



How can digital and precision technologies contribute to a more sustainable agriculture?

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“Sustainable solutions to protect crops”
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| Digital and precision technologies can ...

- help farmers to work more precisely and efficiently;
- increase the sector's sustainability performance and competitiveness;
- make the job of a farmer more attractive to younger generations;
- increase transparency for the consumer;
- can support all types of farming.





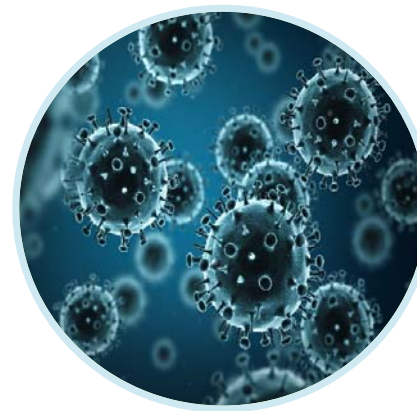
2030 Targets for sustainable food production



Reduce by 50% the overall use and risk of **chemical pesticides** and reduce use by 50% of more hazardous **pesticides**



Reduce **nutrient losses** by at least 50% while ensuring no deterioration in soil fertility; this will reduce use of **fertilisers** by at least 20 %



Reduce sales of **antimicrobials** for farmed animals and in aquaculture by 50%

**Input
+
Emission
reduction**





2030 Target for pesticides



Reduce by 50% the overall use and risk of **chemical pesticides** and reduce use by 50% of more hazardous **pesticides**

Precision farming can help to reduce the amount of pesticides allowing for more tailored and precise application.

Challenge:

Assessing the emission reduction potential of certain digital technologies.



2030 Targets for sustainable food production

**Structure
+
Land use
patterns**

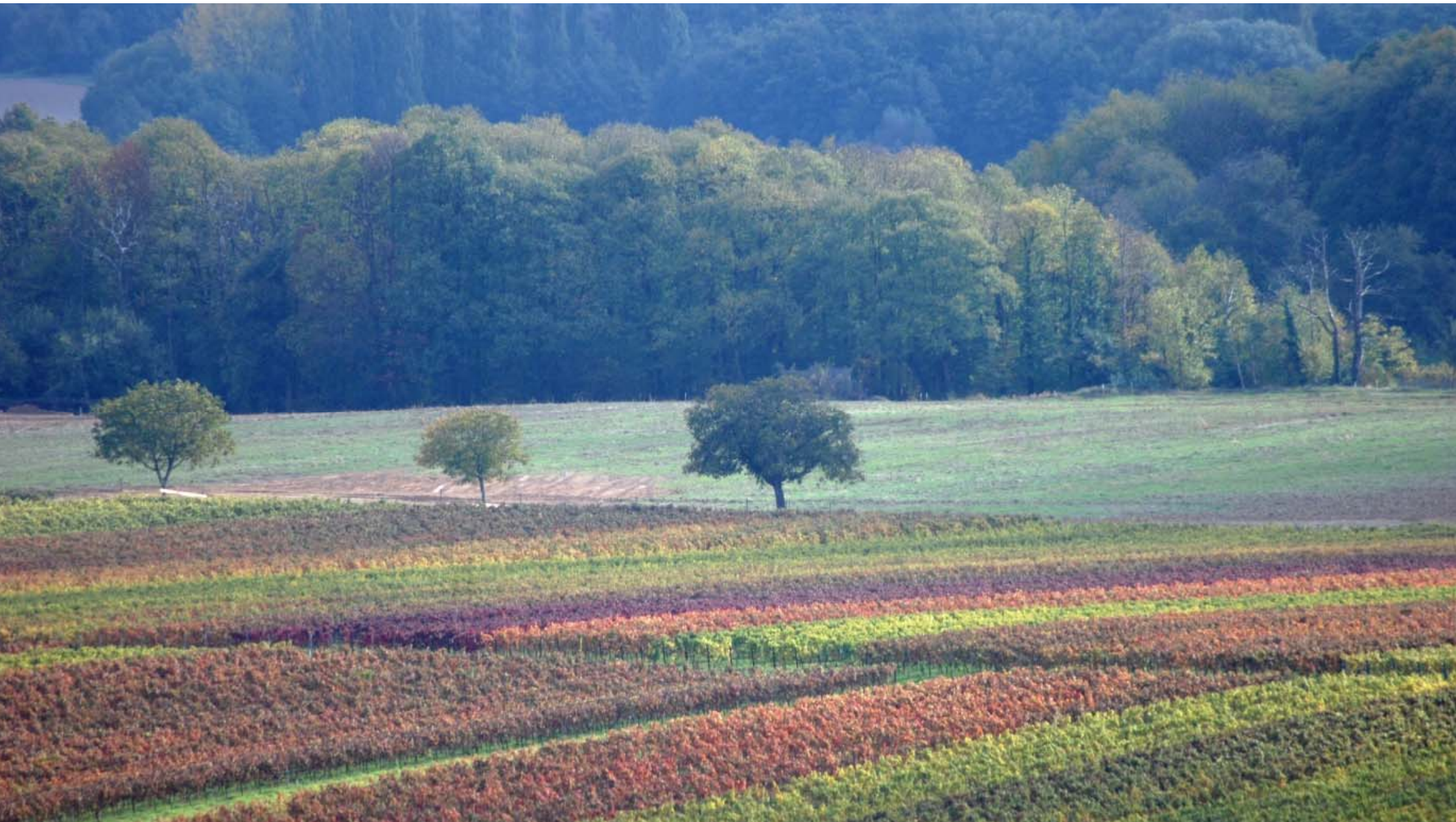


Bring back at least
10% of
agricultural area
under **high
diversity**
landscape
features by 2030



Achieve at least
25% of the EU's
agricultural land
under **organic
farming**





2030 Targets landscape diversity

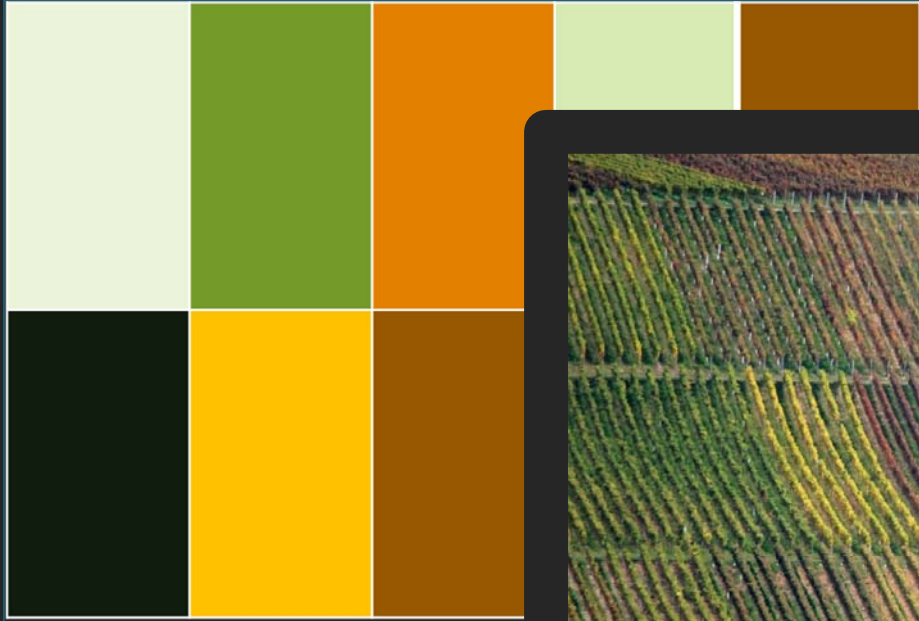
Digital technologies and precision farming cannot replace actions to increase structural diversity.

Digital technologies can help to manage agricultural land with high structural diversity more cost-effectively.



Bring back at least
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| The role of data and data technologies

- The effectiveness of digital technologies strongly depends on **data and data technologies**.
- Information can also be capitalised without (expensive) digital technologies.
- **Data of higher precision** tends to be more expensive, e.g. generated through sensors.
- Farm management benefits from **reference data** from/ generated on other farms.



Digital technologies for all type of farms

Digital technologies can support:

- Conventional farms
- Organic farms
- Agro-ecological farming approaches
- Structurally large/ small farms
- Farms with strong/ weak financial and human capacities
- *Farms without internet connectivity?*



| Digitalisation as “enabler”

Digitalisation is one key to achieve environmental and socio-economic sustainability ambitions.

But the potential of digitalisation is not fully exploited due to e.g. gaps in:

- Infrastructure (e.g. broadband)
- Awareness of digital technologies
- Digital skills
- Cost-effectiveness of some technologies
- Trust of operators in technology and data sharing



| Digital transition - Challenges to be met *(a selection)*

- **Ability to monitor and benchmark** – Lack of data on the uptake of digital technologies in the agricultural sector.
- **Avoiding a digital divide** between regions and types of farms.
- Preparing rural communities for **changes in employment structures** and for making use of digital technologies.



| Exploiting the potential of digital technologies

- Providing data and facilitating data sharing
- Strengthening broadband capacities
- Supporting the development of digital skills
- Enabling the exchange of information and experiences
- Providing advisory services
- Facilitating investments
- Promoting targeted Research & Innovation



| The role of R&I in digitalisation

R&I in Agri-Tech has pivotal role to boost effectiveness, acceptance, and uptake of digital technologies, e.g. by

- increasing cost-effectiveness of digital solutions,
- enhance performance assessment opportunities,
- developing technical solutions facilitating trust in data sharing.

Important aspects

- Demonstration effect (e.g. through pilot projects)
- Need-driven and end-user orientation
- Technical innovation in combination with business models and social innovation



| Selected policy instruments post 2020

Digital Europe Programme

- Common European Agriculture Data Space
- Testing and Experimentation facilities for AI in agri-food
- Digital Innovation Hubs

Horizon Europe

- Tailored Horizon Europe themes
- Horizon Europe Candidate Partnership “Agriculture of Data”

Common Agricultural Policy

- European Partnership for Agricultural productivity and Sustainability (EIP-AGRI)
- Measures supporting capacity building among farmers and their advisors



Thank you



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