



**Proceedings of the 53rd National conference of
the Italian Society for Agronomy**

**Resource management in the
innovation of the agri-food
systems**

Matera

Edited by

Marco Bindi
Giuseppe Di Miceli
Albino Maggio

Scientific Committee

Marco Bindi
Albino Maggio
Vittoria Giannini
Fileberto Altobelli
Daniele Antichi
Giuseppe Di Miceli
Elisa Marraccini
Alessia Perego
Domenico Ronga

Organizing Committee

Michele Perniola
Mariana Amato
Anna Rita Rivelli
Stella Lovelli
Daniele De Rosa
Giuseppe Mercurio

Società Italiana di Agronomia (SIA) www.siagr.it
ISBN: 978-88-908499-9-2

On-farm and plot experimentations of climate-smart agricultural practices in Northern Italy

by Elisa Marraccini | Vittoria Giannini | Gabriela Alandia Robles | Giorgio Borreani | Gemini Delle Vedove | Francesco Ferrero | Donato Loddo | Cristina Marzachi | Carmelo Maucieri | Tanja Mimmo | Carlo Nicoletto | Silvia Panozzo | Alessandro Peressotti | Gabriele Rolando | Luigi Sartori | Enrico Sturaro | Ernesto Tabacco | Massimo Tagliavini | Eren Taskin | Gaetano Roberto Pesce | Maurizio Borin | University of Udine | DAFNAE, University of Padua | University of Udine | DISAFA, University of Turin | University of Udine | DISAFA, University of Turin | IPSP-CNR, Legnaro | IPSP-CNR, Turin | University of Padua | Free University of Bolzano-Bozen | DAFNAE, University of Padua | IPSP-CNR, Legnaro | University of Udine | DISAFA, University of Turin | DAFNAE, University of Padua | DAFNAE, University of Padua | DISAFA, University of Turin | Free University of Bolzano-Bozen | Free University of Bolzano-Bozen | DAFNAE, University of Padua | DAFNAE, University of Padua

Abstract ID: 107

Topic: Climate

Presenter Name: Elisa Marraccini

Contribution: Post

Digital technologies like precision farming, artificial intelligence or prediction systems are essential to increase the efficiency in the use of resources. This is of primary importance in Northern Italy where climate change and price surges are affecting the sustainability of cropping systems. In this context, the Task 4.2.1 of the Italian Agritech National Center set up a network of farms, both experimental and commercial, in order to test in real conditions innovative and climate-smart agricultural practices, with a living lab approach. Thanks to a partnership of five universities and research centres, it was possible to extend a wide network of both plot experiments (PEs) and on-farm experiments (OFEs) with the purpose of deepening knowledge on some targeted resources: water, carbon, energy and/or a combination of them in cropping systems of Piemonte, Trentino Alto-Adige, Veneto, Friuli Venezia Giulia regions. So far, 7 PEs in the university experimental farms and 20 OFEs in partner farms are ongoing, all for a minimum duration of 2 years. The main topics were related to water management (10) and carbon management (4), to the nexus carbon-water (8) and to the nexus carbon-energy (5). The PE and OFE experiments were covering a wide range of topics: from the effect of cover crops on soil fertility in different agro-ecosystems, such as vineyards and arable crops, to the reduction of carbon footprint through crop rotation in mixed dairy farms. In several PEs and OFEs innovative cultivars and crops were tested such as: i) quinoa as an alternative for soil undergoing salinization in the Adriatic coastal areas, ii) drought-tolerant maize hybrids as a response to increasing summer droughts in Northern Italy, iii) different mixes of cover crops to test their ability to provide different soil ecosystem services. The results of these PEs and OFEs will be shared in the network, both in dissemination actions and demonstration activities, to increase the capacity building of the different stakeholders involved in the living lab facilities. Acknowledgements. This research was funded by the European Union Next-GenerationEU (PIANO NAZIONALE DI RIPRESA E RESILIENZA (PNRR) - MISSIONE 4 COMPONENTE

2, INVESTIMENTO 1.4 - D.D. 1032 17/06/2022, CN00000022), in particular Task 4.2.1. This manuscript reflects only the authors' views and opinions, neither the European Union nor the European Commission can be considered responsible for them.