SIEMBRA FUTURO
Cultivating Green Skills and Sustainable Futures through VET in LATAM

Co-funded by the European Union

Siembra Futuro: Contributions to Vocational Agricultural Training in Latin America Towards Smart Agriculture and Climate Resilience

Fundación SES

Latin American agriculture is undergoing changes on multiple fronts: the digitalization of production processes, adaptation to climate change, and the inclusion of new social actors in rural development. Rural areas also need to retain young people and integrate women as key players in rural development.
In this context, vocational agricultural training (VET) emerges as a critical factor that determines the capacity of territories to respond to these transformations.
However, technical education systems show a significant structural gap in relation to the skills demanded by the sector: climate change management, environmental sustainability, and mastery of information technologies and innovations such as precision agri culture and digital tools. Added to this is the requirement for adaptive capacity in transforming production environments and ensuring food traceability.

To enhance the training of future rural technicians and professionals, it is imperative that educati on systems integrate these skills as central elements of their curriculum, ensuring high standards of productivity and sector relevance.
The *Siembra Futuro* project (Erasmus+ Capacity Building in VET, 2026 – 2028), coordinated by De La Salle Solidarietà Inter nazionale ETS (Italy), is a 24-month educational innovation initiative aimed at modernizing vocational agricultural education in Colombia, Brazil, and Venezuela.
The consortium, comprising Fundación SES (Argentina), Universidad de La Salle – Utopía (Colomb ia), Colégio La Salle Xanxerê (Brazil), Fundación La Salle de Ciencias Naturales (Venezuela), COAG-IR (Spain), and FORMAC (Poland), seeks to reconfigure technical training offerings to align them with the demands of Agriculture 4.0, green skills, and clima te sustainability. Through the creation of new curricular modules and an open -access e-learning platform, the project aims to bridge the gap between traditional methods and technological advances, promoting food security and retaining young employment in r ural areas.

Why rethink vocational agricultural training?

Ongoing diagnostics with project partners in Colombia, Brazil, and Venezuela reveal a persistent paradox: while production systems

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increasingly demand skills in precision agriculture, data manageme nt, and climate sustainability, technical training in many respects remains anchored in outdated methodologies and content that need revision and updating. This gap is not only pedagogical but also economic and social. It means there is a high likelihood t hat rural youth will graduate without the tools needed to thrive in their territories.

This also limits opportunities to engage in production processes that incorporate new technologies, generating new forms of exclusion. Ultimately, the goal is to create a symbiosis between the needs of vulnerable sectors (and those actors investing in innovation in their territories) and the technicians and professionals, from both public and private sectors, who must support these processes productively while ensuring e quity and respecting natural ecosystems. *Siembra Futuro* proposes addressing this gap through a methodology that prioritizes co - creation with local territories and stakeholders.

Methodology Prioritizing Co -Creation

The project is structured in five interco nnected phases that prioritize mutual learning and territorial relevance:

- **Participatory Diagnosis:** Using institutional surveys, interviews with key actors, and focus groups with farmers, students, and teachers, the project maps not only what needs to be taught but how and where it makes sense to teach it. Early analysis is already revealing critical tensions, such as the "incongruity" highlighted by Colombian partners of promoting Agriculture 4.0 when many smallholders lack basic technical assistance or rural connectivity.
- **Experience Exchange:** A study visit coordinated by COAG will allow Latin American trainers to learn firsthand about European experiences in regenerative agriculture, circular economy, and inclusion of women and diverse actors in agriculture. This is not a passive observation trip: the goal is to critically analyze which practices can be adapted to Latin American contexts and which require substantial transformation.
- **Co-Creation Lab:** In Colombia, European and Latin American partners will jointly design training modules, combining technical, pedagogical, and territorial knowledge. The Co-Creation Lab represents a methodological approach to break away from "top-down" curricular design logic.

This approach fosters reciprocal learning, as ancestral knowledge, everyday practices, and holistic understanding of natural environments require professionals with technical and scientific skills to maintain high flexibility. The goal is to help close the technological gap and intervene in

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complex processes of market access, financial inclusion, and equitable distribution from a perspective of reciprocal learning.

- **E-Learning Platform and Mentorship:** The project will develop a digital training platform adapted to variable connectivity contexts, complemented by a mentorship program linking VET teachers with experts from sustainable agribusinesses.
- **Visibility and Dialogue:** The series *Women in Agri-Tech* will highlight female leaders transforming the sector, contributing to a technological transition in agriculture that is also a transition toward gender equity. Central debates will address financial inclusion, equitable distribution of care work, access to health and education, and ensuring fair income wherever possible —upholding the principle of "equal pay for equal work."

Three Challenges Addressed by the Project

Initial diagnostics identify three main areas shaping the success of any innovation in vocational agricultural training:

1. **Tension Between Innovation and Rural Reality:** Partners recognize precision agriculture and data analysis as urgent emerging skills. However, Colombia emphasizes that one cannot leap directly to Agriculture 4.0 when rural connectivity is limited and many producers lack basic agronomic training. The solution is to design gradual training pathways combining in-person and digital approaches intelligently.
2. **Climate Resilience as a Cross-Cutting Competency:** Brazil prioritizes manure management through biodigestion, integrating greenhouse gas mitigation, rural energy autonomy, and soil fertility improvement. Colombia emphasizes agroecological transition as a state policy. Spain contributes a framework integrating "know-how," "know-to-adapt," and "know-to-defend," the last ensuring producers navigate environmental regulations as tools for food sovereignty rather than obstacles. The challenge is to translate these priorities into operational, contextualized training content.
3. **Reconnection Between Training and Territory:** A critical element is bridging the gap between rural technical training and the productive vocations of each territory. This gap has been highlighted as a major obstacle to rural development, such as missing content on effluent and biological waste treatment in intensive livestock regions or generic training offerings disconnected from local realities. Overcoming this requires technical education centers to open curricular design to producers, cooperatives, and agribusinesses, making them co-creators rather than passive recipients of education.

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Towards a Community of Practice in Educational Innovation

Siembra Futuro aims to generate measurable transformations in three dimensions. In vocational education, it develops modules integrating sustainable agricultural practices, digital innovations, and climate resilience, supported by an e -learning platform democratizing ac cess to quality training. In workforce integration, it establishes mentorship programs and institutional partnerships between VET centers and agribusinesses, explicitly targeting rural youth and women. In international cooperation, it consolidates knowledg e exchange networks between Europe and Latin America that move beyond charity models to create horizontal dialogues on agricultural policy, rural extension, and technological transitions.

The project aligns with multiple Sustainable Development Goals: qual ity education (4), decent work (8), climate action (13), gender equality (5), and partnerships for innovation (17). Beyond these global frameworks, *Siembra Futuro* is driven by a practical conviction: well -designed vocational training can bridge the gap bet ween the agriculture of today and the agriculture needed for a more productive, sustainable, inclusive, and 21st -century - ready rural sector.

The project is in its early implementation stages, providing an opportunity for diverse actors in the agro -educatio nal ecosystem —training centers, producer organizations, research institutions, rural development agencies—to engage in this innovation process. The consortium's accumulated experience, combined with a methodological openness toward territorial co -creation, positions *Siembra Futuro* as a relevant experimentation space for those working at the intersection of education, sustainable agriculture, and rural development.

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