



SCALE^{UP}
community-driven
bioeconomy development

Evaluation Report – SCALE-UP Student Competitions

June 2025

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valuable contributions from all SCALE-UP partners



This project has received funding from the European Union's Horizon Europe
research and innovation programme under grant agreement No. 101060264.

ACKNOWLEDGMENT & DISCLAIMER

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EXECUTIVE SUMMARY

The SCALE-UP project successfully engaged students across Poland, Sweden, France, Austria, North Macedonia, and Spain. Each region hosted uniquely tailored events aligned with SCALE-UP's core values of circular economy, bioeconomy awareness and entrepreneurship. In total, the project directly involved 452 students and teachers: 114 in Austria, 90 in North Macedonia, 87 in Spain, 100 in Poland, 15 in Sweden, and 46 in France.

The “Zero Food Waste Challenge: Von der Tonne zum Business” took place in Upper Austria and engaged 114 students from five schools. Students formed teams and tackled the problem of food waste by creating innovative, locally relevant business concepts. The school-based format allowed for seamless integration into the curriculum. Evaluation was conducted by experts from the regional Bioeconomy Platform. Students enhanced their critical thinking, research, and entrepreneurial skills. Teachers reported high engagement, and several student ideas showed potential for real-world application.

In Strumica, North Macedonia, over 50 students from Dimitar Vlahov Vocational High School took part in the “Bioeconomy Through Art” competition. Guided by 25 mentors, students created artistic representations using natural and recycled materials to express concepts related to sustainability and the bioeconomy. This experience also underscored an important local lesson: the value of early mentor training. A potential model that could be emphasized further is to first implement a “train the trainers” approach, where selected individuals receive targeted preparation and then serve as mentors for student teams. This not only enhances the quality of mentorship but also fosters networking, knowledge sharing, and a more structured learning process. The event attracted around 90 attendees, including local government officials and media representatives. Key highlights included artistic installations on environmental themes, presentations from industry speakers, and broad community support. Projects such as bio-cosmetic products and grapevine waste reuse stood out for creativity and relevance.

In Andalusia, Spain, CTA organized an “Express Ideas Competition” in Churriana de la Vega, involving 87 students from Federico García Lorca Secondary School. The competition focused on developing innovative business ideas using by-products from the olive grove industry. The event used a simplified hackathon-style format to promote rapid ideation, teamwork, and entrepreneurial thinking. Supported by public institutions and private partners, students used business model tools like CANVAS and delivered elevator pitches to a professional jury. The winning idea involved the creation of bioplastic from olive waste—demonstrating both innovation and feasibility.

The student competition titled “Hack-The-Farm - an encounter with the Bioeconomy” was held on 17-18 October 2024 at the Władysław Stanisław Reymont Agricultural School Complex in Radom, Poland. It involved 100 students and aimed to raise awareness about bioeconomy and sustainable farming. The hackathon-style format encouraged teamwork and creative problem-solving. Practical rewards and active student participation reflected the positive impact. Challenges like time constraints and varying knowledge levels were managed effectively. Future improvements include more time, better mentorship, and virtual participation options.

In Northern Sweden the competition was ongoing from August 2024 to January 2025 at Timrå Upper Secondary School. The competition engaged 15 students and emphasized “Bioeconomy through bio-based product development”. The initiative promoted Skogslabbet, a web-based learning tool, and encouraged innovation and sustainability thinking. Despite limited teacher availability due to AI training and curriculum changes, student engagement was high. Projects addressed local forestry and agricultural sustainability. Top projects scored between 69%–73%.

In the French Atlantic Arc, a hackathon titled “Building and Bio-based Solutions” was organised on 13 December 2024. It took place at ENSA Normandie, involving 46 students from UniLaSalle and ENSAN. The competition promoted cross-disciplinary teamwork, innovation in bio-based construction, and collaboration with local stakeholders, thus it strongly aligned with SCALE-UP goals and generated promising project ideas, some of which continued post-event. Positive student feedback and effective expert mentoring stood out, with future improvements including preparatory sessions and early team formation.

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1 Timeframe and Objectives

In **Austria**, activities under the SCALE-UP student competition took place from October 2024 to January 2025. The main objectives were to raise awareness about zero food waste and sustainable lifestyles, enable students to explore business solutions related to food waste, enhance entrepreneurial skills within a team-based school setting, and strengthen ties between education and the food industry.

In **North Macedonia**, the event was held on December 5, 2024. It aimed to introduce bioeconomy concepts through artistic expression, develop collaboration and creative thinking through art-based projects, promote student and community participation in sustainability efforts, and strengthen collaboration between the educational sector, the community, and government institutions.

In **Spain**, the event was hosted on November 19, 2024, focusing on fostering entrepreneurial innovation within the olive grove bioeconomy. Students were encouraged to build competencies in pitching and business modeling using the CANVAS framework, increase the relevance of their education by linking it with the agricultural sector, and engage in accessible competition formats to boost participation.

In **Poland**, the event took place on October 17–18, 2024. The key goals were to promote bioeconomy awareness, develop skills in sustainable farming, innovation, and social entrepreneurship, and encourage teamwork in designing regional solutions for farms.

In **Sweden**, activities ran from August 2024 to January 2025. The focus was on integrating bioeconomy concepts into education, connecting curricula to sustainable development goals, and promoting collaboration with external stakeholders.

Finally, in **France**, the event on December 13, 2024, aimed to inspire sustainable innovation and bio-based building practices. Students developed skills in bio-sourcing, architecture, and entrepreneurship, while also strengthening collaboration with local partners.

2 Methodology

The formats of the SCALE-UP competition varied across the regions to best meet local needs and contexts, resulting in different types of submissions from students. Despite this diversity, the evaluation process was largely consistent across all participating regions.

Data collection methods included surveys, feedback sessions, jury evaluations, direct observations, and media documentation. These tools helped assess both the implementation process and the outcomes of the activities.

Key stakeholders involved in the methodology included students, teachers and mentors, jury members from relevant bioeconomy sectors, and the organizing bodies in each region.

The evaluation criteria applied across all submissions focused on four main areas: creativity and originality, feasibility and sustainability of the proposed ideas or projects, their potential community impact, and the overall alignment with the SCALE-UP competition goals.

3 Overview of Competitions by Region

Country	Date	Venue	Participants	Theme	Winner idea
Austria	Oct 2024–Jan 2025	Local schools in Upper Austria	114	Zero Food Waste Challenge: From Bin to Business	Crackers made from whey and a vegan ready-to-eat sauce.
North	Dec 5,	Dom na ARM,	90	Bioeconomy	Wine Stoppers

Macedonia	2024	Strumica		Through Art	from Grapevine Bio-Waste
Spain	Nov 19, 2024	Cultural Center, Churriana Vega	87	Express Ideas Competition: Let's Undertake in the Olive Grove!	Creating a bioplastic from olive grove waste.
Poland	17–18 Oct 2024	Radom – Reymont Agricultural School	100	Hack-The-Farm - an encounter with the Bioeconomy	Social innovation journey for a sustainable apple farm
Sweden	Aug 2024 – Jan 2025	Timrå Upper Secondary School	15	Biobased Products from forest biomass	Mushroom mycelium used as a building material
France	13 Dec 2024	ENSA Normandie, Rouen	46	Building & Bio-based Solutions	Reed constructive blocks, and panel made of mycellium



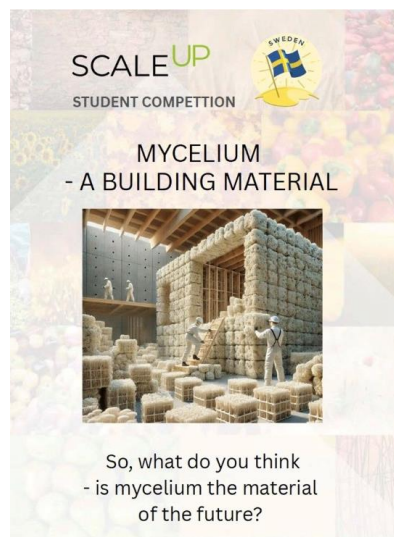
Austria*



Spain*



France*



Sweden*



Poland*



North Macedonia*

**Photos – courtesy of project partners*

4 Key Results

4.1 Participation & Demographics

The initiative engaged a diverse group of participants across six countries, encompassing secondary and vocational education levels:

- **Austria:** 114 students from five secondary schools. [More info](#)
- **North Macedonia:** Over 50 students and 25 mentors from one vocational school. [More info](#)
- **Spain:** 87 students in 13 teams from both secondary and vocational levels. [More info](#)
- **Poland:** High student engagement through a hackathon format. [More info](#)
- **Sweden:** Students from schools with limited teacher engagement but strong interest in the bioeconomy. [More info](#)
- **France:** Interdisciplinary student teams, blending scientific and creative skillsets. [More info](#)

4.2 Adapting the Competition to Local Contexts

Each country tailored the competition to fit local contexts and strengths, showcasing a variety of formats:

- **Austria:** Emphasized real-world business ideas related to waste reuse.
- **North Macedonia:** Focused on artistic and creative expression using natural and waste materials.
- **Spain:** Featured a fast-paced business ideation competition connected to the agriculture sector.
- **Poland:** Used a hackathon-style event incorporating a local orchard as a real-world setting.
- **Sweden:** Delivered a regionally focused competition around forestry and agriculture.
- **France:** Highlighted the use of bio-based materials such as hemp, flax, and mycelium in solution development.

4.3 Regional Highlights

Each region brought unique strengths and innovations to the program:

- **Austria:** Strong integration with food-related schools and bioeconomy experts.
- **North Macedonia:** High media visibility and robust support from municipal authorities and the teachers as mentors.
- **Spain:** Effective collaboration between public and private sectors; successful use of an express innovation format.
- **Poland:** Positive impact at the school level, with creative problem-solving encouraged by the hackathon structure.
- **Sweden:** Students produced creative solutions despite low teacher involvement; competition tailored to the forestry/agriculture landscape.
- **France:** Delivered high-quality, interdisciplinary projects with long-term potential and ongoing development.

5 Evaluation by Stakeholders

The SCALE-UP competition received consistently positive evaluations from all key stakeholder groups involved in the project.

Students across all regions reported strong learning outcomes and high levels of motivation. They demonstrated increased awareness and understanding of entrepreneurship and sustainability, while also gaining valuable real-world experience through teamwork, public speaking, and solution development. Their feedback, echoed by educators, highlighted a deep sense of engagement and satisfaction with the competition format and outcomes.

Teachers praised the program's integration into the school curriculum, noting that it provided meaningful opportunities for mentoring and enriched their teaching with practical, cross-disciplinary applications. They emphasized that the competition helped bridge theoretical knowledge with real-world challenges, making learning more dynamic and student centred.

Judges, many of whom came from the bioeconomy and related sectors, valued the creativity, feasibility, and level of student engagement shown in the submissions. They appreciated the fresh perspectives students brought to sustainability and innovation challenges, as well as their ability to apply complex concepts in accessible and often imaginative ways.

Organizers identified early planning and a clear, well-structured competition framework as key drivers of success. They noted that local adaptation, strong communication with schools, and engagement with community and sector stakeholders contributed significantly to the overall impact of the initiative.

6 Challenges and Lessons Learned

Country	Challenges	Lessons Learned
Austria	Narrow or specific topics limited broad participation.	<ul style="list-style-type: none">• Provide clear support materials to help teachers and students;• Use simple digital tools to improve communication and make participation easier
North Macedonia	Limited knowledge of the bio-based sector affected engagement.	<ul style="list-style-type: none">• Involve schools and teachers early to ensure strong commitment and good organization;• Use a train-the-trainer approach to prepare teachers as mentors for students;• Choose real-world topics to keep students interested and motivated;• Use art to make complex sustainability ideas easier to understand.
Spain	Narrow theme initially reduced interest.	<ul style="list-style-type: none">• Having students work in mixed teams with different backgrounds gave them a broader, more complete view of the bioeconomy and reflected the kinds of jobs they may have in the future;• Inviting professionals from the agricultural sector to speak during the event helped students better understand the bioeconomy and the career paths it offers.

Poland	<p>Team management and time constraints impacted performance;</p> <p>Technical issues with registration caused delays.</p>	<ul style="list-style-type: none"> • Clear communication of goals, expectations, and project context helped participants stay focused and engaged throughout the event; • Adding time limits and a bit of friendly competition made the event more exciting and helped teams work efficiently; • Mixing students with different skills and backgrounds led to better teamwork and more interesting ideas; • Setting up the room to encourage talking and having helpful facilitators made it easier for teams to work together; • Simple tools like QR codes and online forms made registration and communication smooth and easy; • Giving certificates or small prizes made participants feel appreciated and created a positive atmosphere.
Sweden	<p>Teacher availability was limited due to other commitments like AI training;</p> <p>Digital outreach alone was not enough to engage participants effectively.</p>	<ul style="list-style-type: none"> • Engage schools and teachers well in advance to allow time for integration into lesson planning and school calendars; • Focus on a smaller geographic area and involve local stakeholders to enhance relevance and logistical feasibility. • Personal interactions, such as school visits, workshops, and lectures, are essential to spark interest and build trust and should complement digital outreach; • Involving researchers, entrepreneurs, and start-ups can inspire students and make the bioeconomy theme more tangible and exciting; • A shorter, well-structured event (e.g., a one-day competition) can be more manageable for schools and increase the chances of success.
France	<p>Mixed teams needed early coordination, as business modelling was challenging without prior experience.</p>	<p>Introduce business tools earlier; provide more guidance and structure</p>

7 Recommendations

Based on the experiences and feedback gathered across all participating regions, several key recommendations have emerged to strengthen future student competitions:

⇒ **Develop and Deliver Structured Pre-Event Training**

Provide clear, accessible training in local languages for both students and teachers. Cover key topics such as bioeconomy, entrepreneurship, and business modelling to build confidence and equal footing.

⇒ **Use Flexible Participation Formats (Onsite, Virtual, or Hybrid)**

Offer multiple ways to participate—onsite, virtual, or hybrid—to increase accessibility and accommodate different needs. This flexibility enables broader student engagement, especially in schools facing logistical or geographic challenges.

⇒ **Engage Schools with Relevant Focus Areas**

Partner with schools that prioritize sustainability, entrepreneurship, or bioeconomy to boost motivation and relevance.

⇒ **Integrate the Competition into School Curricula**

Work with educators to embed the competition into existing classes or cross-disciplinary projects to ensure institutional support.

⇒ **Engage and Train Mentors with Real-World Experience**

Combine a train-the-trainer model for teachers with involvement of professionals from entrepreneurship and sustainability fields. These mentors can guide students, build teacher capacity, and make learning more relevant and inspiring.

⇒ **Start Outreach and Coordination Early**

Begin planning and engagement with schools and stakeholders well in advance to ensure strong commitment and smoother logistics.

⇒ **Design Real-World and Student-Relevant Challenge Themes**

Choose topics tied to local contexts and real challenges. Use creative tools like art and storytelling to simplify complex sustainability issues.

⇒ **Foster Cross-Regional Knowledge Sharing**

Support regular sharing of lessons learned and best practices through digital platforms, webinars, or reporting to grow the SCALE-UP community.