

Sensors are rapidly changing the way of farming in Europe

Product Watch: Sensors for farm management of livestock value chain

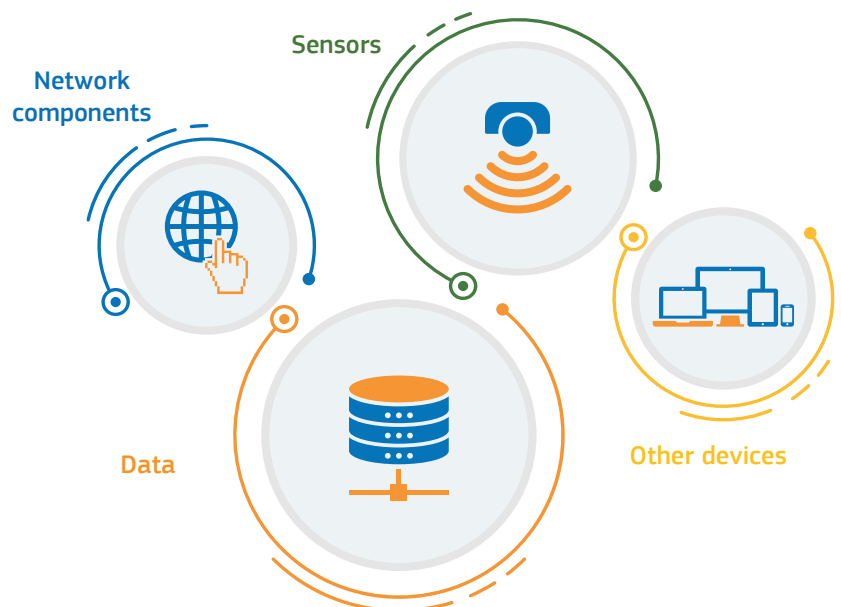
The industry currently finds itself in the fourth industrial revolution, also known as **Industry 4.0**, which has far reaching impacts, also affecting the **agri-food value chains**

Internet of Things

Sensors can take many forms, either as **stand-alone** devices, as **part of another object** or **integrated** into a service to gather relevant information.

The use of sensors allows farmers to make **informed decisions** about their crops and livestock.

The application areas are vast, **covering the entire food industry** from meat and fish to dairy, fruit and vegetables and bakery and can be used to manage resources and **measure conditions**.



Reaping the fruits of fast-paced market growth



The **global agricultural sensor market** is valued at **€1.12 bn** in 2018, reaching **€2.34 bn** by 2026

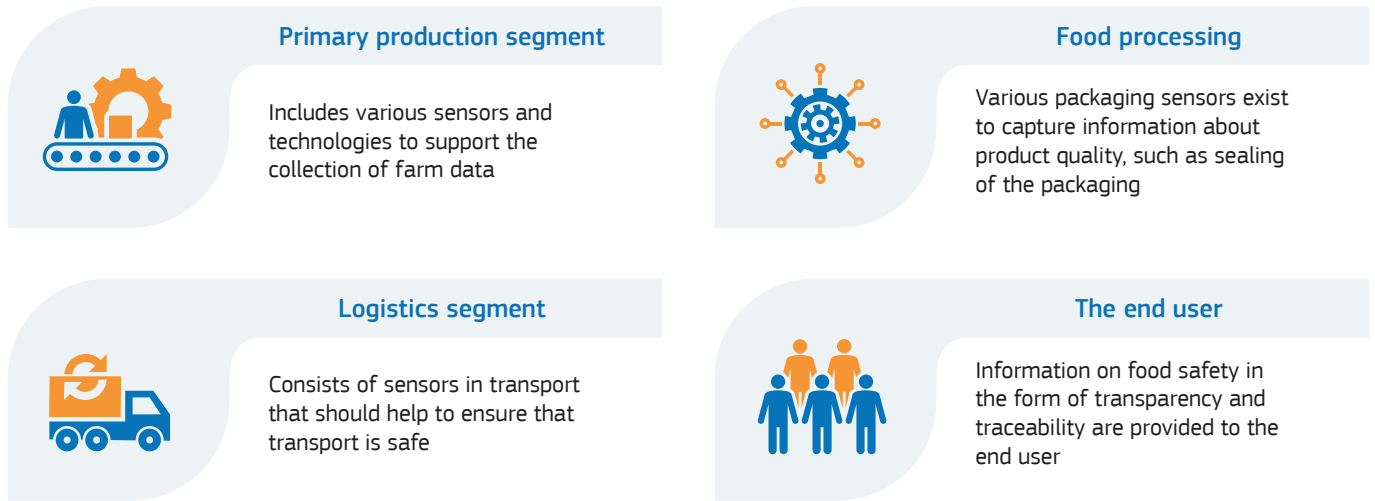


Europe accounts for the **second fastest growing market** in the agricultural sensors for 2018



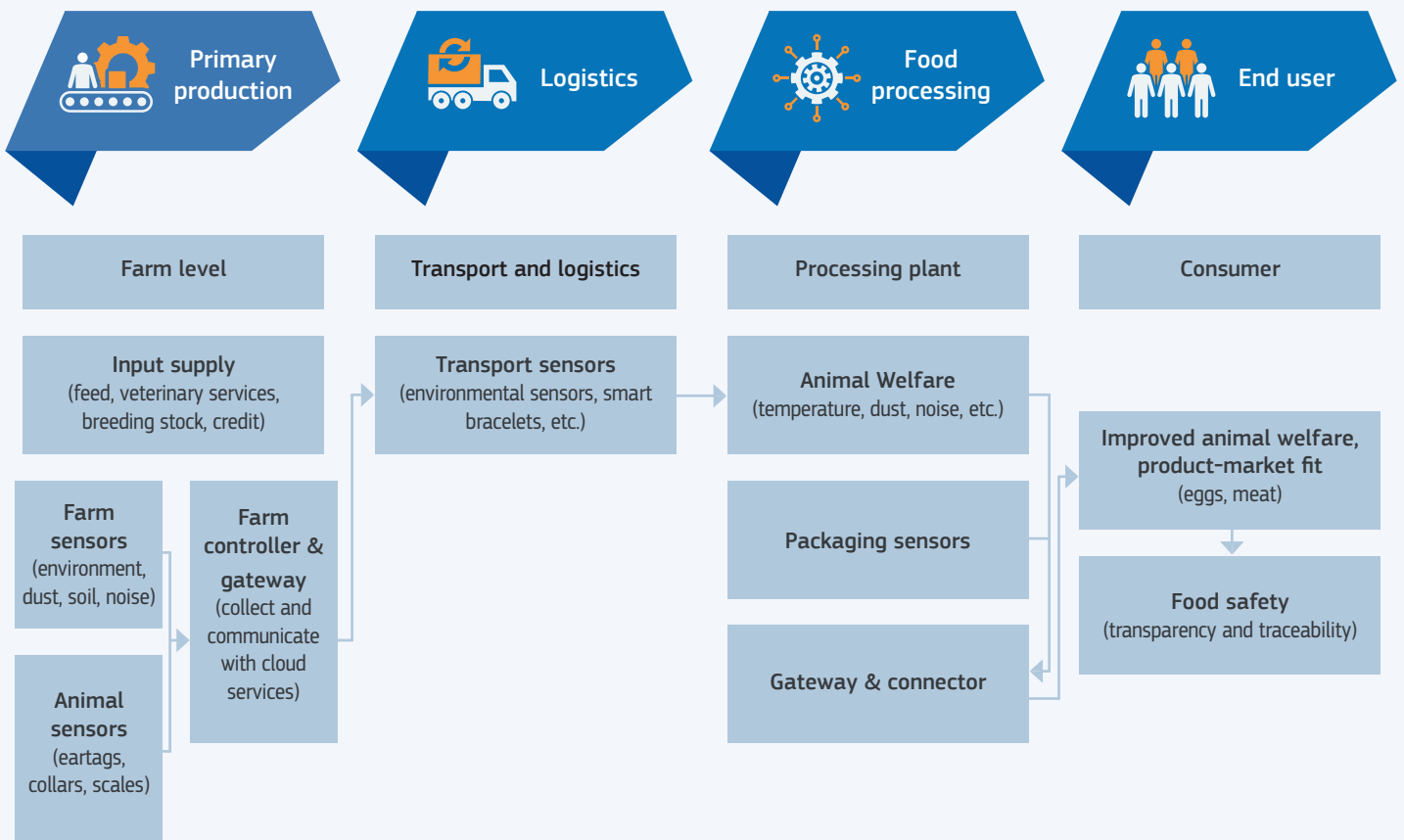
The **livestock monitoring market** is forecast to grow from **€1.38 bn** in 2020 to **€2.31 bn** in 2025

The sensors for farm management of livestock value chain consists of 4 main elements

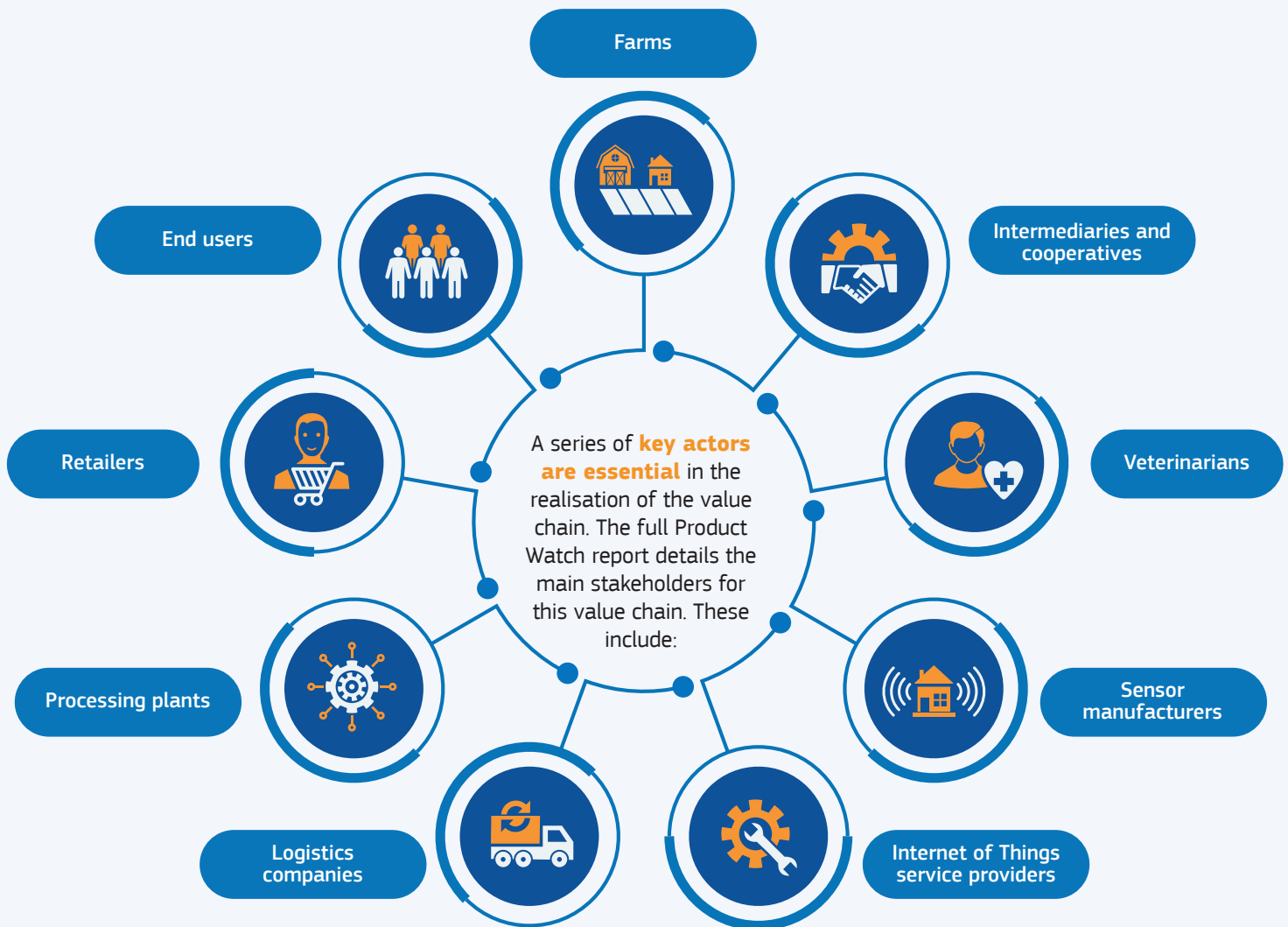


The Internet of Things supports the entire value chain by connecting sensors and data systems with one another

The sensors for farm management of livestock value chain shows interlinks between the key actors



Along the entire value chain, the Internet of Things, including cloud services, machine learning and blockchain technologies, connects the sensors and data systems with one another. Sensor data that is collected throughout the value chain, including tracking and tracing, enables transparency and traceability.



Analysis of EU competitive positioning

Strengths



- Leading in precision livestock farming
- Improved decision making
- Product quality and traceability

Challenges



- Market size in the US versus Europe
- Cost aversion and implementing cost for the farmer
- Framework conditions

Opportunities



- Production efficiency
- Acceptance of livestock farming
- Improved earnings and addressing labour shortages

Risks



- Robustness and quality of sensors
- Data sharing

What are the **important lessons learnt** for farm management?



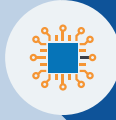
Improving uptake of Research & Development

Spreading of use should be encouraged so that systems can become cheaper and more available to farms.



COVID-19 – impact on the agri-food sector

3 important principles in current circumstances:
1. Health safety in the agri-food sector;
2. Enhance food safety;
3. Interregional trading activities are continued.



Support for digitalisation of the agri-food sector

Farmers miss a clear signal on how to and what to digitalise. Incentives to connect data across the value chain would complement this digitalisation.



Availability of foreign workers

Farmers have to rely on the efforts of foreign workers to support their activities. Travel restrictions can restrict this.



Targeted legislation

European policies on mandatory reduction of food waste would be an enabling factor to the use of sensors in the livestock value chain.



Livestock interaction

Livestock keeping means intensive interaction between humans and animals. Especially during pandemics, avoid contact with animals.



Learning from previous outbreaks in the livestock sector

Farmer organisations continue to be alert for outbreaks such as H5N8 bird flu.

About the Advanced Technologies for Industry (ATI) project

The ATI project – funded by the European Commission – supports the **implementation** of Europe's new growth strategy with a systematic monitoring of **technological trends** and reliable, **up-to-date data** on advanced technologies.



The **Product Watch** analyses novel products that are based on advanced technologies for the development of goods and services - enhancing their overall commercial and social value. It supports cluster organisations and S3 partnerships, providing intelligence on innovation areas where European regions could team up and invest together.

For more information, read the full Product Watch report on Sensors for farm management of livestock value chain here: <https://ati.ec.europa.eu/reports/product-watch/product-watch-sensors-farm-management-livestock-value-chain>

