

D 6.4 Regulatory and Policy Framework Analysis

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1 Executive Summary

Digital Transformation of the economy is a reality and like in other sectors, agriculture and rural areas can make better use of new technology and knowledge, in particular of digital technologies. Digital Transformation in agriculture as a cross-cutting issue have different links to different policies and regulations that at EU level framed within the EU Digital Agenda.

These regulations are being developed in parallel to the Digital transformation of the sector that DEMETER is promoting, so it can be considered as an opportunity to consider different findings along the proposed pilots.

Digital transformation will have a positive impact on the sustainability of EU agriculture, although the opportunities raised by these technologies leads to the development with the participation of the sector.

Data governance is being tackled both from a agricultural sector self-regulatory approach promoted by COPA-COGECA that set the basis for the relations among different actors involved in the management and use of data and also from the EU institutions that promotes data spaces and data protection aspects to allow an enhanced framework for data management and use looking to solve aspects like interoperability, consistent and robust data availability, re-use and the interoperability , which will be impact also in the organizational and institutional governance of the different actors operating in the system.

In the EU agriculture there is a strong variability of farm structure typologies, with a majority of Small and medium family farms, that as stated in the CAP regulation for 2021-2027 that will need a special protection and specific measures to allow the Digital Transformation and avoid the increase of the already existing structural divide.

The development of different regulations with impact on Digital Transformation of agriculture (i.e.: Data, IA, cybersecurity), will play a crucial role in the future interrelations and the balance of the bargaining power and the bias of the decisions all along the value chain, from farm to fork, thus the regulation could have an impact on the sector, from consumers to farmers decisions.

The technology adoption for a successful Digital Transformation in agriculture, induces a stronger need for digital capacities, digital training that has also an impact on attracting newcomers and young farmers to rural areas.

DEMETER pilots could be used as test beds for the consideration of different regulations adopted or in process of adoption to enhance the digital technologies adoption by agricultural sector in the EU with a view to the specificities in the different territories and sectors.

2 Acronyms

AI	Artificial Intelligence
CAP	Common Agricultural Policy
SME's	Small and Medium Enterprises

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4 Introduction

Our planet is facing crucial changes and farming is called to cope with the challenges of increasing food production to meet global demand, while reducing its environmental impact. New technologies as ICTs, Internet of Things (IoT), Artificial Intelligence, robotics and big data are important tools that can enable this transformation towards a smart, autonomous, data-driven and efficient agriculture. The Cork 2.0 Declaration (1) states that the use of digital technologies will increasingly be vital for farmers and other rural businesses to enable them to deliver sustainable solutions to current and future challenges.

The core of the digital transformation of the agri-food sector lies in the increasing capacity to produce, transfer, and analyse data in ways that were previously not technically or financially feasible. Digital technologies make it possible to record and process a greater volume of agricultural data, while also increasing rural attractiveness, in particular for younger generations (2).

Governments and policymakers play a primary role in creating the enabling environment needed for digitalization, ensuring transparency, security, equality and efficiency of financing systems. Some existing policy instruments have a broader scope that do not include digital agriculture per se. Similarly, there are policies linked to technology development of great potential value to rural and urban areas, but that do have a rural agri-food perspective. Nevertheless, data management, standardization, interoperability and a clear legislative framework are challenges that should be proactively addressed at policy level by both the EU and national governments (3).

This report aims to provide a broad overview of the European legal and policy framework within which the digital transformation of the agricultural sector should be analysed and framed. It focuses primarily on the current programming period and the link between the two of main priorities set by the European Commission: a European Green Deal, which aims to make Europe the first climate-neutral continent by 2050, becoming a modern, resource-efficient economy; and the Digital strategy for Europe to empower people and societies with a new generation of technologies and skills.

This report is being developed within DEMETER subtask 6.2.1. At this regard different repositories have been consulted in order to perform the analysis:

- European Commission legal initiatives: <https://eur-lex.europa.eu/homepage.html?locale=en> (you will find a tool bar in the left side with the different repositories with regard to the legal process status: (treaties, legal acts, consolidated texts, international agreements, preparatory texts,...)).
- European Parliament initiatives. We should look into the different EP committees linked to DT, as this regard I have identified: Agriculture and rural development, Industry, research and energy and the special committee on artificial intelligence and digital age. It can be consulted through the European Parliament web page, and also the repository of supporting documents: <https://www.europarl.europa.eu/committees/en/supporting-analyses/search-database>.
- EESC opinions and positions reports: <https://www.eesc.europa.eu/en/our-work>.
- Committee of the Regions opinions and resolutions: <https://cor.europa.eu/en/our-work/Pages/Opinions.aspx>
- European Commission public consultations (open and closed): <https://ec.europa.eu/info/consultations>

5 The EU's approach to digitalization

The EU's general approach to innovation and digital technology recognizes digital technologies as: (i) sustainable solutions, (ii) critical to achieve the objectives of the European Green Deal (4), and (iii) as enabling factors for this ambitious EU growth strategy. The Commission identifies in accessible and interoperable data the heart of this data-driven innovation, that combining data, digital infrastructure, artificial intelligence solutions, will facilitate evidence-based decisions and expand the capacity to understand and tackle environmental challenges (4).

The digital transition is therefore at the core of the political orientation of the EU executive. As the President of the European Commission Ursula von der Leyen reasserted in her speech about the State of the Union for 2020 (5) *"We must make this Europe's Digital Decade. We need a common plan for digital Europe with clearly defined goals for 2030, such as for connectivity, skills and digital public services. And we need to follow clear principles: the right to privacy and connectivity, freedom of speech, free flow of data and cybersecurity"*. Moreover, President Von der Leyen stated that *"Europe must now lead the way on digital – or it will have to follow the way of others, who are setting these standards for us. This is why we must move fast."*

Overall, the EU' approach to digitalization aims to:

- Strengthen the EU's digital capabilities (achievement of technological sovereignty) in the fields of IT, data, security and accountability, Artificial Intelligence, robotics.
- Ensure the widest possible dissemination that maximizes the benefits for all citizens, businesses, including SMEs, in all regions, in all sectors by pursuing respect for fundamental rights.
- Lead the development of next generation technologies.
- Build a world-leading connectivity infrastructure.

5.1 The EU Digital strategy

In February 2020, the European Commission published a package of Communications dealing with the digitalization of the European Union: the framework document "Shaping EU digital future (6)" and, as detail of the first, two others documents representing the pillars of the strategy, the EU Strategy for Data (7) and the "White Paper on artificial intelligence" (8).

The framework communication acts a 5-years policy road map dealing with initiatives in every sector:

- Connectivity.
- The relationship between citizens and public administrations.
- New measures for the business system.
- The digital skills of all Europeans.

The Strategy for Data proposes, among the other things, the creation of a European cloud to compete internationally on big data, while the White Paper indicates tools designed to make Artificial Intelligence accessible to industries, included SMEs and public administration.

Premise of this complex strategy is the awareness that data-driven innovation has already produced great benefit for the economy and the society in various fields by increasing productivity, allowing better decision-making processes, and improving the quality of public services. At the same time,

however, the European society has fundamental values that must be safeguarded, as protection of personal data, democratic institutions, and public services.

The objective of the European institutions is to ensure digital sovereignty for the EU, through the development of European technologies and digital infrastructures, networks and capacities to reduce the dependence on the supply of technologies from non-European countries and catch up on that still separates it from competitors such as the United States and China.

5.1.1 Pillars and lines of action of the Digital Strategy

The Digital Strategy is based on three main pillars, to ensure that Europe seizes the opportunity and gives its citizens, businesses, and governments control over the digital transformation.

- **Technology that works for the people.** In other words, digitalization should improve citizens' daily life, through actions dealing with digital skills for citizens, connectivity, cybersecurity, artificial intelligence (this last further explored in the dedicated White Paper). Key aims of the European Commission are:
 - Improve digital skills for all Europeans.
 - Protect people from cyber threats (hacking, ransomware, identity theft).
 - Ensuring Artificial Intelligence is developed in ways that respect people's rights and earn their trust.
 - Accelerate the roll-out of ultra-fast broadband for homes, schools and hospitals throughout the EU.
 - Expand Europe's super-computing capacity to develop innovative solutions for medicine, transport and the environment.
- **A fair and competitive digital economy.** The second pillar of the Digital Strategy focuses on the need for a single data market, in which enterprises of all sizes and sectors can compete on equal terms, to enhance productivity and competitiveness worldwide and in which consumer protection is guaranteed. To this aim, the European Commission specifically defined the "EU Strategy for Data" (7). Thus, the second pillar of the digital strategy aims at:
 - Enabling a vibrant community of innovative and fast-growing start-ups and small businesses to access finance and to expand.
 - Strengthening the responsibility of online platforms by proposing a Digital Services Act package and clarifying rules for online services.
 - Making sure that EU rules are fit for the digital economy.
 - Ensuring fair competition of all companies in Europe.
 - Increasing access to high-quality data while ensuring that personal and sensitive data is safeguarded.
- **An open, democratic and sustainable society.** Digitalization should represent a trustworthy environment for people, for reliable and safe interactions. A "space" where what is illegal offline is also illegal there, that emphasises the fight against sales of illicit, dangerous and counterfeited goods, against illegal, unreliable, or opaque information, with an increased responsibility of online platforms. Key aims of the digital strategy defined by its third pillar are:
 - Deploy technology to help Europe become climate-neutral by 2050.
 - Reduce the digital sector's carbon emissions.
 - Give citizens more control and protection of their data.

- Create a "European health data space" to foster targeted research, diagnosis and treatment.
- Fight disinformation online and foster diverse and reliable media content.

Among the lines of actions envisaged by the EU digital strategy, the following are particularly relevant:

- **Excellence and trust in Artificial Intelligence (8):** as specified in the dedicated White Paper, Artificial Intelligence is developing fast, providing concrete improvements in citizens' and businesses daily life, but also entailing potential risks, linked, among the others, to forms of discrimination, intrusion in private lives, opaque decision making-process. That's why, the Commission proposed a strategy aimed to achieve:
 - an "ecosystem of excellence along the entire value chain, starting in Research and Innovation, and developing the right incentives to accelerate the adoption of solutions based on AI, including by small and medium-sized enterprises (SMEs), and
 - an 'ecosystem of trust', as prerequisite to allow citizens to trust AI applications, and to give companies and public services the legal certainty to operate with AI, in a human-centric approach already recognized by the Commission (9).

To these aims, the EC proposed various actions, among which: (i) a new public-private partnership for AI and robotics, (ii) creating links between centres of excellence for AI research and provide for their enhancement, (iii) guaranteeing at least one Digital Innovation Hub specialized in AI per Member State, providing greater financing with risk capital for the development and use of AI with the help of the European Investment Fund, (iv) improving the efficiency of public procurement procedures thanks to AI and (v) supporting the acquisition of AI systems by public bodies.

The Commission also specifies that the European approach to AI will need to be supported by a strong focus on skills to fill gaps. In this regard, a strengthening of the European Skills Agenda will be presented. The development of the skills necessary to work in AI and the updating of the workforce to make it suitable for AI-led transformation will be a priority of the Coordinated Plan on IA revised and to be developed with Member States.

It should be noted that in the last 3 years, EU funding for research and innovation in AI has reached €1.5 billion, equal to a 70% increase over the previous period.

European data strategy's (7) main principle is that data are key components of the digital technologies that are transforming our lives and could be fully exploited if they could be freely circulated, shared but according to a European model, which protects values and fundamental rights and keeps human being at the centre. In this context, the EU aims to create a real single market for data that will allow data to circulate freely and safely within the EU and in all sectors.

This would boost innovation and employment, and thus overcome existing problems with industrial data in which about 80% is collected but never used. For example, large, secure and robust data sets are needed for IA technology to be fully developed. When it comes to data, for Europe, secure access and collaboration are key words, which is why the European Commission is aiming to create a whole European cloud. As control over personal data is still incomplete to date, EU leaders meeting at Council level asked the Commission at the end of September 2020 to develop a reliable and secure public electronic identification system (e-ID)

for Europe (the so-called European digital identity), which will enable citizens to access cross-border digital services. A project on which the Commission intends to present a proposal for a Regulation in the coming months. In short, through this system, citizens in countries with digital identification schemes can use their national electronic identification schemes to access public services available online in other EU countries.

Against this backdrop: (i) data will be able to circulate freely and in a trans-sectorial manner, for the benefit of all, (ii) the sharing of data in key sectors will be ensured, with interoperable and common data spaces at the EU level, and full compliance with European standards will be guaranteed. In particular, the rules on privacy, data protection and competition law, and the rules relating to access to data and their use, will be fair, practical and clear. The European data strategy will increase the number of data available for use in the economic and social fields, while maintaining control over the data by the entities that generate them. And this is key for a sector like agriculture.

Actions to implement the strategy are based on four pillars: (i) Cross-sector governance framework for data access and use, (ii) Investments to strengthen European infrastructures, data-sharing tools, architectures and governance mechanisms, interoperability; (iii) Skills, empowering individuals, investing in skills and SMEs, (iv) Common European data spaces in strategic sectors and sectors of public interest, such as manufacturing industry, **agriculture**, health and mobility.

- **European industrial strategy** (10) which aims to help Europe lead the double transition towards climate neutrality and digital leadership in the world, driving Europe's competitiveness and its strategic autonomy in an even growing global competition. The strategy focuses on three factors that will transform industry: (i) the green transition, with the European Green Deal as the new strategy for Europe's growth, (ii) the digital transition, which enables industry and SMEs to operate more actively, equips workers with new skills and supports the decarbonisation of the economy, and (iii) competitiveness on the world stage. In particular, the EU aims to encourage innovation through new financing and digital innovation poles, in the framework of the sustainable and digital transition, by cutting red tape, reducing barriers within the single market and giving greater and more easy access to finance.

Within the debate on the EU industrial strategy, on 25 November 2020, the European Parliament voted and adopted a report (11) which calls on the European Commission to come up with a revised industrial strategy as the one published on March 2020, thus, to take into account both the impact of the Covid-19 pandemic and the Next Generation EU Plan.

Parliament in brief advocates a shift in the EU's approach to industrial policy, to help businesses cope with the crisis and face the digital and environmental twin transitions. Specifically, for what concerns the digital transition and the main goals that the Strategy should have according to the European Parliament, the focus should be on investing in artificial intelligence, implementing a single European digital and data market, building a better digital taxation system and developing European standards on cybersecurity, and investing more in research and development.

- **Connectivity** as fundamental building block of the digital transformation and the enabler of a more sustainable future. On the basis of the concrete and irrefutable fact that the digital revolution can only materialise through full connection coverage and thus also reach

depopulated and rural areas, where around 40% of people still do not have access to fast broadband connections, the Commission intends to invest immediately with the support of NextGenerationEU to secure broadband by focusing on the expansion of 5G, 6G and fibre.

- **Cybersecurity**, to secure network and information systems in the European Union, safeguarding our communication and data and keeping the online society and economy running. The European Union works on various fronts to promote cyber resilience.

Already in 2017, the EU Commission adopted in 2017 - as part of its Digital Single Market Strategy - the cyber security package (12), which includes a series of actions to increase the level of security in the Union against cyber-attacks. These include the new cyber security regulation, which entered into force last June (2020), setting new objectives and tasks for the EU Cyber Security Agency (ENISA), together with a framework for the introduction of European cybersecurity certification systems.

The EU is also working on the establishment - starting in 2021 - of a European network of cybersecurity competence centres, coordinated by a new European Competence Centre, the European Cybersecurity Industrial, Technology and Research Competence Centre.

- **Digital Skills**, on which the European Commission puts a lot of emphasis. That is why various initiatives aimed at increasing training in digital skills are being promoted in basically all main economic sectors.

5.2 The agri-food sector in the EU Digital Strategy

In 2017, the EIP-Agri, while recognizing the benefits of digitisation for farmers and rural areas, pointed out some of the main barriers that are limiting and preventing their use in agriculture (2). Among the others, the EIP-Agri indicated the needs to: (i) improve the flow of information along the supply chain, (ii) developing new skills and knowledge for farmers and advisors, (iii) enhancing connectivity in rural areas, (iv) co-creating ties to make innovations adapted to real needs of farmers, (v) facilitating data sharing and reuse, (vi) having common standards and fostering interoperability, (vii) creating an environment of trust made of transparency, clarity and customised terms of use and licensing, together with fair division of the added value.

Also in a recent document from the IoF2020 project about policy recommendations to facilitate the adoption of IoT solutions in agriculture (12), the authors define a set of policy proposals based on the analysis of collected needs of the agricultural sector, fully in line with what the EIP-Agri also highlighted: enhancement of digital infrastructures, facilitation of access to open data, clear rules on data ownership and usage of shared data, data protection policy, reusability of components, standardisation, support to the adoption of these solutions.

The long-lasting process done by the EU on digital policy tries to provide answers to these barriers, in particular with the 2020 EU Digital Strategy. Even in previous EU communications on “digital issues”, as the Digitising European Industry (13) and Building a European Data Economy (14) the agri-food sector was mentioned but in the two pillars of the recent EU Digital Strategy, the already mentioned European Data Strategy and the White Paper on Artificial Intelligence, agriculture is identified as strategic sector of public interest for the digital age. Moreover, the importance of digitisation in agriculture is also highlighted in the New Green Deal (4) and even more in the Farm to Fork Strategy (15).

The key points of the Digital Strategy for agriculture:

- A Common European Data Space on agriculture will be created to respond to the specific needs of the agricultural sector (precisely in the context of the Digital Europe program) and considering the creation of a federated distributed system of existing data platforms providing for a basic agreement on a set of interoperability mechanisms, avoiding possible blocking in existing platform architectures. A common agricultural data space based on existing data-sharing approaches could lead to a neutral platform for sharing and pooling agricultural data, including private and public data.
- High data potential to increase the competitiveness of the entire agri-food sector, ensuring greater efficiency in the use of resources while reducing risks in agricultural production and in farmers' income; key role of data in improving the information made available to consumers by enabling the traceability and use of digital labels;
- Need to reduce the gap between urban and rural access to opportunities and services, including ensuring high-speed broadband access for all rural areas.
- Importance of promoting the development of digital skills to support farmers and rural communities in the digital transition.
- Need for a robust legal framework that safeguards farmers' right to data sovereignty and prevents distortion of competition, while not constraining the development of a data-driven economy.
- The Farm to Fork Strategy (15) presented by the European Commission in May 2020 places research, innovation and digitization at the centre of the process that will have to accompany European agriculture to sustainability: in terms of funding and investments in research activities, there are 10 billion foreseen within the new Framework Program for R&I (Horizon Europe) on food, bioeconomy, natural resources, agriculture, fisheries, aquaculture and environment, use of digital technologies (e.g. data, Artificial Intelligence, IoT, robotics) and agro-ecological approaches.
- Specifically, Digital plays an important chapter within the F2F strategy. In short, it is envisaged: (i) the enhancement in the use of satellite images and Artificial Intelligence (AI) for the purpose of optimizing agricultural practices, traceability and controls, and (ii) guaranteeing access to fast broadband Internet in rural areas - target of 100% access by 2025; particular attention will be paid to education and training.

5.2.1 The self-regulatory Framework (COPA-COGECA Code of conduct)

The “EU Code of conduct on agricultural data sharing by contractual agreement” (16) is a clear example of a relevant and concrete initiative led by the key players of the agri-food sector, which embodies and includes the expectations of different stakeholders involved. It represents basically a joint effort from signatory organisations to shed greater light on contractual relations and provide guidance on the use of agricultural data.

The document builds upon the fact that Digital farming represents an unprecedented opportunity to create value and business opportunities by applying data-driven solutions. However, it also points out that: (1) data sharing must be conducted under clear and safe rules, and (2) the challenges for the agri-food sector arises mainly in relation to privacy, data protection, Intellectual Property, data attribution (ownership), trust, data storage, conservation, usability, security and interoperability.

The Code of Conduct stresses in particular that attention should be paid to:

- which data could be shared (and by who, what level of aggregation, what quality).
- reflection on the inclusion of different levels of access by different stakeholders.
- Data needs to be categorised according to different criteria, which are as follows:
 - Reusability, level of aggregation, quality.
 - Purpose.
 - Sensitivity (confidential, sensitive, private or public). For example, field weather data and satellite data are already public. Field boundaries and historic crops may be considered as semi-public.
 - Period for use (e.g. some information on harvest could be considered sensitive to avoid speculation, but after a while could be considered public and therefore shared).

Therefore, the answer will rely on the benefit (value created) for sharing a certain level of data. Full access to all data (full openness) would be counterproductive (e.g. sensitive data, personal data, profiling) and would impact the trust in the system.

Furthermore, the Code of Conduct recognizes that the right to data collected on farm or during farming operations is attributed to the farmer and may be used extensively by them. The farmer has a leading role in controlling access to and the use of data from their business and in benefiting from sharing the data with any partner that wishes to use it. Obtaining informed consent from farmers is essential to gain their trust in new technologies.

6 The legislative framework - State of the art

The definition of the legislative framework about digitalization is an ongoing process. The following paragraphs will point out the state of art about this process, specifying, when available, also future steps already planned. Contents are presented divided by the competent EU institution, which proposed and discussed and/or will propose/discuss the legislative act.

6.1 The European Commission

The European Commission announced the revision of the internal market rules for digital services in its 2020 Communication "Shaping the digital future of Europe" (6). The upcoming digital services law package, scheduled for publication in the fourth quarter of 2020, is expected to rest on two pillars. Firstly, the Commission wants to increase and harmonize the responsibilities of online platforms and information service providers, as well as strengthen the oversight of platform content policies in the EU. Secondly, the Commission proposes to establish ex ante rules aimed at guaranteeing fair conditions in markets characterized by large platforms acting as controllers. The Commission has conducted two public consultations, the first to assess how best to deepen the internal market and clarify responsibilities for digital services, and the second to assess the need to create ex ante regulatory tools with a view to greater scrutiny of large online platforms that now act as controllers. In parallel, the Commission has carried out a consultation on a possible new competition instrument to address the structural problems of competition in both digital and non-digital markets.

In fact, through an even greater sharing of data, using for example the information obtained from precision farming applications, it is necessary to define a clear regulatory framework for the agricultural sector.

In fact, the Commission, with its Data Strategy presented in February 2020, generally aimed at a greater but regulated sharing of public data. The Commission's approach on the subject has always been to work "sector by sector", considering the relative specificities, and selecting the data that should not be made shareable, "separating them" from those that should be shared.

6.1.1 Data Governance Act

On 25 November 2020, the European Commission unveiled its proposal for a Data Governance Act, whose aim is to put on the table a set of measures announced in its 2020 European strategy for data (7) published in February 2020. With its proposal for a new European Data Governance Act, the European Commission intends to address the following aspects: (i) increasing confidence in data sharing, (ii) facilitating the re-use of public sector data, (iii) giving people greater control over their data, and (iv) defining data mediators as "neutral". Furthermore, the creation of European standard forms for the consent to altruistic data sharing is also foreseen.

In short, the Commission Regulation - Data Governance Act:

- (i) will facilitate the sharing of data across the EU and in all sectors in order to create "value" for society, (ii) will ensure that citizens and businesses have more control and trust in the processing of their data, and (iii) will offer an alternative model to the data processing practices of major technology platforms.
- The new rules will make it possible to exploit the multiplicity as well as the vast amount of data available and prepare the ground for the creation of European sectoral data spaces.

Indeed, the Commission's Data Strategy, published in February 2020, suggested the creation of 9 common data spaces in various policy areas such as health, environment, energy, agriculture, mobility, finance, manufacturing industry, public administration and skills.

- The Regulation will lay the foundations for a new way of managing data at European level that respects EU values and principles, such as the protection of personal data (GDPR), consumer protection and competition rules. It offers an alternative model to the data processing practices of large technology platforms, which have high market power because their business models involve the control of large amounts of data.
- Underlying the new approach there will be the neutrality and transparency of data intermediaries (the entities that organise the sharing or pooling of data), which will serve to increase user confidence. To ensure neutrality, for example, the intermediary will not be able to process the data on its own behalf (for example, by selling it to another company or using the data to create a product based on it) and will have to comply with strict requirements.

The Regulation on a Data Governance Act includes specifically the following elements:

- A number of measures to increase trust in data sharing, as the lack of trust is currently a major obstacle and results in high costs.
- Create new EU rules on neutrality to allow novel data intermediaries to function as trustworthy organisers of data sharing.
- Measures to facilitate the reuse of certain data held by the public sector.
- Means to give Europeans control on the use of the data they generate, by making it easier and safer for companies and individuals to voluntarily make their data available for the wider common good under clear conditions.

This new Act will inevitably have important implications for the development of precision agriculture. In fact, the proposal aims to increase the control that producers have over the data they generate. In fact, by using information from precision farming applications, it is at least necessary to define a clear regulatory framework for the agricultural sector, and this new Regulation is certainly an important first step by the EU.

In particular, when farmers decide to provide their data for altruistic reasons, the regulation aims to ensure that their motives are respected and that they are not encouraged by unethical incentives to make more information available than they would normally be willing to do. The creation of standard European forms for consenting to altruistic sharing of data is also envisaged.

The Commission is aware that the lack of trust in data sharing, which has proven to be an obstacle to increasing the use of information in agriculture thus the overall aim is to promote smart and resource efficient agriculture.

The proposal, as abovementioned, is the first deliverable under the European strategy for data, which aims to unlock the economic and societal potential of data and technologies like Artificial Intelligence, while respecting EU rules and values (for example in the area of data protection, and respect of intellectual property and trade secrets).

The Commission also committed to presenting further proposals between the end of 2020 and the first half of 2021 such on the following: (a) an EU Common Data spaces (including one on health data

and one on the Green Deal); (b) a Data Law to promote data sharing among enterprises and between enterprises and public administrations; (c) a new cybersecurity strategy; (d) a revision of the Network and Information Security (NIS) Directive; (e) a detailed legislative proposal on Artificial Intelligence (IA); and finally (f) a Digital Services Act.

In the following paragraphs the proposal presented by the 21 December 2020 are synthetically described.

6.1.2 A new EU Cybersecurity Strategy

On 16 December 2020, the European Commission together with the High Representative of the Union for Foreign Affairs and Security Policy, presented the new EU Cybersecurity Strategy (18), which will be implemented in the coming months.

In few words, the new Strategy will strengthen Europe's collective resilience against cyber threats and help ensure that all citizens and businesses can fully benefit from reliable and trustworthy digital services and tools.

In practical terms, it is now up to the European Parliament and the Council to discuss adopt the proposals put forward and included in this Strategy. Then, once adopted, the proposals must be transposed by Member States into their national laws within 18 months of their entry into force.

In short, the Commission presented specific regulatory proposals to address both cyber and physical resilience of "critical actors" and critical networks, and specifically through:

- a Directive on measures for a high common level of cybersecurity across the Union (revised NIS Directive (19) or "NIS 2"), and
- a Directive on "on the resilience of critical entities" (19).

These two proposals cover a wide range of sectors, both public and private such as hospitals, energy networks, railways, but also data centres, public administrations, research laboratories and manufacturing of critical medical devices and medicines, as well as other critical infrastructure and services.

The Commission also proposes to launch a network of *Security Operations Centres* across the EU, powered by Artificial Intelligence (AI), which will form a true "cyber security shield" for the EU, able to detect signs of cyber-attacks early enough and enable proactive action, before damage occurs. Additional measures will include dedicated support for small and medium-sized enterprises (SMEs) under Digital Innovation Hubs (DIHs), as well as increased efforts to improve workforce skills.

The Commission is also creating a new Joint Cyber Unit to strengthen cooperation between EU bodies and Member State authorities responsible for preventing, deterring, and responding to cyber-attacks, including civilian communities, law enforcement, diplomacy, and cyber defence.

Finally, the High Representative for Foreign Affairs will also present proposals to strengthen the EU Cyber Diplomacy Toolbox to effectively prevent, deter, dissuade and respond against malicious cyber activities, particularly those affecting our critical infrastructure, supply chains, institutions and democratic processes.

In conclusion, as part of the new Cybersecurity Strategy, Member States, with the support of the Commission and *European Cyber Security Agency (ENISA)* are encouraged to complete the implementation of the EU 5G Toolbox (21).

Furthermore, through the conclusions adopted on December 2, 2020 by written procedure (22), the Council stressed the importance of assessing the need for long-term horizontal legislation to address all relevant aspects of cybersecurity of connected devices (IoT), such as availability, integrity, and privacy.

Specifically, in the Conclusions “on cybersecurity of connected devices” (23), which were published in the Official Journal of the European Union on 10 December 2020, the Council of the EU emphasised that *Cybersecurity certification as defined under the Cybersecurity Act will be essential for raising the level of security within the digital single market*. Specifically, ENISA is already working on cybersecurity certification schemes, and the conclusions adopted on 2 December 2020 urge the Commission to consider a request for cybersecurity certification schemes for connected devices and related services.

6.1.3 Digital Services Act (DSA) and Digital Markets Act (DMA)

On 15 December 2020, in the context of the EU Digital Strategy, the European Commission has presented two Proposals for Regulations respectively on the Digital Services Act (DSA) (24) and the Digital Markets Act (DMA) (25). The European Parliament and the Member States will now discuss the Commission's proposals under the ordinary legislative procedure. If adopted, the final text will be directly applicable throughout the European Union.

In general, the new rules aim to: (a) more effectively protect consumers and their fundamental rights online and (b) make digital markets fairer and more open for all. The Commission reports that it will support the expansion of smaller platforms, SMEs and Start-ups, providing them with easy access to customers across the Single Market, while reducing compliance costs. The new rules will also prohibit the imposition of unfair terms by online platforms that act, or are expected to act, as single market access controllers.

To provide a quick general framework: as part of the EU Digital Strategy, in March 2020 the European Commission had published its plans for the Digital Services Act (DSA), a legislative package aimed at "shaping Europe's digital future." The package, better known as the **Digital Services Act Package** essentially aims to create a modern legal framework for digital services, strengthening the Digital Single Market and ensuring that digital service providers in the EU act responsibly to mitigate risks arising from the use of their services, while respecting EU rights and values and protecting fundamental rights.

The **Digital Services Act** focuses on modernizing the current legal framework for digital services by providing clear rules on the responsibilities of digital services. It aims to establish a "modern platform oversight cooperation," which could ensure an effective enforcement mechanism, and also precise ex-ante rules covering large online platforms acting as gatekeepers. Some large players have nowadays become quasi-public spaces for information sharing and online commerce and have taken on a systemic nature - *platforms reaching more than 10% of the EU population (45 million users)* -. This aspect inevitably entails particular risks to user rights, information flows and public participation.

Within this new accountability framework, the Commission will be given special powers regarding the oversight of very large platforms, including the ability to sanction them directly.

Under the Digital Services Act (DSA), *binding EU-wide obligations will apply to all digital services that connect consumers to goods, services or content, and new procedures will be in place for faster removal of illegal content and comprehensive protection of users' fundamental rights online.*

Specifically, the Digital Services Act (DSA) will introduce:

- a. Rules for the removal of illegal goods, services, or content online.
- b. Safeguards for users whose content has been mistakenly deleted from platforms.
- c. new obligations for large platforms to take risk-based measures to prevent abuse of their systems.
- d. Far-reaching transparency measures, including with respect to online advertising and the algorithms used to suggest content to users.
- e. New powers to verify the functioning of platforms, including by facilitating researchers' access to key data.
- f. New rules on the tracking of commercial users in online marketplaces, to help track down sellers of illegal goods or services; and finally.
- g. An innovative cooperation process between public authorities to ensure effective enforcement across the Single Market.

While instead the **DMA (Digital Markets Act)** will deal more specifically with the behaviour of companies that have gained significant weight in the market according to the logic of "with greater size must correspond greater responsibility". In other words, this proposed law addresses the negative consequences arising from certain behaviour of digital platforms that have taken the role of "controllers of access" better known as gatekeepers to the digital market. On this basis, the Commission's regulation aims to ensure that these *digital gatekeepers* comply with a set of well-defined obligations designed to prevent unfair behaviour.

6.1.4 Artificial Intelligence

Dealing with Artificial Intelligence, discussions are again still open. The main legislative initiatives, already done or just scheduled, of the Commission are listed below:

- In June 2019, the Commission's High Level Expert Group on Artificial Intelligence (17) presented its policy and investment recommendations (18) for reliable AI. The Commission already in 2018 presented a (non-legislative) proposal on its 'European approach to artificial intelligence (19) which was the basis for the White Paper on Artificial Intelligence, and a report on security and reliability aspects of AI. The Commission also carried out a public consultation on its White Paper. The synthesis report was published in July 2020 (20).
- Digital Service Act package (21) which aims to modernise the current legal framework for digital services. Planned for the fourth quarter of 2020.
- Data sharing in the EU – common European data spaces (new rules), covering areas like the environment, energy and agriculture (22) which adoption is planned by the fourth quarter of 2022.

- Data Act aimed at fostering, inter alia, business-to-government data sharing for the public interest and business-to-business data sharing, evaluate IPR framework with a view to further enhance data access which will be released in Q3 2020 (23).
- The follow up of the White Paper on AI that contributes to the setting of a European regulatory framework for trustworthy AI (including in the fields of safety, liability, fundamental rights and data), planned in Q1 2021 according to the adjusted Commission Work Programme 2020 presented in May 2020 (24).
- Further key initiatives on AI in 2021, as communicated by the President of the Commission to the President of the European Parliament in his letter of intent following his State of the Union address for 2020 (25).

Specifically, the European Commission will present a detailed legislative proposal on Artificial Intelligence in early 2021. The approach of the European Commission in this sense and in particular on the data issue is precisely that of adopting a sector-by-sector approach, considering the relative specificities, and selecting the data that should not be made shareable, distinguishing them from those that should instead be appropriate.

At the sectoral level it is therefore necessary to evaluate which are the "grey" areas, where it is not clear who is responsible for some omissions, deficiencies or actual damage caused by the application of a tool or service managed by AI, and creating at the same time a common *modus operandi* based on the definition of the risk level.

In general, it is confirmed that the *sine qua non* for the use of AI on a large scale concerns the presence of an adequate basic infrastructure, especially in rural areas.

With the introduction of AI in companies, the aspect of the limits to be introduced on the deployment of certain types of technologies that can harm privacy or lead to any discrimination must also be evaluated. AI could in fact compromise the right to privacy and data protection (e.g. facial recognition or online tracking and profiling of people is mentioned). The involvement of workers and transparency in the transition towards the introduction of AI in the labour market is therefore essential.

6.1.5 Intellectual property rights action plan

On 25 November 2020, the European Commission adopted a new Action Plan on Intellectual Property (26). The main aims are: (i) *to overhaul the EU Intellectual Property system to strengthen Europe's ability to develop next generation technologies*, (ii) *to reflect advances in data and AI*, (iii) *to allow companies to quickly pool their knowledge and finally (iv) to support Europe's path towards economic recovery and the green and digital transition*.

This decision has to be framed in the context of the EU Industrial Strategy adopted on 10 March 2020, which acknowledged the need for the EU Intellectual Property policy to help uphold and strengthen Europe's tech sovereignty, promote global level playing field, and announced the adoption of the Action Plan.

In brief, the Action Plan aims at enabling the European innovative industry to remain a global leader and at speeding up Europe's green and digital transitions. It has to be noted that on 10 November, the Council of Ministers invited the Commission to present proposals for future EU IP policy.

The Action Plan also seeks to ensure that the IP framework is fit for the digital transition. The European Commission announced it will take steps *to update the legal framework where needed to take into account new digital realities*.

Specifically, it will launch an industry dialogue on the implications of the artificial intelligence (AI) revolution for the IP system. In addition, it will seek to promote the use of new technologies, such as AI and Blockchain, to improve the functioning of the IP system, by promoting the use of high quality metadata and new technologies (e.g. blockchain) to help improve transparency and facilitate licensing in the area of copyright. It will also put forward new IP-related initiatives to promote data access and sharing, while safeguarding legitimate interests. The Commission has plans to present an initiative to revise the Database Directive dated March 1996.

6.1.6 CAP 2021-2027 regulation

The CAP regulation is being under Trialogue discussion at the time of the finalisation of this report, however the proposal of the EC adopted by the Council have a strong consideration of the Digital transformation of Agriculture, and it is considered that like in other sectors, agriculture and rural areas can make better use of new technology and knowledge, in particular of digital technologies. The proposals reinforce the links to research policy by putting the organisation of knowledge exchange prominently in the policy delivery model. Similarly, the emphasis placed on digitisation allows linking up to the EU Digital Agenda.

And specifically, the Article 102- Modernisation, mentions that “the description of the elements that ensure modernisation of the CAP referred to in point (g) of Article 95(1) shall highlight the elements of the CAP Strategic Plan that support the modernisation of the agricultural sector and the CAP and shall contain in particular:

(b) a description of the strategy for the development of digital technologies in agriculture and rural areas and for the use of these technologies to improve the effectiveness and efficiency of the CAP Strategic Plan interventions”.

6.1.7 Other initiatives of the Commission

Training and education. The Commission adopted on the 30th of September two initiatives that will strengthen the contribution of education and training to the EU's recovery from the coronavirus crisis, and help build a green and digital Europe (27).

One is the European Educational Area, to be realized by 2025, to improve access to quality education and training, enable learners to move easily between education systems in different countries and help create a culture of lifelong learning. Efforts for the creation of the European Education Area will be made in synergy with the European Skills Strategy, the new Vocational Education and Training Policy and the European Research Area.

The second is the Digital Education Action Plan for 2012-2027 that takes into account the lessons learned from the pandemic, for a high-performance digital education ecosystem with enhanced skills and connectivity for digital transformation. It has two long-term strategic priorities: (i) fostering the development of a high-performing digital education ecosystem and (ii) enhancing digital competences for the digital transformation.

Both initiatives rely on close cooperation between Member States.

Access to financial systems. On the 24 September 2020, the European Commission adopted new Digital Finance Package, including Digital Finance and Retail Payments Strategies, and legislative proposals on crypto-assets and digital resilience. This package is aimed to boost Europe's competitiveness and innovation in the financial sector, paving the way for Europe to become a global standard-setter. It will give consumers more choice and opportunities in financial services and modern payments, while at the same time ensuring consumer protection and financial stability (28).

As part of the package, the Commission has also presented a legislative proposal on digital operational resilience (38). Particular attention was paid to the "same business, same risk, same rules" principle to ensure consumer protection and to ensure a level playing field between existing financial institutions and new market players.

The adoption of this package is part of the broader EU Strategy for Digital Finance - Digital Finance Strategy - whose four main priority areas are the following:

1. Addressing the fragmentation of the digital single market for finance, i.e. reducing obstacles to cross-border financial transactions - Some adjustments are needed on this point to ensure that the legal framework allows for the use of interoperable digital identity solutions.
2. Ensure that the EU regulatory framework facilitates digital innovation in the interests of consumers and market efficiency. In this regard, the Commission has proposed adjustments to EU financial services legislation and supervisory practices to ensure that they remain relevant in the digital age. Related to this are the Commission's legislative initiatives on crypto-assets (29).
3. Create a European financial data space to promote data-driven innovation, based on the European Data Strategy, and aimed at greater access to and sharing of data within the financial sector; All this will be accompanied by solid guarantees for consumers regarding compliance with data protection regulations (GDPR).
4. Addressing the challenges and risks associated with digital transformation, in particular to promote resilience, data protection and adequate prudential supervision.

Public Consultations

In the context of the [Digital Services Act package](#), the Commission initiated and ran during June 2 - September 8, 2020 an open public consultation that covered a series of topics related to the environment of digital services and online platforms, meant detect potential issues affecting online safety, freedom of expression, fairness, and a level-playing field in the digital economy before the adoption of the legislation (in December 2020) and ensure ex ante rules for preventing failures in markets characterized by large platforms acting as gatekeepers.

A total number of 2,863 stakeholders provided feedback, out of which 66% were EU individual citizens, but also companies, business associations, NGOs, public authorities, research institutions, etc. Moreover, close to 300 position papers were submitted.

In terms of geographical coverage, most respondents originated from Germany (27.8%), France (14.3%), and Belgium (9.3%), while the UK and the US were the largest contributors from outside the European bloc.

The most significant results are highlighted below:

How to effectively keep users safer online? Respondents agreed on the need to harmonise at EU level obligations for online platforms to address illegal content they host. There is a need for simple, standardised, and transparent notice and action obligations harmonised across the single market, while platforms ought to be transparent about their content policies, support notice and action mechanisms for reporting illegal activities.

However, while automated tools may be useful in content moderation and addressing illegal content, there is also a strong risk associated with the removal of legal content and unintentional, unjustified limitations on citizens' freedom of expression. Another finding is the strong need for algorithmic accountability and transparency audits and risk assessments, especially given the particular role of algorithmic systems in accessing content on online platforms, and how platforms' systems are used for fueling violence, hate speech or disinformation.

On the other hand, the feedback gathered shows that not all types of legal obligations should be put on all types of platforms, to avoid burden on medium-sized or smaller European platforms.

Reviewing the liability regime of digital services acting as intermediaries. The principle of the conditional exemption from liability ensures a fair balance between protecting fundamental rights online and allowing the newcomers to innovate and scale. Organisations defending consumer rights supported changes to the liability regime for a faster resolution of damages for consumers. Smaller service providers indicated that they are confronted with uncertainty and disincentives to act against illegal goods, services or content disseminated through their service. Start-ups strongly called for a legislative framework that reaffirms the principles of the E-Commerce Directive, while requiring clarifications on the liability regime with regards to voluntary measures they might take.

All stakeholder categories indicated that, in order to protect fundamental rights (including to privacy and freedom of expression), there is a need to preserve the prohibition of general monitoring obligations for online intermediaries.

Issues deriving from the gatekeeper power of digital platforms. Responses led to the conclusion that dedicated regulatory rules are necessary to address negative societal and economic effects of gatekeeper power of large platforms, especially because of their unfair trading conditions (exclusionary conducts, exploitative conducts and transparency-related problems.).

Few respondents (mainly several large platforms and their trade associations and some research institutes and national authorities), argue that (extra) ex-ante regulation is unnecessary, especially in the light of the consultation on the New Competition Tool and the recent adoption of the Platform to Business Regulation.

While most respondents indicated that dedicated rules on platforms should include prohibitions and obligations for gatekeeper platforms, other opinions consider that a 'blacklist' of prohibited practices may hinder a dynamic industry that has multiple business models and it should result from an assessment of market failures to be resolved.

To enforce prohibitions and obligations and case-by-case remedies imposed on gatekeeper platforms, there is a strong consensus that there is a need for a specific regulatory authority and an effective coordination between EU bodies and the relevant national regulatory authorities is needed.

Other emerging issues and opportunities, including online advertising and smart contracts. Online advertising, according to the views expressed during the consultation, has as downside a lack of user

empowerment and lack of meaningful oversight and enforcement. Many indicated that there is insufficient transparency regarding the identity of the advertiser, how the advertisements are personalized and targeted. Additionally, there are concerns about deceptive and misleading advertisements online, even more worrying when they target minors or have political purposes. Conduction research online is hindered by an inconsistent access to relevant data, shown academic institutions. Regarding smart contracts, issues were raised regarding their validity, applicable law and jurisdiction, therefore there is a need for regulatory clarity.

Addressing challenges around the situation of self-employed individuals offering services through online platforms. This section included an assessment of various issues faced by service providers via online platforms: food delivery, household maintenance, ride-hailing, software development, translations, art and design, health counselling or training. Among the identified issues there were: the lack of clarity concerning the employment status of individuals offering services, the lack of social security coverage, work precariousness and amount of hours worked, risks of social dumping. Many indicated that they are not able to collectively negotiate their remuneration or other conditions vis-à-vis platforms. Unjustified barriers to cross-border transactions should be addressed at EU level, shown the public authorities who took part in the consultation.

Among the challenges identified by the individual service providers using online platforms were: The lack of transparency in online ratings, the transparency on remuneration, the lack of possibility to organize collectively vis-à-vis the platforms.

In turn, the platforms and the business associations desire harmonized EU rules to ensure even operational rules among platforms but also vis-à-vis the traditional sectors of the economy. Decent working conditions for platform workers, established through legislation, should obstruct competitiveness and create the risk of misclassification.

Governance of digital services and aspects of enforcement. Views tend to agree that the internal market principle preserved in the E-Commerce Directive is the base for innovative services in EU. However, the fragmented legal framework dealing with illegal content, goods and services impedes most businesses, but especially SMEs and start-ups (affected in a disproportionate manner) to expand across the Union, but also globally.

The need for improved cooperation between authorities in the cross-border supervision of digital services, especially online platforms is another finding, 2/3 of the respondents indicating that an unified oversight entity for EU oversight is very important, but authorities and other stakeholders consider that appropriate data and adequate financial and human resources are needed. Many groups of stakeholders consider that the oversight entity staff should have interdisciplinary skills (in-depth technical skills, including data processing and auditing capacities, for ensuring the oversight and transparency of algorithmic decision-making processes.).

In parallel, a second consultation took place between 3 June 2020 - 8 September 2020, on a possible new tool meant to address structural competition problems in both digital and non-digital markets. Complementing the consultation on the Digital Services Act Package (summarized above), the one on competition targeted the same groups of stakeholders: companies with business operations in the EU, law firms, consultancies, industry associations, consumer organizations, public authorities, academics and research institutions dealing with EU competition legislation. The aim of the consultation initiated by the Commission and the national competition authorities was to detect

structural issues that existing EU competition rules cannot tackle in the most effective way. Targeted stakeholders were invited to elaborate on a possible need for a new competition tool to ensure fair and competitive markets for delivering lower prices and higher quality, as well as more choice and innovation to European consumers. Secondly, stakeholders expressed opinions about the features such a new competition tool in making it effective in addressing timely and effectively structural competition issues.

Regarding its White Paper on Artificial Intelligence, the Commission ran a public consultation from 19 February until 14 June 2020, gathering feedback from more than 1200 respondents (84% originating from member states) and about 400 position papers. The AI White Paper is intended to propose: (i) measures to streamline research, promote cooperation between Member States and boost investment in AI; (ii) policy options for a future EU regulatory framework on AI, with a strong focus on high-risk applications.

The online questionnaire had three sections: (1) consulted on the specific actions for building an ecosystem of excellence to boost AI development and adoption across the EU economy and public administration; (2) outlined a series of options for a regulatory framework for AI; (3) referred to safety and liability aspects of AI.

For the first section, ECOSYSTEM OF EXCELLENCE, out of the six topics proposed by the AI White Paper proposed to build an ecosystem of excellence on AI in Europe, the respondents placed on top skills and excellence in research. Many respondents emphasized the importance of developing skills and adapting training programmes on AI. Business operators mentioned the importance of skills, data sharing and the collaboration between industry and academia. Civil society organisations underlined the impact of AI on fundamental rights, society and collective bargaining rights.

Coordination with member states came third, many considering that a coordinated approach can benefit through excellence in research and developing AI skills through adapted training programmes.

Supporting the uptake of AI by SMEs through Digital Innovation Hubs (through knowledge transfer and the support of AI expertise) was considered key by many respondents. Such hubs should also facilitate access to testing and facilities and support partnerships between SMEs, larger operators and academia.

For section 2, ECOSYSTEM OF TRUST, respondents expressed concerns related to fundamental rights, safety, and issues linked to the functioning of AI.

Legislation therefore should properly address these concerns, with 42% of respondents indicating the need for a new regulatory framework on AI; another 33% thought that the current legislation needs some improvement to address identified missing pieces; only 3% consider the current legislation sufficient.

The scope of the new legislation should, according to 43% of the answers, target only high-risk AI applications through new compulsory requirements; another 31% are uncertain about such limitations. There is no clear definition of high risk among those who responded the survey.

The consultation posed questions on the use of remote biometric identification systems in publicly accessible spaces, topic covered by the AI White Paper. Only 6% of the respondents agree with the public use of remote biometric identification systems, while 28% of being totally against the use of this technology in public spaces. In between, 29% consider that specific EU guideline or legislation are

needed before using the technology, and 20% wanted to see more requirements or conditions for remote biometric identification.

In Section 3, SAFETY AND LIABILITY ASPECTS, the consultation inquired whether the existing legal framework (i.e., Product Liability Directive) properly addresses aspects related to the way the emerging digital technologies operate (in terms of safety, reliability consistency, and efficient remediation). The majority (61% of the respondents) think that the Product Liability Directive should be amended to better cover the risks engendered by certain AI applications. The respondents representing the civil society overwhelmingly supported this view.

Among the particular AI-related risks that should be tackled by the legislation, the most frequent were the issue of cyber risks (78%) and personal security risks (77%), mental health risks and, finally, risks related to the loss of connectivity.

6.2 The European Council

The EU Council recently adopted conclusions (30) via written procedure on the European strategy "Shaping the digital future of Europe", underlining full support for digital transformation as a key driver for economic recovery, green growth and strategic autonomy of the EU. The sectors covered by the conclusions adopted range from connectivity, digital value chains and e-health to the data economy, artificial intelligence and digital platforms. The text also highlights the impact of digital transformation on the fight against the pandemic and its critical role in the post-COVID-19 recovery. To this end, the goal of completing the creation of a digital single market remains primary. The European Council therefore calls on the Commission to present, by March 2021, an agenda defining the EU's concrete digital ambitions for 2030.

The Council in brief:

- Welcomes the recent digital package from the European Commission, and in particular the communications "Shaping the digital future of Europe" and "A European data strategy", as well as the White Paper on Artificial Intelligence.
- Stresses the significant impact that digital transformation will continue to have on the European labour market, in particular in terms of changing the demand for skills, as well as phasing out certain types of jobs and creating new jobs.
- It also recognizes the important contribution of the future Horizon Europe and the Structural Funds to digital transformation. The need to allocate sufficient funds for these programs is stressed.
- Calls for specific attention to the issue of access and interoperability of operating systems.
- Stresses that individuals, employees and businesses in Europe should remain in control of their data, based on secure data infrastructures and reliable value chains while preserving the EU's principle of openness towards third countries.
- Welcomes the Commission's intention to explore the development of a coherent horizontal framework for public and private sector access and use of data across the EU, based in particular on reducing transaction costs for sharing and voluntary pooling of data, including through standardization to achieve better interoperability of the same.
- Invites the Commission to present concrete proposals on data governance and to encourage the development of common European data spaces for strategic sectors of industry and

sectors of public interest, including health, environment, public administration, manufacturing industry, agriculture, energy, mobility, financial services and skills.

- Stresses that wider access and use of data can potentially lead to a number of challenges, such as insufficient data quality, distortion of competition and challenges for data protection and security, or unfair trading conditions, which they must be addressed with a comprehensive approach and adequate policy tools.
- Calls on the Commission to speed up the development of a coherent framework around applicable rules and self-regulation for cloud services, in the form of a 'cloud regulation', to increase clarity and facilitate compliance.
- Recognizes that Artificial Intelligence is a rapidly evolving technology that can contribute to a more innovative, efficient, sustainable and competitive economy, as well as to a wide range of social benefits, such as improving citizen safety, public welfare, education and training, health care or support for climate change mitigation and adaptation. However, stresses that, at the same time, some applications of Artificial Intelligence can involve a series of risks, such as partisan and opaque decisions that affect citizens' well-being, human dignity or fundamental rights.
- Encourages therefore the Commission and the Member States to promote an ethical and human-centred approach to AI policy.
- Stresses the need to further develop IT security standards and, where appropriate, certification systems for ICT products, services and processes, based on European or international standards and in line with the Cybersecurity Act.
- Recognizes that the EU and Member States should explore the opportunities that Blockchain technology can offer to the benefit of citizens, society and the economy, among other things for sustainability, better functioning of public services, traceability of products, and to ensure security through reliable decentralized data exchanges and transactions. We therefore await the Commission's next Blockchain strategy aimed at strengthening European leadership in this sector.
- Skills and education: notes that the EU faces growing demand from all sectors for employees with basic digital skills, as well as a gap of 1 million ICT professionals, which risks hampering its development potential digital. The Council therefore urges the Member States and the Commission to take measures to ensure that citizens have basic digital skills and to halve this current gap by 2025, taking into account the specificities of the Member States.
- Welcomes the review of the coordinated AI action plan to be developed with Member States focusing on the skills needed to work in Artificial Intelligence. However, it recognizes that, to achieve its data goals, Europe needs to make proportionate investments in IT skills and literacy, including through the training of sufficient data experts and administrators to provide the necessary digital skills.

The European Council will return to discuss digital issues at its meeting in March 2021. The issue of digital taxation will also be assessed in this context.

6.3 The European Parliament

In September 2020, Members of the EU Parliament set their priorities for the Digital Service Act (DSA) that the Commission intends to present by the end of the year 2020 (31), synthesized in three main themes:

- 1) New rules are now needed to define the responsibilities of digital service providers, address the risks to which users are exposed and promote innovative services across the EU.
- 2) A clearer and more binding mechanism to combat illegal content online, following the principle of "what is illegal offline is also illegal online".
- 3) Specific rules for large platforms to facilitate the market entry of SMEs and start-ups.

More in details, the committee, considering that with the DSA the Commission aims to shape the digital economy not only at EU level but also to be a standard-setter for the rest of the world, as it did with data protection, formulated recommendations about the following issues:

- The need to update the EU legal framework for digital services (the e-commerce directive was adopted 20 years ago) to reflect the rapid digital transformation. A "one-size-fits-all" approach should, however, be avoided. The committee recommends distinguishing between economic and non-economic activities, and between "different type of digital services hosted by platforms rather than focusing on the type of the platform". All digital service providers established in third countries must adhere to the rules of the DSA when directing their services to consumers or users in the EU.
- Preventing illegal, counterfeit and unsafe products: consumers should be equally safe when shopping online or in stores. Platforms and online intermediation services will need to improve their efforts to detect and take down false claims and tackle rogue traders, e.g. those selling false medical equipment or dangerous products online, as was the case during the COVID-19 outbreak. Consumers should also be promptly informed by online marketplaces once a non-compliant product they have purchased has been removed from their site.
- An effective and legally enforceable notice-and-action mechanism must be set up so that users can notify online intermediaries about potentially illegal online content or activities and to help the latter to react quickly and be more transparent regarding the actions taken on potentially illegal content.
- Making a strict distinction between illegal content, punishable acts and illegally shared content on the one hand, and harmful content on the other (the legal liability regime should concern "illegal content" only as defined in EU or national law). Harmful content, hate speech and disinformation should be addressed through enhanced transparency obligations and by helping citizens to acquire media and digital literacy regarding dissemination of such content.
- Call platforms to check the so-called "Know your business customer" and stop fraudulent companies using their services to sell their illegal and unsafe products and content.
- The DSA should guarantee the consumer's right to be informed if a service is enabled by AI, makes use of automated decision-making or machine learning tools or automated content recognition tools, as well as their right to redress. They should be able to opt out and be given more control of the way content is ranked. MEPs also call for rules to ensure non-discrimination and understandable explanation of algorithms.
- Introduction of additional rules on targeted advertising and micro-targeting based on the collection of personal data and to consider regulating micro- and behavioural targeted advertising more strictly in favour of less intrusive forms of advertising that do not require extensive tracking of user interaction with content.
- Including a separate proposal for an internal market instrument imposing ex-ante obligations on large platforms with a gatekeeper role ("systemic operators"). The aim would be to prevent

(instead of merely remedy) market failures caused by them and open up markets to new entrants, including SMEs, entrepreneurs, and start-ups.

During the Plenary session of the European Parliament of the week 19-22 October 2020, various draft reports prepared by the relevant committees of the EP were specifically voted, which aim to establish rules for digital service providers (32) and Artificial Intelligence (33) promoting innovation, ethical standards and trust in technology - This will define the position of the European Parliament in view of the elaboration by the European Commission on the Digital Service Act Package (DSA).

The reports are as follows:

- "Law on Digital Services: improving the functioning of the single market", adopted by the members of the Internal Market and Consumer Protection Committee (IMCO) of the European Parliament on 28 September - (34).
- The report "with recommendations to the Commission on a framework of ethical aspects of Artificial Intelligence, robotics and related technologies" - (35).
- The report "with recommendations to the Commission on a civil liability regime for Artificial Intelligence" - (36).
- The report "with recommendations to the Commission on a Law on Digital Services: adapting commercial and civil law rules for commercial entities operating online" - (37);
- The report "on Intellectual Property Rights for the development of technologies for Artificial Intelligence" - (38).
- The report "on the Law on Digital Services and on issues relating to fundamental rights" - (39).

In particular, by voting on the aforementioned report proposals, Parliament invites the European Commission to present a proposal for the Digital Service Act which considers the following aspects/areas: (i) transparency and protection of consumers, (ii) Artificial Intelligence, (iii) the need to tackle the spread of illegal content online, (iv) the ex-ante regulation of systemic platforms and (v) the creation of a European regulatory body.

As mentioned above, MEPs believe that a "one-size-fits-all" approach should be avoided and recommend by voting on these reports, to distinguish between economic and non-economic activities, and between "different types of digital services hosted by platforms rather than focusing on the type of platform".

Linked to this, the European Commission launched a public consultation at the beginning of June in order to gather feedback to support the EU institutions in formulating the future regulatory code for digital services. In fact, it should be noted that the EU legal framework for digital services has remained unchanged since its adoption in 2000 of the e-commerce directives, which established the basis for the regulation of digital services in the EU.

Following the debate that took place during the plenary session of the European Parliament, MEPs approved two "legislative" resolutions by the IMCO and JURI committees, and one non-legislative resolution by LIBE committee, respectively. Through these initiatives, MEPs call the Commission to address the current shortcomings in its digital services law package (DSA).

The three committees generally agree on the need to maintain the general principles of the e-commerce directive (i.e. the country of origin principle, the limited liability regime and the prohibition of general oversight obligations), but each one of them raised specific issues:

- Members of the Internal Market and Consumer Protection Commission call for online marketplaces to be legally obliged to be transparent and to share information with users, for example on unsafe products sold online, as well as stricter rules on consumer protection and effective enforcement and supervision measures. Specific rules will also have to be presented to prevent (rather than just remedy) market failures caused by large platforms (34).
- the Juridical Commission (JURI) asks for legal clarity for platforms and guarantees to protect users' fundamental rights, including access to judicial remedies and stricter rules to deal with harmful content such as fake news. MEPs are also calling for more control over what they are exposed to online (including the ability to forgo content curation), less intrusive targeted ads, more transparent data collection and a European entity to control and enforce. pecuniary sanctions) (37);- Finally, the Committee on Civil Liberties, Justice and Home Affairs (LIBE) focus on fundamental rights issues and call for the removal of content to be "diligent, proportionate and non-discriminatory" to safeguard freedom of expression and information, as well as privacy and data protection. MEPs also stress that the so-called "microtargeting" based on people's vulnerabilities is problematic, as is the spread of hate speech and disinformation, and therefore ask for transparency on the "monetization" policies of online platforms (39).

It should be noted that legislative initiative reports, which represent a form of "indirect" right of initiative given to the European Parliament - do not have the obligation for the European Commission to propose the required legislation. However, Commission President Ursula von der Leyen was committed to taking Parliament's views on the matter into account.

Finally, it is relevant to highlight that in July 2020 a [Special Commission on Artificial Intelligence \(AIDA\)](#) was established within the European Parliament. In general, the objective of this new Special Commission of the European Parliament is to carry out a holistic analysis on AI, through an approach that provides a long-term common position and highlights the key values and objectives of the EU related to AI in the digital age, in particular by analysing the future impact of AI on the EU economy in terms of skills, employment, education, health, transport, tourism, agriculture, environment, defence, industry, energy and e-government.

The Special Committee will present to the relevant Standing Committees of the Parliament an assessment defining common EU medium and long term objectives and including the main steps needed to achieve them, starting from the following documents published on 19 February 2020: (i) "Shaping Europe's digital future", (ii) a European Data Strategy, (iii) the White Paper on Artificial Intelligence, (iv) and the Report on the security and accountability implications of Artificial Intelligence, including a roadmap on "A Europe fit for the digital age".

6.4 European Economic and Social Committee (EESC)

EESC adopted in July 2020, in plenary session, an opinion related to the Communication by the Commission "[Shaping Europe's digital future](#)". While expressing support and appreciation for the digital transformation, the EESC voices civil society's concerns and aspirations regarding the impact on the EU labour market.

The conclusions of the document are summarized below:

- The package of new initiatives builds on the momentum and facilitate the development of a digital economy and society.
- While the human-centred approach of all Commission initiatives is appreciated, a European path to digitalisation should be considered to secure privacy and self-determination and to fuel economic growth.
- Continuing the right track, the European legislation must evolve in tandem with digitalisation, being sound, ambitious, with clear liability rules. Processes should be flexible and adaptable, as a result of the dialogue between the parties involved – in particular employees' opinion. The EESC, as representative of civil society organisations, is ready to play its part in this.
- Digital transition needs to be just, sustainable and socially acceptable, therefore It is important to invest in the right future technologies, to promote the training of people and to create trust among citizens, encouraging them to take an active part in the transformation.
- A European single market for data, based on European rules and values is needed, as reinforced by the Commission. This is the premise for a new EU industrial strategy supported by the EESC, the premise to shift to more digital, clean, circular and globally competitive EU industry with sustainable companies, including a strategy for SMEs.
- While there is a need for technological sovereignty, preserving the European social model, this should not be defined in opposition to others and should allow to reap the benefits of global cooperation.
- Education and training that provide digital skills are the key, but the EESC calls on the Commission to better distinguish between technical and social competences. Social inclusion of vulnerable groups in the digital training is necessary.
- Europe's digital future based on a human-centred approach will only be successful if people can have trust, therefore the EESC reinforces Commission's intention to make a clear distinction between high-risk applications, which should be subject to strict regulation, and low-risk applications, that rely on self-regulation and market mechanisms. This implies a systematic analysis of the various applications.
- The EESC emphasizes the need for a strict legal framework to defend the rights of online workers, including collective bargaining.
- The EESC insists on the need to address digital public services' development, especially as cross-border e-government services could strengthen the (digital) single market and improve public regulation and coordination.
- The coronavirus pandemic showed the challenges EU has in terms of people unequipped and unprepared to use up-to-date digital technologies, as well as digital infrastructure capable to ensure inclusive access for communicating, studying, and working remotely.
- The positive and negative effects of the shifts in working and consumption habits pursuant to the Covid-19 crisis should be considered when developing new policies. The digital transformation should be monitored through a comprehensive and EU-funded, work-oriented research initiative on "digitalisation for decent work". The EESC shows that Industry 4.0 systems should be designed to be efficient and employee-friendly for ensuring the success of digitalization in the long run.

With regards to the AI White Paper proposed by the Commission, the EESC adopted its opinion in plenary session on July 16, 2020 (rapporteur Catelijne Muller).

While applauding the Commission's initiative to unlock the potential of the AI technology in EU, the EESC however considers the focus solely posed on data-driven AI too narrow to make the EU a true leader in cutting-edge, trustworthy and competitive AI.

In developing and employing AI, a multidisciplinary research approach is needed, by involving disciplines like law, ethics, philosophy, psychology, labour sciences, humanities, economics, etc.; (ii) a broad debate with relevant stakeholders (trade unions, professional organisations, business organisations, consumer organisations, NGOs) and (iii) the wide public should be educated and informed on the opportunities and challenges of AI.

Another matter of concern is the impact of AI on the fundamental rights and freedoms.

The EESC opposes the introduction of any form of legal personality for AI, to avoid hampering the preventive remedial effect of liability law and the moral hazard risk in both the development and use of AI.

Biometric recognition for tracking, surveillance and detecting emotions should not be allowed in Europe's human-centric approach to Artificial Intelligence (AI). Moreover, there is no scientific evidence that a person's feelings can be read based on biometrics. AI use may be allowed for personal identification purposes and only in accordance with GDPR.

In terms of defining the high-risk, the European Commission's proposal is that an AI application should be considered high-risk if it involves both a high-risk sector (healthcare, transport, energy and parts of the public sector) and high-risk use (with a few exceptions to be defined). Only in such situations specific regulations and governance structures are involved. However, the EESC considers that potentially dangerous ambiguities may arise from this definition, giving the example of Facebook's political advertising, influencing people's votes even from non-Member States. EESC believes that high-risk should not be limited to certain sectors, but rather should be defined through a list of common characteristics used as a health-check to any sector.

Pursuant to the COVID-19 crisis, the EESC is highly concerned about an uncontrolled surge of tracking and tracing technology that penetrates society much faster and with much less scrutiny than before. Such systems meant to fight the pandemic should be just as robust, effective, transparent, ethical and legal.

The EESC concludes that its input is essential for a sound legislation on AI, just like in 2017, when EESC pleaded and succeeded to promote a "human in command" approach to AI in Europe.

6.5 Committee of the Regions (CoR)

In turn, CoR debated "A strategy for Europe's digital future and a strategy for data" and adopted an opinion in its plenary session of October 12-14, 2020.

The opinion covers eight different areas of digitalization: (i) Digitalisation and the associated opportunities; (ii) Vision for a digital society; (iii) Reliable infrastructure and digital foundations; and (iv) People in the digital world; (v) A European community of digital values; (vi) Data as digital fuel for the economy and a basis for decision-making; (vii) Europe in the world; and (viii) Assessment of the Commission communications.

Several important ideas from the document are listed below:

- The CoR underlines the need for tangible benefits for people to be generated by digitalisation, therefore the development of digital technologies should consider legal, social policy, social, environmental, cultural and, ethical aspects.
- Solely cross-sectoral digitalisation will create disruptive business models and innovative digital services and products, with start-ups playing an important part.
- The CoR stresses that the EU Digital Agenda is implemented with the key contribution from local and regional authorities, in particular within Smart Cities and Smart Regions; local government is essential in ensuring access to data and its availability.
- There is a major need to support capacity-building in citizens and businesses, in particular SMEs, as well as in the public sector, for fully benefitting from digitalisation, thus increasing the resilience of the economic and social systems.
- During the Covid crisis, digitalisation was key for education, working life, the economy and smoothly functioning government.
- The values and ethical rules, the social and environmental standards of the EU are relevant in the digital sphere and should be promoted globally.
- Data sovereignty should be protected at all levels, from individual to pan-European level. As the EU Court of Justice's judgment of 16 July 2020 (case C-311/18) invalidated the privacy shield between the European Union and the United States, the CoR calls on the Commission to clarify the effects immediately.
- While the EU Treaty mentions the economic, social and territorial cohesion, the digital cohesion is becoming an additional dimension of the traditional concept of cohesion.

Particularly interesting are a series of observations that identify potential challenges the Commission has to address in implementing the digital transformation, as follows:

- While AI-driven services and other innovative technologies have a huge potential to deliver benefits to consumers and service providers, they should be non-discriminatory, transparent, and should explain the algorithms, liability and the protection of privacy; market-dominant platforms should be assessed with reference to European values.
- Digital techniques are instrumental in the implementation of the Green Deal.
- The CoR is concerned about the cuts in the Digital Europe programme within the Multiannual Financial Framework.
- The social and economic importance of the (5G) in mobile communications should be better explained to citizens, including its possible disadvantages, to avoid them becoming victims of fake news.
- Fibre optic technology is indispensable digital infrastructure and basic service should be available to all EU citizens, especially in rural remote areas.

On the "White Paper on Artificial Intelligence"

A second important opinion adopted by CoR in its plenary session of October 2020 was the one concerning the White Paper on Artificial Intelligence put together by the Commission. Pointing out the AI is already an integral part of the society and offers tremendous opportunities in terms of contributing to the economy and addressing societal and environmental challenges, the CoR stresses that local and regional authorities are instrumental for investment and building trust in AI.

Because, as intended by the Commission, the protection of fundamental rights and consumers' rights, as well as liability and product safety rules are key elements of the ecosystem of trust, it is crucial that the AI regulatory framework contains safeguards to eliminate bias and discrimination on grounds of gender, ethnicity age, disability or sexual orientation. At the same time, the relevant regulations should not hinder innovation and should promote knowledge sharing and ensure cooperation between the private and public sectors at European, national and regional level. This involves, as underlined in the CoR Opinion, a multi-level governance, interconnecting local, regional, national and European networks. In more detail, the document draws attention to a series of important aspects like:

- The need to link the AI White Paper with other Commission policy areas, such as the Skills Agenda for Europe and the Recommendation on a common Union toolbox for the use of technology and data to combat and exit from the COVID 19 crisis, in particular concerning mobile applications and the use of anonymised mobility data.
- The need to build up trust in AI by addressing questions about data ownership, algorithms and platforms steps to ensure public values, who gains most from AI applications and who pays for them; trust is a precondition for AI to generate new entrepreneurship.
- Subsidies for digital innovation hubs should focus on fostering local and regional ecosystems.
- The Commission's commitment to the development of AI in the public sector should be also extended at local and regional level, where authorities can play an important role in speeding up (new) AI technology as "launch customers"; related to this, a procurement framework and legal tools should be established, offering local and regional authorities possibilities to make best use of opportunities.
- The need to address the current gaps in the legislative framework, that is not tailored to AI, like the introduction of safeguards to ensure that AI is free from bias and does not reproduce discrimination on grounds of gender, ethnicity age, disability or sexual orientation.
- The urgent need for a regulatory framework foreseeing the strict test of necessity and proportionality, providing appropriate safeguards and remedies and clearly defining the responsibilities and accountability as well as proper public oversight.
- The need to establish a national supervisory authority in each Member State, responsible for ensuring, assessing, and monitoring compliance, and who will facilitate exchange of views among relevant stakeholders and the civil society.
- Educational and training measures are also necessary to increase the digital skills (both in the education system and in ongoing vocational training). This applies equally to the wide public and the technical professionals.

7 Digital Europe: the new Programme to finance digitalization

Digital Europe is the new EU funding program entirely dedicated to digital transformation for the period 2021-2027 and focused on building the EU's strategic digital capabilities and facilitating the large-scale deployment of digital technologies.

On 14 December 2020, the negotiators of the Council and of the European Parliament reached a provisional deal on Digital Europe. The programme will run for the duration of the Multiannual Financial Framework (MFF) for 2021-2027, with an overall budget of €7 588 million.

The provisional agreement will now be submitted to the Committee of Permanent Representatives of the Council (Coreper) for the formal approval.

It seems necessary to underline that a central role in the program will be dedicated to Digital Innovation Hubs (DIHs) (50), i.e. the network of European digital innovation hubs that will provide access to technological expertise to companies - especially SMEs - and public administrations. The objective of these hubs is to bring together, on the one hand, industry, businesses and administrations that need new technological solutions and, on the other hand, businesses that have market-ready solutions.

In particular, Digital Europe will support the adoption of digital technologies in areas of public interest, alongside the European Green deal.

The construction of essential digital skills will be divided into 4 specific areas:

- **High-performance computing** (€2 226 914 000): construction of a data and supercomputing infrastructure, quantum computing.
- **Artificial intelligence** (€2 061 956 000): common data spaces across the EU and an EU-wide cloud infrastructure, large testing facilities, expand the European AI platform to access tested AI technologies.
- **Cybersecurity and Trust** (€1 649 566 000): implement the network of competence centres with MS (starting from 2021), certification systems, IT security tools, dissemination of cybersecurity solutions in all economic sectors.
- **Advanced digital skills** (€577 347 000): in particular on cybersecurity, artificial intelligence and high-performance computing, short-term training courses, masters, platform for skills and work.

Furthermore, deployment, **best use of digital capacity and interoperability** (€1 072 217 000) will be cross-cutting elements to which particular attention will be paid.

The main areas of application of the Digital Europe program include health, climate, environment, manufacturing, agriculture, energy, finance and mobility.

In addition, the new framework program for post-2020 research and innovation, Horizon Europe, with a budget of 94.1 billion euros, will also help strengthen the scientific and technological foundations of the EU, promoting its competitiveness.

The funds of the Cohesion Policy 2021-2027, for which the EU Commission has proposed a budget of € 330.6 billion, will also help support the EU's digital transformation and innovation on several fronts, from the digitization of SMEs to development of new ICT skills.

Finally, again in the field of financing, the new InvestEU fund, which brings together the financial instruments charged to the European budget currently in existence, has a window dedicated to the themes of research, innovation and digitization, with guarantees for 11.25 billion EUR. In particular, synergies are envisaged between Digital Europe and InvestEU for the realization of the objectives linked to the digitization of the private sector and artificial intelligence.

8 Discussion

Decisions supported by data in the agri-food sector enable the improvement of efficiency in the management of natural resources (water, soil, biodiversity) and agricultural inputs (fertilizers, pesticides, plastics, medicines) making it possible to move towards a greener and more climate-smart agriculture, which reduce your environmental and climate impact, increase resilience and soil health and reduce costs for farmers.

In the future, the generation and exploitation of data will make possible hitherto unimaginable solutions to feed the world and protect the planet. But for the so-called economy of data to be inclusive and fair must have the participation of the productive sector and other agents in the chain.

The general regulation does not have a special consideration of the specificities of the food sector as there is there is a particular need to address access to small and medium farms to technology. Therefore, any initiative in the field of digitization of the sector agri-food and rural areas should take into account the family farming model that characterizes the sector agri-food sector, to help reduce the structural gap.

Digital agriculture relies on the interrelation between the farmer with other actors in the food chain. One of the most powerful elements that will sustain its deployment is the need to trace information related to sustainability, food safety and other remarkable characteristics of the products. The enormous amount of data that will need to be managed will force the use of interconnected digital systems between the different links in the chain, to provide consumers with greater transparency and reliable and traceable information through the use of digital enablers such as IoT, Big Data, Blockchain and Artificial Intelligence. The legal framework should allow to better regulate these interrelations, not only among agrifood value chain actors, also with technological providers for a more balance food system for the ease of Digital transformation in the agricultural sector.

9 Conclusions

General regulation is being developed at EU level whilst the Digital Transformation of the economy and in particular of Agricultural sector is occurring. It can be seen as an opportunity to balance the relations and roles of different actors in Digital transformation

Data governance is being tackled both from a agricultural sector self-regulatory approach promoted by COPA-COGECA that set the basis for the relations among different actors involved in the management and use of data and also from the EU institutions that promotes data spaces and data protection aspects to allow an enhanced framework for data management and use looking to solve aspects like interoperability, consistent and robust data availability, re-use and the interoperability , which will be impact also in the organizational and institutional governance of the different actors operating in the system.

In the EU agriculture there is a strong variability of farm structure typologies, with a majority of Small and medium family farms, that as stated in the CAP regulation for 2021-2027 that will need a special protection and specific measures to allow the Digital Transformation and avoid the increase of the already existing structural divide.

Artificial intelligence will play a crucial role in the future interrelations and the balance of the bargaining power and the bias of the decisions all along the value chain, from farm to fork, thus the regulation on Artificial intelligence and other

The technology adoption for a successful Digital Transformation in agriculture, induces a stronger need for digital capacities, digital training that has also an impact on attracting newcomers and young farmers to rural areas.

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