



CLUB OF BOLOGNA

*strategies for the development of agricultural
mechanisation*



31th Members' Meeting of the «Club of Bologna

The challenges for Agricultural Mechanization

12-13 November 2022

Bologna, Italy

**Session 2 – CLIMATE CHANGE AND MECHANIZATION: WHAT IS
NEEDED IN INDUSTRIALIZED AND EMERGING COUNTRIES**

Introduction

Josse DeBaerdemaeker, Giuseppe Gavioli

Sustainability

Sustainability is nowadays more than just making things more sustainable for the planet.

Sustainability is now the big power to change, the great opportunity to evolve and transform how we do things in our lives and in business.

We recommend that the Club of Bologna continues to explore and study the various aspects of sustainability involving agricultural mechanization

Sustainability Actions Deployment

The main ways sustainability actions can be deployed in agriculture are:

- Protect and preserve land, water, and air
- Save energy (e.g., reduced or no-tillage)
- Move away from fossil fuels
- Implement precision agriculture
- Introduce AI and automation
- Apply circularity concepts and practices
- Minimize carbon release, maximize carbon capture

Sustainability and Resilience

- Is Resilience the new word?
- Resilience: being able to recuperate from shocks and negative impacts of climate change, such as severe storms and droughts.
- For smallholder farmers, these shocks can exhaust scarce resources of cash, seeds, and livestock.

We should include resilience in the Club of Bologna's future studies on the various aspects of sustainability involving agricultural mechanization.

ENERGY SAVINGS IN AGRICULTURAL MACHINERY AND MECHANIZATION

Edited by

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Institute of Agricultural Engineering, Milan University, Italy

A. GUIDOBONO CAVALCHINI

and

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Today's Session 2

We are glad to present today three relevant contributions to sustainable approaches in agricultural mechanization:

KNR 2.2 - A.I. in agriculture and farm machinery: discover new correlations and trends in big data collected by machines, by **Spyros Fountas** (*Agricultural University of Athens, Greece*)

KNR 2.3 – Fossil-energy-free technologies and strategies for EU farmers and solutions in the management of the farm, by **Thanos Balafoutis** (*Center for Research and Technology Hellas, Greece*)

KNR 2.4 – Renewable and low-carbon fuels for climate-smart EU ag-machinery: circular agriculture in action, by **Mario De Amicis** (*CNH Industrial*)

Spyros Fountas



Dr. Spyros Fountas is a Professor in Agricultural Engineering at the Agricultural University of Athens and Editor-in-Chief of the ELSEVIER journal Smart Agricultural Technology.

He holds an MSc from Cranfield University at Silsoe College UK in Information Technology in 1998, and a Ph.D. from Copenhagen University, Denmark in Systems Analysis on Precision Agriculture in 2004. He was also Visiting Scholar at Purdue University, USA.

He has been a Keynote speaker at several international conferences. He has coordinated three H2020 projects, Smart-AKIS, GATES, and currently OPTIMA on optimized Integrated Pest Management for precise detection and control of plant diseases. He is also participating in 15 other H2020-funded projects.

He is the author of more than 250 papers, including book chapters, journal papers, and conference papers, with 5900 citations (Google scholar, November 2022).

Thanos Balafoutis



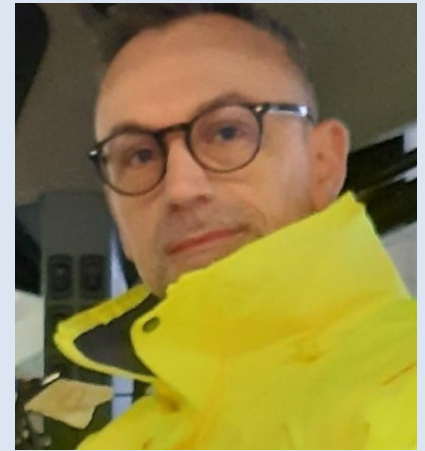
Athanasios Balafoutis is a Senior Researcher at The Centre for Research and Technology Hellas, Institute for Bioeconomy and Agrotechnology, Thessaloníki, Greece.

He got a degree in Natural Resources Management & Agricultural Engineering from the Agricultural University of Athens, Greece, an MSc in Agricultural & Environmental Engineering from Cranfield University, UK, and a Ph.D. in Biofuels from the Agricultural University of Athens, Greece.

He has 35 publications in the field of agricultural mechanization ranging on sensors, extended reality, smart use of energy, farming robots, crop protection, precision farming, rural electrification, and GHG emission mitigation.

He's a member of the European Society of Agricultural Engineers (EurAgEng), the International Society of Precision Agriculture (ISPA), the Institute of Agricultural Engineers (IagrE), the European Association of Agricultural Economists (EAAE), the Society of Agricultural Engineers of Greece (HelAgEng) and the Geotechnical Chamber of Greece (GEOTEE)

Mario De Amicis



Mario De Amicis has a Master's Degree in Aeronautic Engineering from the University of Naples and an MBA from the Alma Graduate School in Bologna.

He has been recently appointed Head of Electrification Portfolio Management at the Agricultural Division of CNH Industrial.

He held several key responsibilities within the Agricultural Division of CNHI: Head of Product Validation, Medium and Light Tractors Product Line Director, T7/Puma ranges Platform Manager.

Formerly Product Development Director at Carraro-Agritalia, he started his professional career at Fiat Auto with various roles: Product Marketing Manager, Manufacturing Assembly Unit Manager, Passive safety performance engineer.