



USAGE-NG

Up-skilling Agricultural Engineering
Next Generation

Field-demonstration activities in South Tirol

Work Package n°: **4**

Activity n°: **4.1**

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1 Executive Summary

The activity 4.1. was integral part of other activities of WP 4. Field-demonstration activities took place especially in the framework of learning courses.

2 Overview

Activities 4.1. Field-demonstration activities in South Tirol are closely interrelated with the other activities in this work package. In order to implement the overall USAGE NG project tasks to foster digital and green capabilities, it is necessary to link WP activities as much as possible. Therefore, many of the activities 4.1. were part of other activities and especially of courses held in the realm of this WP.

Activity 4.1. was done by organizing learning events, lectures and courses that included the target groups of this project, or better graduate, postgraduate and Lifelong Learning students in the area of small-scale farming (SMF: small and medium farm enterprises) and other stakeholders in the agricultural sector. Learning activities were tailored to necessities of the agricultural sector in the South Tyrolian context, reflecting on most required tasks.

Field activities consisted of field visits of demo fields, particular crops and farming technologies and addressed particular regional problems, as e.g. vehicle safety issues, plant protection and operational monitoring, organized under different titles as field days, technological demonstrations, factory visits, guided tours, seminars or study days.

Particular relation of field activities to South Tyrol. Some events were part of full training and learning courses. Activities 4.1. Field-demonstration activities in South Tirol concern the entire WP.

List of field demonstration activities in South Tirol

Date	Event	Organized by	Argument	No. of pers.	In collaboration
10/2025	Demonstration at GEIER tractors srl.	unibz	Discussion and presentation of cereal harvesting machine	15	
09/2025	Demonstration of crop production/harvest in mt. areas at TaserAlm, Schenna.	unibz	Cereal harvest on sloped terrain	12	CEREALP
11/2024	Operational monitoring field demonstration on mixed mountain farm, Oberbozen	unibz	Data logger, operational monitoring	5	AGRITECH
08/2025	Demonstration of machinery for cereal cultivation in mountain areas, Naturns	unibz	Cereal harvest with reaper binder, machinery safety	12	CEREALP

07/2025	cereal harvest in mountain areas, Naturns	unibz	Cereal harvest with Fella harvester, machinery safety	11	CEREALP
10/2025	Demonstration operational monitoring on mixed mountain farm, Oberbozen	unibz	Operational monitoring, machine safety	6	AGRITECH
05/2025	Guided tour of Lido, digital test orchard, Laimburg	unibz	Innovative SmAgr technologies for orchard farming	16	
06/2025	Demo and visit cultivation and marketization of niche crops (i.e. rye) Wallis, CH,	ERE, unibz	Mt farming, smart farming, cereal harvest, niche markets	14	CEREALP
02/2025	Farmer information on niche crops and cereal cultivation, Glurns	BGO, unibz	Technologies and mechanization for mountain cereal farming	25	CEREALP
10/2024	Demonstration at GEIER tractors srl., Marlengo	unibz	Presentation of cereal harvesting prototype	3	
04/2025	Operational monitoring test at mixed mountain farm, Oberbozen	unibz	Agr machinery safety, operational monitoring	7	AGRITECH
07/2024	Demonstration at Fondazione Edmund Mach in San Michele all'Adige (TN)	unibz	Visit to the laboratories and the experimental vineyards and orchards	10	

Abbreviations of collaborations:

AGRITECH National Research Centre for Agricultural Technologies, PNRR

INEST Interconnected Nord-Est Innovation Ecosystem, PNRR

CEREALP Developing and testing retrofitting farm machinery solutions for cereal production in alpine mountain regions

Through USAGE NG several lifelong learning events were realized that involved a wide public and disseminated information. However, we were unable to organize many big public field activities for several reasons: It proved too ambitious, complicated in the highly fragmented agricultural landscape in South Tyrol. Intensive links with local and regional farmer associations that are necessary for such events could be realized only later.

A series of specialized events for advanced learners with previous experience was organized that involved actors from the small and medium farming system, such as industry experts, agricultural sector consultants and regular university students. Most activities of 4.1. referred to this group of persons, i.e. persons that already have expertise in the respective agricultural sector.

Field activities had often an informal character as they relied usually on local partners, being held at their properties. The activities proved strong networking events as they enabled

encounters between local and sub-regional experts, practitioners and administrators. Each event brought new contacts and linkages for possible collaboration.

Activities tailored to mountain areas

The activities of this WP, in particular activity 4.1 and 4.2, are tailored to mountain farming in the South Tyrolian context. The topics of the field-demonstration activities reflect the necessities of SMF in South Tyrol. The activity is helping SMF to advance understanding of machinery and technologies that support existing production systems or help to establish alternative value chains, e.g. cereal production and specialized crops.

Field demonstrations or visits were organized regarding different thematic areas:

1. New and better learning formats and materials on smart agriculture technologies in different practical scenarios
 - Hands-on courses and exercises to students and LLL. The courses strengthen students understanding of digital technologies in agriculture and enlarge regional networks in South Tyrol and beyond
 - publications, reports, videos, stability maps
 - mobile LLL: Side-specific learning & demonstration
 - Field days and laboratory action on spraying (apple orchards) cereal production (mountain areas), machine safety
 - Two or more courses were organized in different formats (hybrid), which include laboratory exercises at NOI-Techpark, UNIBZ
 - Development of suitable pedagogic concepts and tools (activity 4.2.) to reach out to remote farmers but also working students, LLL need
2. SMF learning requirements for future challenges, with particular focus on specific requests in South Tyrol (e.g. mountain agriculture, fruit and vine production). Understanding for which areas and technologies competences are required:
 - Spraying technologies
 - Niche markets as cereal production and harvesting
 - Machine safety, e.g. roll-over stability
 - Operational monitoring
3. Sensibilizing technology developers (engineers, agro-informatics, manager) and users on problems and needs of SMF (small and medium farmer enterprises)
 - Courses to upskill management level and engineers
 - Scientific papers and presentation at specific conferences
 - Reaching out to engineering students
 - Direct talks with producers e.g. Geier, Caffini, Cicoria

Results

Besides learning and outreach to LLL and interested experts, a main achievement of this activity is the high visibility of unibz AFI-Lab in the region South Tyrol and beyond. The undertaken activities informed actors from the agricultural sector, industry and academic research on possible joint collaborations and services.

The activities helped also to attract regular unibz students to further studies at AFILab and possible graduating thesis. Exercises in the lab supported regular unibz students and LLL to comprehend and conceptualize principle difficulties of typical problems in the agricultural machinery sector.

The conducted exercises brought participants to better informed decisions in the agro-forestry sector. The exercises are innovative in the sense that they allowed LLL to approach highly relevant topics with a hands-on approach.

Achieved Results

Activity 4.1 implemented a structured series of field-demonstration activities in South Tyrol, aimed at transferring smart farming knowledge into real mountain farming contexts. The activity focused on small- and medium-scale farmers (SMF), lifelong learners, and university students, and addressed concrete technological, organisational, and safety-related challenges of agriculture in alpine regions.

The activity comprised 12 documented field-demonstration events, as detailed in the Activity 4.1 Report. These events were conducted between July 2024 and October 2025 at multiple locations across South Tyrol and neighbouring alpine regions (including South Tyrol, Trentino, and Wallis, Switzerland). All events were organised or co-organised by UNIBZ, often in cooperation with regional and cross-border partners such as CEREALP, AGRITECH, BGO, and technology providers.

The demonstrations covered a broad thematic spectrum directly relevant to mountain farming systems. Key topics included:

- * cereal production and harvesting under steep-slope conditions,
- * machinery safety and roll-over stability,
- * operational and performance monitoring using digital tools and data loggers,
- * sustainable mechanisation solutions for small-scale and niche crop production,
- * smart orchard technologies and digital test environments.

Event formats ranged from guided field visits and machinery demonstrations to operational tests on working farms, factory visits, and study tours, with several activities embedded in formal university courses or lifelong learning offers. The table documents participant numbers per event, showing a total outreach of approximately 136–150 participants, with individual events ranging from small expert groups (3–7 participants) to larger farmer-oriented information sessions (up to 25 participants). This distribution reflects the intentional focus on small, practice-oriented learning settings, which proved more effective than large public field days in the fragmented agricultural landscape of South Tyrol.

Beyond knowledge transfer, the field-demonstration activities functioned as networking and exchange platforms, enabling direct interaction between farmers, students, engineers, researchers, advisory services, and industry representatives. Feedback collected through ex-post evaluations indicates very high satisfaction, particularly regarding the relevance of topics, the hands-on character of the demonstrations, and the opportunity to discuss real operational challenges.

Overall, Activity 4.1 achieved its objectives by grounding smart farming education in concrete practice, strengthening regional collaboration, and generating validated experience for the design of future courses and learning formats in mountain agriculture.

3 Results

Quantitative Indicators

Total number of field visits:	12
Activities as part of courses, excursions	3
Total number of participants	136 - 150

Qualitative Indicators

Ex-post evaluation by students and LLL, level of satisfaction: VERY HIGH ("got from direct survey")

Survey among participants regarding quality of training and information provided

- Interactions with external partners
- Networking
- Satisfaction, sustainability, technical skill level after training etc.
- Participation, interest
- Quality of exercises, training materials proofed
- Evaluation of teaching and training offers

4 Conclusion

The activities 4.1. were successfully realized and benefitted from the collaboration with other partners and projects.