

# DIGITALIZATION OF AGRICULTURE

*Business messages for OECD work on Emerging issues from the digitalization of the agricultural sector*  
August 2021

Digital technologies offer as yet untapped potential to improve policy and market performance, and contribute in concrete ways to productivity and environmental sustainability across the food value chain. Agriculture and food systems have been historically co-evolving together with technological progress. In order to ensure agro-food security for our societies' growing demand, support livelihoods in the food supply chain, and ensure progress towards the 2030 sustainable development goals - including on climate and biodiversity - we call on OECD and governments to support our businesses in their efforts to adopt new digital technologies.

While earlier stages of agricultural technological progress introduced mechanization, more precision agriculture, including the use of fertilizers and agrochemicals, and more resilient seed varieties, it is a cross-cutting priority for Business at OECD and its members to create, use, share, combine, and analyze agricultural and other data in digital format to improve the sustainability, productivity and resilience of agriculture and food systems.<sup>1</sup>

New digital technologies also have the potential to enhance agro-food trade and improve food security over the coming decade by enabling more efficient and transparent agricultural value chains. Particularly in the context of ongoing debates on supply chain resilience, challenges for trade and supply chains are often related to how data are collected, analyzed and shared. Hence, enabling digital trade and the movement of data is a crucial building block that can make our supply chains more efficient and more resilient at the same time.

WTO estimates that adoption of digital technologies by agricultural actors can lead to increases in production and increase trade growth by 31 to 34% by 2030.<sup>2</sup> This can mostly be achieved by the help of digitalization, which enable better management of firms, better risk management, mitigation and adaptation to the impacts of climate change, increase market opportunities for all, improve administrative processes, collecting and tracking product data throughout value chains and help in improving compliance with safety standards.

For the agricultural sector to utilize the benefits of new technologies and engage more effectively in global trade and value chains, OECD and governments should consider how to collectively address a number of challenges to facilitate digital trade and the overall digitalization of the agricultural sector. It is also critical to illustrate what are the key components of the enabling environment for digital adoption on agricultural practices and to analyze whether current government innovation policies for agriculture are fit-for-purpose in the context of digital innovation.

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<sup>1</sup>OECD (2019), Digital Opportunities for Better Agricultural Policies, OECD Publishing, Paris, <https://doi.org/10.1787/571a0812-en>.

<sup>2</sup> WTO (2018), 2018 WORLD TRADE REPORT: The future of world trade: How digital technologies are transforming global commerce, World Trade Organization, Geneva, <http://www.wto.org>.

Business at OECD members suggest that the following aspects should be considered and addressed to strengthen the digitalization of the agricultural sector and promotion of new technologies:

- **Promoting agricultural capacities and supporting development of necessary skills**  
Wider adoption of new technologies is hampered by a lack of digital skills. Farmers may be lacking the necessary capacities to identify, adopt, analyze and successfully use digital tools, or be constrained by inadequate connectivity infrastructure. Many digital platforms and tools require an understanding, awareness and trust of applications and the possibilities offered by such platforms. The OECD and governments should promote programs aimed at training farmers and agricultural workers to uptake these innovations.
- **Enabling digital infrastructure for agriculture**  
The capacity to boost production and create value in the food systems using digital technologies heavily depend on the access to data infrastructure for agriculture as all uses of digital technologies (data collection and analysis services, regulatory environment, digital platforms etc.). Better agricultural and agri-environmental policies are part of a coherent approach to digitalisation of the sector as a whole. Governments have an important role in building data infrastructure, through widening access to existing data relevant to agriculture, supporting connectivity of a data collection infrastructure, promoting technology development and other.
- **Promoting an enabling policy and regulatory environment**  
Confusing and fragmented data governance arrangements may negatively affect farmers' willingness to adopt new technologies, because of concerns over data privacy and confidentiality. Persisting issues involve interoperability and data quality standards of different regulatory regimes, restrictions to cross-border data flows and challenging programs and policies to make use of digital tools. For investment in innovation, its adoption and promotion, governments play an important part in developing a welcoming policy and regulatory environment and improving access to agricultural data.
- **Highlighting positive effects of digitalization**  
It is important to explore the enabling environment necessary for the development, adoption and diffusion of digital tools to support better decisions in relation to risk management and natural resource management, helping to achieve a more productive, sustainable and resilient agriculture as well as the role governments may play in supporting the deployment of these tools. In this context, the OECD and governments should promote the positive effects digital technologies can have on farmers to help managing their risks and increase farmers connectivity, market access and more effectively engage in global trade and value chains.
- **Involving all actors in digitalization**  
Communication and co-operation is particularly important in order to ensure uptake and relevance, while preventing unintended consequences on all stakeholders. New technologies have to be designed and implemented taking into consideration the user needs and feedback from all stakeholders. OECD work in identifying key stakeholders involved in digitalization process in agriculture and exploring how the linkages and interactions between these actors are redefined by digital technologies should be further complemented with suggestions to further enhance such cooperation.



***Business at OECD (BIAC)***

13-15 Chaussée De La Muette

75016 Paris

France

[contact@biac.org](mailto:contact@biac.org) | [@BusinessAtOECD](https://www.businessatoecd.org) | [www.businessatoecd.org](http://www.businessatoecd.org)

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