



# 2023 ERIAFF ANNUAL CONFERENCE

## Green and Climate Transition Plans in agriculture and in agroforestry systems

**Group Digital / Precision Agriculture – Study Visit Programme**

NOI Techpark

**Monday, 22/05/2023**

14:00-16:00

Main contact: Fabrizio Mazzetto, Free University of Bozen-Bolzano

### **Agroforestry Innovation Laboratory**

The Agricultural Mechanics research group is involved in several activities centred on some of the problems of regional agriculture, especially those arising from mountain farming.

The strong focus of the laboratory on metrology enables:

- the research on specific problems of mountain farming;
- the development of appropriate solutions for the local operative context;
- the proposal of new certification tests for processes and equipment;

all toward the improved sustainability of the latter. In this direction, the partnership with local farmer associations and machine builders is a very important aspect and is greatly valued by the group.

### **Research Focus**

**Agroforestry Innovations:** identification of new products/processes to raise the environmental/economic yield of agroforestry productions in mountains (fixed/mobile utilities; machines for haying and harvesting; storage structures for products; new materials; logistics of transport; livestock facilities); energy and operative performances, safety and ergonomic conditions.

**Safety and Materials:** study of equipment, materials and working methods that increase safety conditions in agroforestry works and recreational activities (related to tourism and winter sports); prevention and protection from residual risks; personal protective equipment.

### **Research Areas**

**Performance of plant protection equipment:** the intense production of apples and winegrapes in the area involves a consistent use of plant protection products, which have a high risk of drifting outside of the treated area and pose risks to bystanders and ecosystems. An accurate measurement of the performances of the dedicated machines can shed light on which practices and conditions can improve the efficiency of treatments while safeguarding the local environment and aid in the development of new solutions.

**Machine stability in steep slopes:** custom-built indoor structure to test and certify, in a configurable environment, the stability characteristics of real-scale machinery such as tractors, tractor-implement combinations, small combine harvesters, small earth-moving equipment, etc.

**Engine performance:** the aim is to evaluate and improve the energy efficiency of tractor engines, both conventional and when employing alternative fuels. The equipment is compliant with OECD/ISO standards.

**Smart Agriculture:** development of electronic and mechatronic equipment for environmental, operative and field monitoring, compatible with Smart Agriculture applications and with Farm Information Management Systems.



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Tuesday, 23/05/2023

14:30 - 17:30

**Laimburg Research Centre**

Main contact: Walter Guerra, Laimburg Research Centre

**Lido Project:**

**LIDO Laimburg Integrated Digital Orchard** <https://lido.laimburg.it/it/>

A CENTER FOR DIGITALISATION IN FRUIT AND WINE-GROWING

With LIDO-Laimburg Integrated Digital Orchard, we created the base for the practical implementation, the testing and the public demonstration of existent and new technologies of research facilities and companies at a central location. These include automatic irrigation and fertilisation measures, innovative plant management methods, the integration of sensor technologies, advanced forecasting models, and decision-support systems. Additionally, the fields are equipped with a fixed spraying system. All the collected data are sent to a Cloud-based management system, thus enabling the remote control of operations on site.