

## **Agriculture 4.0: potential and challenges**

**Lorenzo Comba**<sup>1</sup>, Alessandro Biglia<sup>1</sup>, Paolo Gay<sup>1</sup>

<sup>1</sup> DISAFA, Università di Torino, Torino, Italy

Agriculture 4.0 aims to upgrade traditional production methods and agriculture strategies to an optimized value chain using a range of emerging technologies that enhance disruptive solutions at all stages of the agricultural production chain. This is particularly crucial in a world with a growing agri-food demands, as confirmed by challenges prescribed by the EU Green Deal and Farm2Fork strategies which are pushing farmers to increase the productivity and the efficiency of their practices. However, if compared to industry, agriculture is a more challenging sector due to the involved harsh, complex, and unstructured scenarios, which requires specifically conceived solutions. In this talk, we address the potential and challenges of agriculture 4.0, and the associated state of the art technological solutions. In this context, innovative sensors and data processing techniques are boosting the knowledge of the crop status, and the full electrification of agricultural machines and implements will open unprecedented opportunity to control the in-field operations, on the base of the real need of the crop.