**Bio:**

Pieter Blok is an Assistant Professor in Data Science and AI for Agriculture and Food at the Jheronimus Academy of Data Science (JADS). He grew up on a farm in Zeeland, Netherlands, and is therefore from an early age acquainted with agricultural production. After receiving his MSc in Agricultural and Biosystems Engineering from Wageningen University in 2011, he worked at Wageningen Research for almost 10 years as a contract researcher in Computer Vision. In 2018, he started his PhD research at Wageningen University and completed it with distinction in 2022 (cum laude). In 2023, he received the Young Professional Award from the European Machine Vision Association (EMVA) for his contributions to the development of a selective harvesting robot for broccoli. That same year, Pieter joined the University of Tokyo (Japan) as an Assistant Professor in Digital Plant Phenotyping. In 2024, he joined JADS, a data science institute of Eindhoven University of Technology and Tilburg University, located in ‘s Hertogenbosch. His main expertise is Computer Vision, Deep Learning and Agricultural Robotics. He likes to drive innovation at the intersection of technology and agriculture.

**Questions:**

What are the three biggest challenges facing the European agricultural sector?

1. Lack of skilled labor
Projections show the agricultural workforce is expected to shrink by 2% annually, falling from 17 million workers in 2020 to just 7.7 million by 2030.
2. Climate change
​Climate change poses significant challenges to European agriculture: rising summer temperatures, droughts in the south, floods in the north, and spring frosts in orchards and vineyards. In southern regions the yields of wheat, corn, and sugar beet could decrease by up to 50% by 2050.
3. Regulatory and geopolitical changes
Geopolitical changes, and EU and national regulations, makes it harder for farmers to make long-term decisions.

Is the private sector outpacing research in innovation?

In my opinion, this is not a black and white issue; there are private companies that are rapidly innovating, and some are reluctant to innovation. Similarly, there are scientific institutes that do not care about making their inventions applicable to agricultural practices, while others work closely with industry to successfully commercialize the innovations. What I have seen from my time at Wageningen Research and The University of Tokyo is that applied institutes have a more open approach to applying new innovations in sensor technology (cameras, LiDARs, etc) and AI / deep learning algorithms. Compared to the companies I have worked with, there is usually a slower adoption rate because of existing business processes and policies. Of course, at the enterprise level, new innovations usually has to be integrated into larger, pre-existing products, leading to a more reversed adoption. In conclusion, I don't think the private sector is outpacing research in terms of innovation. The recent failures of AgTech companies worldwide prove that their innovations has yet to bear fruit for sustainable business operation.