Field of the Future

A *Business at OECD* Campaign

Roundtable Statement

Global policies to enable the digital transformation of agriculture and contribute to addressing climate change challenges

BUSINESSatOECD

Business at OECD (BIAC) speaks for business at the OECD. Established in 1962, we stand for policies that enable businesses of all sizes to contribute to growth, economic development, and prosperity. Through *Business at OECD*, national business and employers federations and their members provide expertise to the OECD and governments for competitive economies, better business, and better lives.

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The agricultural crop production landscape is undergoing a transformative evolution driven by the progress in data science, automation, and application technology. Digitalization emerges as a pivotal catalyst in addressing the key challenges within agriculture, such as meeting the growing demand for food while addressing climate change impacts, safeguarding environmental integrity, and ensuring sustainable livelihoods in remote and rural settings.

With digital farming tools, farmers can combine their expertise and knowledge of the land with digitally enabled tools that collect and make sense of data, thereby providing them with actionable insights that allow for better decision-making.

The digital transformation of agriculture has and will continue to have a fundamentally positive effect on how natural resources are used to grow more food. It provides opportunities for agri-food systems to monitor and manage global soil, climatic, and genetic resources, and address information asymmetries among the stakeholders along the agri-food value chains. It serves as a foundation for more efficient, equitable, and environmentally sustainable economic development.

As extreme weather events become more common, data collection and analysis allow for a more granular and timely understanding of the causes and effects of such events. Through insights gleaned from data, we can better anticipate risks to agriculture and more adequately prepare for future environmental disasters.

Considering the significant prospects it offers and the hurdles to overcome, policymakers should strategically prioritize digital farming on their agendas. Setting the right course of action has the potential to propel the adoption of technology, foster innovation, and pave the way for a sustainable evolution in the agriculture sector.

As such, *Business at OECD* (BIAC) has launched a new campaign centered around the digital transformation of agriculture, entitled Field of the Future. The campaign was launched on 27 November 2023 at a high-level roundtable bringing together stakeholders from the public and private sector. The following is a summary of the roundtable discussions.

Business at OECD **(BIAC) calls on governments to develop a common political vision and implementation plan (a National Digital Farming Strategy and Action Plan) that ensures coherence and a shared commitment across the diverse set of policies and government institutions that can enable the digital transformation of agriculture.**

At the same time, businesses are ready to do our part, and to work with governments, the farming community, and other stakeholders to support the digital transformation. To overcome existing barriers to adoption and enable digital farming technologies, national strategies should:

1. **Support the expansion of the needed digital public infrastructure.** Rural areas worldwide remain unconnected to sufficiently reliable digital infrastructure which is foundational to the use of digital farming tools. Governments should work to support the needed investments to facilitate the development and rollout of broadband and 5G capabilities for example via simplified planning and approval procedures, as well as co-investment programs to enable rural connectivity.

2. **Ensure that the regulatory environment is future-proof,** considering the opportunities within the digital transformation of agriculture.

    - **A key foundation for precision agriculture is the development and promotion of digital labels,** where the conditions of use are digitalized in machine-readable formats and labels are structured and harmonized to the extent possible. From the business perspective, we call for the development of common global terminology for pest control product labels with the aim of increasing a common understanding of labeling requirements with regard to standardization and helping regulatory authorities to modernize labeling processes among OECD members.

    - **Enhance accessibility to innovation through the reduction of red tape.** Often farmers' access to innovation is inhibited through excessive bureaucratic red tape. Instead, regulations should complement the work done by farmers, thereby helping them maintain the scale and speed at which they adopt new technologies, increasing their productivity. For example, governments can explore a tiered regulatory approach based on farm size and technology type, ensuring that regulatory burdens are proportionate to the scale and impact of the operation. Regulatory sandboxes could also be used, which will allow farmers and tech companies to experiment with new solutions in a controlled environment with relaxed regulations, facilitating innovation while still ensuring safety and compliance.

    - **Develop robust policies for data privacy and security** particularly as AI becomes more prevalent in agriculture. Through regular consultations with farmers, technology providers, and other stakeholders, governments should develop policies that strike the balance between openness vs. control and protection, thus enabling the greatest amount of spill-over benefits between firms and across the economy, while preventing socio-economic harm and loss of profit through the upholding of privacy and confidentiality as necessary. At the same time, ways to integrate new policies harmoniously with preexisting frameworks should be carefully explored.

    - **Endorse data standardization and harmonization.** Consortia like AgGateway, the American Society of Agricultural and Biological Engineers (ASABE), and the International Organization for Standardization (ISO) among other relevant schemes and organizations are leading the action on defining data standards. These standards need to be pursued by regulators also, to encourage large-scale adoption and interoperability.

3. **Play a role in enhancing farmers' access to digital technology.**

    - **Invest, with the private sector, in farmers' insurance mechanisms.** With the proper insurance mechanisms in place, farmers are more likely to adopt innovative practices, thereby increasing yields and reducing food waste. To facilitate this, governments can provide subsidies for premiums or partner with private insurers to develop products tailored for small-scale farmers, ensuring affordability and accessibility.

    - **Encourage the growth of micro-entrepreneurs who work with farmers.** Growers are not necessarily the only enterprises to adopt data and data driven decision making, particularly in smallholder markets. Markets across the Asia-Pacific, Africa, and the Middle East in particular are witnessing an emergence of micro-entrepreneurs and service providers (e.g. drone operators) who will carry out the operations on behalf of the growers. Governments should ensure positive societal and regulatory frameworks that encourage this growth.

4. **Promote capacity and skill building of farmers, the youth, and regulators.**

    - **Adopt farmer-centric training initiatives.** Governments should play their due role in gaining insights into the barriers farmers face in utilizing digital technologies. These initiatives should attempt to address the diverse needs of different farming communities. Instead of "mandating" the use of specific technologies, farmers should be helped through incentives (e.g. tax credits, education programs) in pursuing and using digital tools that are fit for their unique needs.

    - **Invest in educational programs focused on digital tools, including artificial intelligence (AI), especially for the youth.** Our future generations' engagement in understanding the value and opportunities that lie within the agrifood sector is pivotal to its growth. Technical and Vocational Education and Training (TVET), while more prominent in the fields of engineering, manufacturing, or electricity, could be adopted to a wider extent in agriculture to ease the uptake of new technologies among the youth. These training programs can also be developed in partnership with universities to leverage knowledge in this area and transfer technology to all relevant actors along the agrifood value chains, including regulators.

    - **Focus on upskilling and upscaling the regulators themselves,** e.g. implementing digital application processes to facilitate administrative burdens, using digital monitoring of field conditions, countering counterfeit product use, and enforcing compliance through technology.

5. **Promote collaboration between business and government, among governmental ministries, and among private sector stakeholders.**

    - **Increase communication and collaboration with the private sector with regards to legislation that governs agriculture.** Robust communication channels should be established so that farmers and agribusinesses can anticipate and, where appropriate, inform needed legislative changes. More broadly, the sheer scale of the opportunities and challenges for the digital transformation would be best addressed by on-going collaboration across the public and private sectors.

    - **Further boost the effectiveness of public-private dialogue** through prioritizing agri-food as an essential sector of strategic importance, building "crisis" trigger mechanisms allowing for immediate flexibility in case of supply chain blockages and shortages, and showing political and economic leadership at the global stage, creating opportunities for trade, business and aid.

- **Establish cross-sectoral partnerships with other government ministries** (e.g. energy, environment) to enhance the coherence of public-private efforts undertaken in the digitalization of agriculture and ensure that truly sustainable agriculture practices are emphasized in the government-led green transition agenda.
- **Potentiate the agrifood value chain, focusing on farmer-industry relationships.** The connection between farmers and the food and beverage industry has long been a solid foundation for a thriving market for agricultural producers, both locally and internationally. Given the current challenges posed by climate change such as price volatility, it is crucial to strengthen the collaboration between farmers and the various stages of the supply chain. This means paying more attention to how farmers interact with and sell to the food and drink manufacturing industry. By doing so, we can ensure a more resilient and effective agrifood value chain.
- **Build a technology ecosystem built on voluntary data sharing between farmers.** Farmers collecting data should be able to share, sell, and buy data on a market, which in turn incentivizes consistent data collection, standardization, and inclusion. The data collected in the agriculture sector often tend to be sensitive and farm-specific, which partly accounts for the current fragmentation within the ecosystem, as well as between each individual farm. However, the role of data will become only more significant as we invest further into the digital transformation of agriculture, with tangible insights and trends to be gleaned within. As we are still at the outset of envisioning this data-sharing ecosystem, governments should enter such discussions and help design the first efforts toward enhancing coherence along the agriculture supply chain. For reference, there are instances where the agriculture value chain has come together to ensure a responsible and trustworthy exchange of data, such as the EU code of conduct on agricultural data sharing by contractual agreement or the American Farm Bureau Federation's Privacy and Security Principles for Farm Data, as well as initiatives such as Ag Data Transparent.

Business at OECD (BIAC) will continue to support the digital transformation of agriculture through this campaign and would welcome partnerships with the OECD, specifically on national digital farming strategies. A joint BIAC-OECD workshop will be explored, where discussions could take place on what national strategies for digital agriculture should look like and what role should be played by the private sector; at the same time, both governments and businesses should continue their active dialogue with farmers, academia, the youth, and civil society.

Notes

BUSINESSatOECD

Business at OECD (BIAC)
13/15, Chaussée de la Muette, 75016 Paris
Tel: +33 (0) 1 42 30 09 60
businesatoecd.org
@BusinessatOECD