

Resource scarcity, especially water

Alternative (non-agricultural) uses of farmland that offer increased profitability or carbon capture

Food v Fuel v Feedstock

Competition for natural resources:

Food without deforestation

Consumer awareness of the impact of agriculture on the environment, including supply chain, food miles, sustainability, organic, and animal welfare

Increasing food waste: post-harvest and through the supply chain, but predominantly by the consumer

Conversion of food waste into energy

Global rise in meat consumption

Consumption patterns:

Awareness of the impact of meat driving cultured meat, plant-based protein and other alternative proteins

Cellular agriculture and industrialisation of meat

Automation and robotisation

Innovative farming including: hydroponics, aquaculture, aeroponics

Technological change and hyperconnectivity:

Social media hyperconnectivity is driving trends in consumption patterns

Wealth of data available from remote satellite monitoring, drones and ground-based sensors

AI delivering agronomic insights



Global population increase

Increasing lifespans, increased urbanisation, economic migration

More food needed from less farmland - productivity (calories/acre) needs to increase

Demographics:

Farms are getting bigger and pushing out smallholders, leading to monoculture

Farmers are getting older, and younger generations are moving away from agriculture, driving a need for automation

Net zero targets: the challenge and potential

Extreme weather events reduce yields

Movement towards more controlled environment agriculture notably indoor, vertical farming

LULUCF* as the only real carbon-offset mechanism for what really cannot be de-carbonised

Altered growing patterns, new pest profiles

Recognition of the importance of sustainable and regenerative agriculture

Climate change:

*LULUCF = Land Use, Land Use Change and Forestry