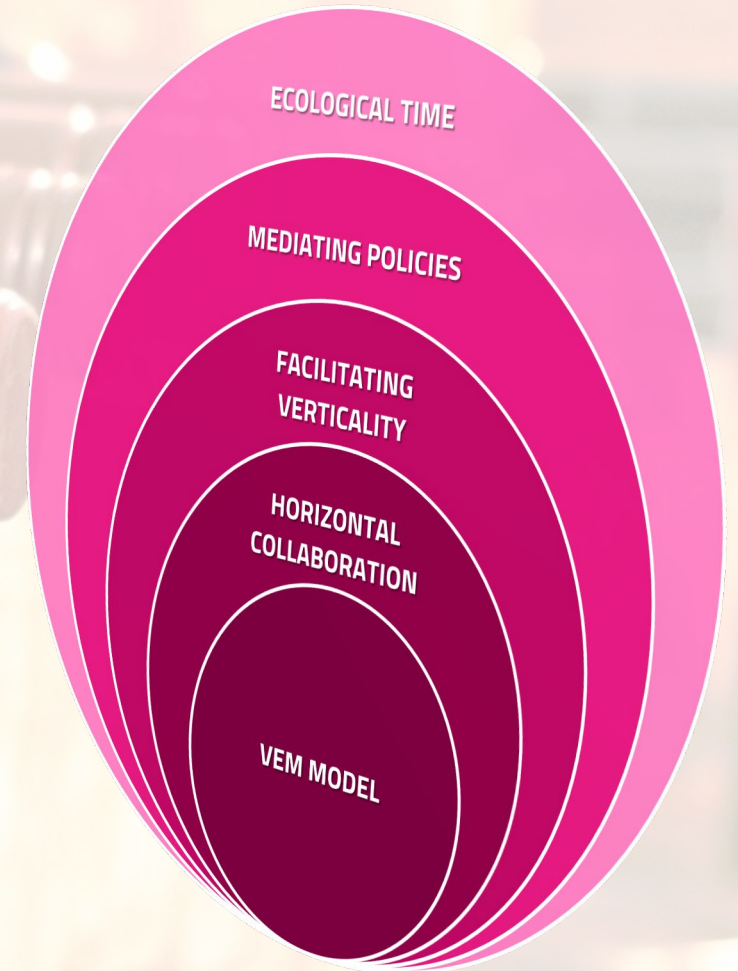
- Wine districts as social skills ecosystems
- The Wine Ecosystem Model (VEM) is an adaptation of the Social Ecosystem Model (SEM) by Spours, emphasizing territorial authenticity and community engagement
- A governance model for skill ecosystems focusing on specialized training and knowledge transfer
- Sustainability monitoring mechanisms embedded in the model

### Core Dimensions

1. **Horizontal Collaboration** – Enhancing cooperation among institutions, businesses, and community organizations.
2. **Facilitating Verticality** – Government policies and public support mechanisms to sustain apprenticeships.
3. **Mediating Policies** – Leadership ensuring alignment among stakeholders.
4. **Ecological Time** – Long-term sustainability of apprenticeship programs, adapting to technological and socio-economic shifts.

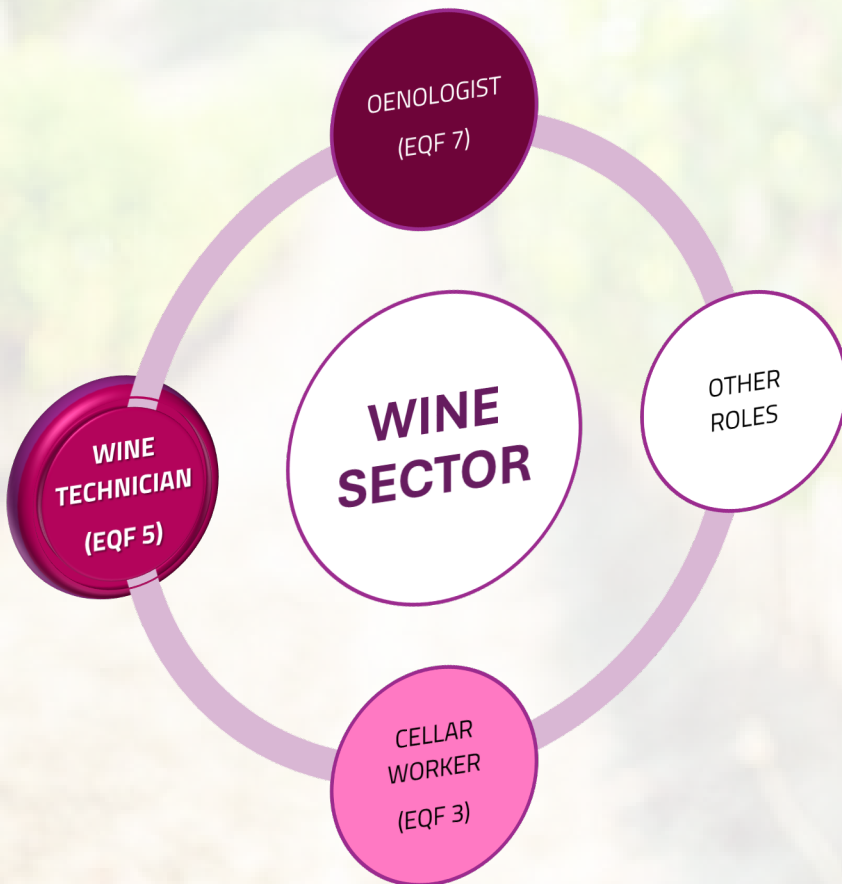
### Application

- The model assesses how academic institutions, businesses, policies, and local communities interact within a localized ecosystem.



# The wine technician

## *A Key Role in the Wine Industry*



### Definition and Training Pathway

- The **Wine Technician** is a historical (19<sup>th</sup> century) and specialized professional in vine cultivation, harvesting, and bottling techniques.
- Training is **regulated at State level** (Presidential Decree No. 88/2010) and consist in an additional year of study (EQF Level 5) to achieve the "Wine Technician" specialization title.
- The specialization pathway can be accessed only by students **having completed a five-year secondary school diploma in agricultural studies with a focus on viticulture and oenology**
- **Duration:** 1.056 hours; only **20 Schools** across Italy deliver the Specialization

### Skills and Competencies

- Strong expertise in **vineyard management, grape processing, and winemaking techniques.**
- Training mainly in schools, with alternation programs and internships (**max. 30%**)
- Learning tailored to national standards, with adaptations based on regional characteristics.

### Role in the Industry

- Manages grape production supply chains and winemaking operations.
- Eligible for membership in **Assoenologi**, the Italian association of oenologists and wine technicians.

# The new apprenticeship programme for Wine Technician

## 📌 Key Highlights:

**Strategic Priority:** Tuscany has supported the switch of the traditional Wine Technician specialization into a Higher Education and Research dual apprenticeship model to meet industry needs.

📌 The standard and dual wine technician pathways coexist

## 📌 Programme Overview:

- Initiated in 2020, currently in its third edition.
- Co-designed by the Bettino Ricasoli Agricultural Technical Institute in Siena and wine companies.
- Strengthens Tuscany's wine sector skills ecosystem.

## 📌 Funding & Support:

- Initially funded only by financial specific resources for apprenticeship programs.
- Now Supported also by the European Social Fund+ 2021–2027.
- Financial contributions from Tuscany Region enhance technical training and climate adaptation skills.
- For each apprentice:
  - **2.000 euros** apprenticeship **co-design (school/employer)**
  - **3.000 euros compulsory school tutorship**
  - **1.000 euros upskilling** on twin transitions issues, climate change, precision agriculture, etc

## 📌 Dual Apprenticeship Model:

- The dual model is the **predominant pathway**, most students opt for it **(95%)**, though the ordinary option still coexists.
- **1,056** hours annually:
  - **50% in-company training, 50% school-based** instruction.
  - **Two tutors for each apprentice:** a) School Tutor b) company tutor
- Aligns vocational education with industry needs, reducing skill mismatches and facilitates early labour market entry while ensuring qualification completion.

## 📌 Innovative Governance:

- **Co-design of training curricula between schools and employers.**
- **Tailor made approach** → Individual Training Plan (ITP) for each apprentice.
- **Collaboration with staffing agencies** for contract facilitation.

## 📌 Pedagogical support:

- **Tutors training** inspired by IT-GER QUALIT project best practices:
  - 4 days immersive training for both school and company tutors on: Tutor role, designing the individual dual apprenticeship, evaluating on the job training, giving feedback



Regione Toscana



Cofinanziato dall'Unione europea



European Qualifications Framework



Accenti  
in toscana

**FEDERICO**  
Studio e Formazione



Accenti  
in toscana

**MATILDE**  
Studio e Formazione



Accenti  
in toscana

**MATTIA**  
Studio e Formazione



Accenti  
in toscana

**MATHIAS**  
Studio e Formazione



# Benefits of dual path apprenticeships *in Wine Technician*



## For learners

- the dual model facilitates a **dynamic exchange of knowledge and professional practice** within the wine sector merging tradition and innovation methodologies in wine making and firming
- The dual model provides **strong professional guidance**, helping students navigate and integrate into the industry
- Apprentices develop competencies in **vineyard and winery management**, encompassing both agronomic and enological aspects
- Apprentices gain **hands-on experience across the entire production process**, from harvest and bottling to customer interaction, **including explaining and tasting wines**



## For companies

- Companies (SME and micro enterprises, family-owned) are engaged within the local skills ecosystem, **participating indirectly to the flexibility and adaptability of the vocational training offer** and they include young human resources in a traditional sector of the local economy
- The dual model is well-suited to **addressing the dual transition**, providing the necessary skills and experience to navigate both the green and digital transitions effectively



## For schools

- The dual model allows schools to **align their curricula** with the actual needs of businesses. Furthermore, the precision **agriculture technologies available in companies provide added value to schools**, as these technologies are not yet integrated into educational settings.
- Indirectly, **schoolteachers benefit from the dual pathway** as closer collaboration with businesses enables them to stay updated on industry developments and best practices.




# Impacts on the skills ecosystem

Dual apprenticeship path in Wine technician represents a good practice in how the logic of structuring and supporting a skills ecosystem is a crucial point in determining a constructive and continuous governance of skills at territorial level, as it helps in:

- Engaging stakeholders in **participatory processes** and playing collaborative efforts across public and private sector in fact the dual model was met with some reluctance by businesses. However, after implementation, **the number of participating companies has doubled**, as they have recognized it as a strategic tool for recruitment
- Bridging environmental and social dimensions of a local skills ecosystem
- Facilitating transitions, in all senses, also in the educational paths
- Building resilience through innovative learning pathways (e.g. digital readiness, **cutting-edge technologies** in the schools)
- Addressing skills gaps and sustaining the readiness of the workforce

# Recommendations/1

 **To strength interaction** between governance structures and the dual apprenticeship programs

- The Sienese wine sector serves as a significant example of how regional skills ecosystems can utilize governance frameworks and educational pathways to enhance socio-economic resilience and competitiveness

 **To reinforce governance structures** to foster more cohesive and inclusive collaboration approach among key stakeholders, including educational institutions, industry and SME representatives, and public administrations



Regione Toscana




Cofinanziato  
dall'Unione europea




European  
Qualifications  
Framework




# Recommendations/2

 **To enhance competencies** through the apprenticeship model to ensure the employability of future generations, thereby strengthening the sector's competitiveness during the ecological and digital transition

 **To facilitate the integration** of vocational education with higher education, creating a more cohesive pathway that enhances student employability

- (e.g. linkage between the wine technician programme and a highly specialized educational pathway at academic or technical level)

 **To support a lifelong guidance** in strategic sector of local and national economy (also to mitigate the effects of the future demographic trends)



Regione Toscana



Cofinanziato  
dall'Unione europea



European  
Qualifications  
Framework



# Thank you!

## Authors & Contacts

**Miriana Bucalossi - Regione Toscana** [miriana.bucalossi@regione.toscana.it](mailto:miriana.bucalossi@regione.toscana.it)

**Alessandra Biancolini – INAPP** National Institute for Public Policies Analysis [A.BIANCOLINI@inapp.gov.it](mailto:A.BIANCOLINI@inapp.gov.it)

**Anna Rita Racioppo – INAPP** National Institute for Public Policies Analysis [A.RACIOPPO@inapp.gov.it](mailto:A.RACIOPPO@inapp.gov.it)

**Michela Bastianelli – INAPP** National Institute for Public Policies Analysis [M.BASTIANELLI@inapp.gov.it](mailto:M.BASTIANELLI@inapp.gov.it)

**Davide Premutico – INAPP** National Institute for Public Policies Analysis [D.PREMUTICO@inapp.gov.it](mailto:D.PREMUTICO@inapp.gov.it)