Declaration

A smart and sustainable digital future
for European agriculture and rural areas

The EU agricultural sector is one of the world leading producers of food, guarantor of food security and quality and provider of millions of jobs for Europeans. Yet it faces many challenges. There are environmental pressures, relating to climate change and loss of biodiversity, and there is a need for sustainable and efficient management of resources such as water, soil, biodiversity and energy. Farms have to produce traceable and quality products at affordable prices, as close to the end consumer as possible, and farm revenues are under pressure. Furthermore, the farming population is ageing and in some Member States there is a shortage of farm labour. The lack of a digitally skilled workforce is also slowing down the modernisation of the sector.

Digital technologies such as artificial intelligence (AI), robotics, blockchain, high performance computing (HPC), Internet of Things (IoT) and 5G have the potential to increase farm efficiency and improve production, and also to contribute to making farming systems more sustainable from an economic, social and environmental point of view, as it is the case in other sectors.

Such technologies can optimise all types of farming, enable better decision making, and reshape the functioning of agri-food markets. Increased use of digital technologies will also have a positive impact on the quality of life for farm workers and the rural population, and may attract a younger generation to farming and rural business start-ups.

However, the use of digital technology in agriculture and rural areas in the EU is, on average, low. The lack of information about existing technologies, the lack of digital skills and the limited availability of reliable cost/benefit analyses of the new technologies are challenges to increased investments in digital applications. In many cases, research and innovation are still required to develop new solutions. In other cases, the basic infrastructure, such as broadband or access to other high-speed internet connections, is partly missing.

Rural broadband deployment varies significantly across the EU. At the end of 2017, only 47% of rural areas had fast broadband connectivity, which means that some rural communities are not able to reap the full benefits of the social and economic integration that digitalisation brings. This is one of the factors contributing to depopulation in rural areas and an increase in the average age of the rural population. Fast connectivity for a fair price has the potential to open up new possibilities for online work, commerce, interaction with public services and remote health monitoring and services. Digital technologies can act as a lever that enables Smart Villages[1] to become more agile, make better use of their resources and improve the attractiveness of rural areas and the quality of life for rural inhabitants.

A successful digitalisation of rural areas entails an integrated approach that addresses the capacity of local communities to harness their digital future. The deployment of broadband should therefore be underpinned by a strategy aiming on the one hand to improve the capacity of public administrations to invest efficiently in broadband projects, and on the other hand to

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[1] https://ec.europa.eu/agriculture/sites/agriculture/files/rural-development-2014-2020/looking-ahead/rur-dev-small-villages_en.pdf

enable all citizens and local stakeholders to take up digital technologies. Such an integrated approach is key to the rolling out of fully-fledged services in sectors like e-governance and e-health, and consequently, to increasing the quality of life and tackling depopulation in rural areas.

In its Communication on the Future of Food and Farming[2] the European Commission has acknowledged that the common agricultural policy (CAP) should enable the EU farming sector to address environmental care, biodiversity and natural resources protection, and develop the bioeconomy, thus strengthening actions to fight climate change, improve conditions in rural areas, and boost health and employment. The Communication has also recognised the essential role of the CAP in fully connecting farmers and rural areas to the digital economy.

The CAP, in parallel to the European Structural and Investment Funds, offers great potential to support digital solutions to these challenges for the farming sector, rural areas, and the bioeconomy. The Commission Communication on Artificial Intelligence for Europe[3] has identified agriculture as one of the key application areas where targeted investments are necessary in order to achieve those objectives. The EU Coordinated Plan on Artificial Intelligence[4] also provides for investments in platforms and large-scale pilots integrating AI and robotics in agriculture.

Declaration

We, the Member States of the European Union signing this declaration, recognise the importance of addressing without delay the economic, social, climate and environmental challenges facing the EU's agri-food sector and rural areas. We highlight the necessity to encourage an evolution of farming systems towards more resilience and resource efficiency in the long term, and note the potential of digital technologies to help tackle such challenges.

Technologies such as artificial intelligence, robotics, blockchain, the Internet of Things, high performance computing and fast broadband, including 5G, are already causing profound transformations in our economies and societies, and will be particularly critical for smart farming and rural areas. Europe has very valuable assets to build on, such as our strength in robotics for precision farming and CAP implementation systems based on digital data management solutions.

Digital technologies can improve quality of life for all inhabitants in rural areas and boost the competitiveness of European farms and rural businesses, including small ones. They can also strengthen the functioning of the single market and the socio-economic cohesion process. We believe that realising the full benefits of the digital transformation in the agricultural sector is only possible if such technologies are available everywhere, and adopted by all farms and rural populations across Europe. Ubiquitous, high performance digital connectivity is a prerequisite for the availability and take up of state-of-the-art digital technologies and services in rural areas.

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[2] COM(2017) 713
[3] COM(2018) 237 final
[4] COM(2018) 795

Digital technologies are changing business models in the agri-food sector and for other rural businesses, creating challenges but also opportunities for sustainable jobs and growth in rural areas. We are determined, therefore, to create the necessary conditions so that all workers in the agricultural sector have an opportunity to acquire the skills needed for the smart farms of the future.

The use of digital technology should be demand driven and not driven by technology itself. The actions we intend to take will bring benefits and will be cost-effective.

This declaration takes note of the Communiqué 2019 of the Berlin Global Forum for Food and Agriculture[5] and aims at contributing to progress towards a smart and sustainable future for European agriculture.

We will work together to:

Strengthening support for research

- support digital solutions for smart farming that help farmers to enhance their resource efficiency, are good for the productivity of the farms, help to reduce the pressure on environmental resources such as soils, water and biodiversity, and contribute to the development of the bioeconomy;

- stimulate the use of digital technologies in rural areas in order to improve service delivery, quality of life, business opportunities and innovation capacities, including the development of innovative business models and innovation ecosystems that take advantage of the digital transformation;

- keep Europe at the forefront of progress in smart farming, by increasing investments in research and innovation in digital technologies, while covering also socio-economic, agronomic and environmental aspects and aiming for resource efficient systems, and focusing on agriculture as one of the key areas for artificial intelligence in line with our commitments made in the Declaration of Cooperation on Artificial Intelligence of 10 April 2018;

- support research, development and innovation actions aimed at achieving improved food traceability through the use of blockchain technologies in agriculture and throughout the food system, in keeping with the goals announced in the Declaration of Cooperation on blockchain of 10 April 2018, notably via the ongoing work on the European Blockchain Partnership (to which relevant agricultural stakeholders such as the EIP-Agri will be invited);

- give priority to solutions suited to the typical European farm structures based on the family farm model, which require technologies that bridge the technical and economic

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[5] https://www.bmel.de/SharedDocs/Downloads/Landwirtschaft/Welternaehrung/GFFA_2019_Kommunique_EN.pdf?__blob=publicationFile

constraints of small-scale operation in production and marketing, thus limiting the risk of digital divide in the sector between and within Member States;

Establishing an innovation infrastructure

- set up a Europe-wide innovation infrastructure for a smart European agri-food sector, by taking the following actions:

  o help the European Commission to identify at least five large-scale reference experimentation and testing facilities across Europe, in line with the actions we have agreed on in the Coordinated Plan on Artificial Intelligence, to serve as a common resource for all European stakeholders to validate new smart solutions in real settings and networking these reference sites with existing experimentation and testing facilities;

  o build on ongoing initiatives such as the SmartAgriHubs network[6] and ensure that agriculture is covered as an area of expertise in at least one digital innovation hub in each Member State, which could be a dedicated agri-food digital innovation hub or a more general one;

  o develop a network linking the dedicated agri-food digital innovation hubs making cutting-edge digital technologies and specialised services for agriculture available for local farming and food production ecosystems, including small-scale farms, throughout Europe;

  o close the loop by enabling cooperation between the network of dedicated agri-food digital innovation hubs and the more general network of digital innovation hubs;

  o help all farmers and rural populations to play their full part in the digital future of agriculture by investing in upskilling, including through short-term training schemes, which could also take place online, to be developed by the dedicated agri-food digital innovation hubs as well, and linking up such upskilling efforts with agricultural knowledge and innovation systems (AKISs) as will be set out in the CAP Strategic Plans proposed to be established by the Member States, and supported by the advanced skills scheme in the Digital Europe Programme;

  o encourage the agri-food sector to take full advantage of the AI4EU platform for AI on demand, which will facilitate access to specific expertise in AI, data repositories, computing resources, tools and algorithms, and training opportunities in advanced digital skills;

  o identify and implement new means of supporting and participating in IoT projects in agriculture, in particular with respect to large-scale IoT pilots in

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[6] SmartAgriHubs - Connecting the dots to unleash the innovation potential for digital transformation of the European agri-food sector (https://cordis.europa.eu/project/rcn/218572/factsheet/en)

farming and to specific pre-requisites of IoT in agriculture such as low-power wide area wireless networks;

o where deemed appropriate, revise national broadband plans with the aim that available administrative, regulatory and funding measures, including those financed at EU level through the European Structural and Investment Funds and the European Agricultural Fund for Rural Development, be fully exploited to achieve full deployment of broadband connectivity in rural areas in line with the Gigabit Society objectives by 2025 and the Action Plan for Rural Broadband, ensuring adequate resources for national and (where applicable) regional Broadband Competence Offices (BCOs) to participate actively in the exchange of information and best practices;

o make the best use of the European Innovation Partnership on agricultural productivity and sustainability (EIP-Agri), to establish the area of digital innovation as a cornerstone of the future agricultural innovation environment;

o link up with ongoing and upcoming initiatives on Smart Villages to encourage the development of multi-level strategies for the digitalisation of rural areas with a people-centred approach, strengthening synergies between funding instruments;

Creating a European dataspace for smart agri-food applications

- facilitate the cross-border pooling and sharing of agricultural data between farmers and throughout the value chain by promoting relevant platforms and databases taking into account the stakeholders-led Code of conduct on agricultural data sharing by contractual agreement;

- identify, in collaboration with the Commission, and open up high value datasets in categories such as geospatial, environmental/climate/Earth observation and meteorological, in line with the recently agreed Directive on Open Data and the re-use of public sector information, in order to help develop common databases and to promote AI powered precision farming solutions;

- make full use of European space programmes (EGNOS and Galileo) and the Earth observation programme (Copernicus) for the accurate and efficient operation of unmanned aerial vehicles and autonomous agricultural machinery, and for data-driven decisions relating to agricultural operations;

Maximising impact
- expand ongoing initiatives to support the **CAP's transition towards a result-based policy** by:

o drawing up the CAP Strategic Plans, proposed to be established by the Member States, as coherent and ambitious plans that complement the activities mentioned in this Declaration, in support of the CAP's cross-cutting objective

of modernising the sector by fostering and sharing of knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging their uptake;

- o working on digital tools for a simplified and effective implementation of the CAP, notably monitoring of agricultural areas using satellite, aerial data or other source of information;

- o taking proper account of sustainability gains from investments in these new technologies in designing the financial structure of the CAP Strategic Plans;

- o increase CAP administration efficiency, notably in sharing geospatial information among public administrations;

- unleash the full potential of European agriculture by facilitating the deployment of digital technologies in agriculture and rural areas by means of **strengthening the capacity of the Europe-wide technology infrastructure for a smart agri-food sector**, using instruments such as those available under the Digital Europe programme, the European Structural and Investment Funds, the European Agricultural Fund for Rural Development (EAFRD) or the cohesion policy programme proposed, subject to agreement on the next multi-annual financial framework;

- use the **Digital Europe Programme** to support the setting up of digital innovation hubs, testing and experimentation sites, data spaces and training programmes in the smart agri-food sector.

We, the signatories of this Declaration, commit to a regular assessment of the achievements and progress made on the goals above and on the adoption of the appropriate related actions, within the existing budgetary frameworks. We will work together to facilitate the actions agreed in this Declaration and to monitor their implementation.

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Done in Brussels on 9 April 2019 in one original in the English language.