



6/8

CURRENT TRL  
& TARGET TRL

6

COUNTRIES

> 1000

CONNECTED ANIMALS

- 15%

TOTAL WORK EFFORT

COUNTRIES

PARTNERS



PARTNERS



AGRICOLUS

applifarm



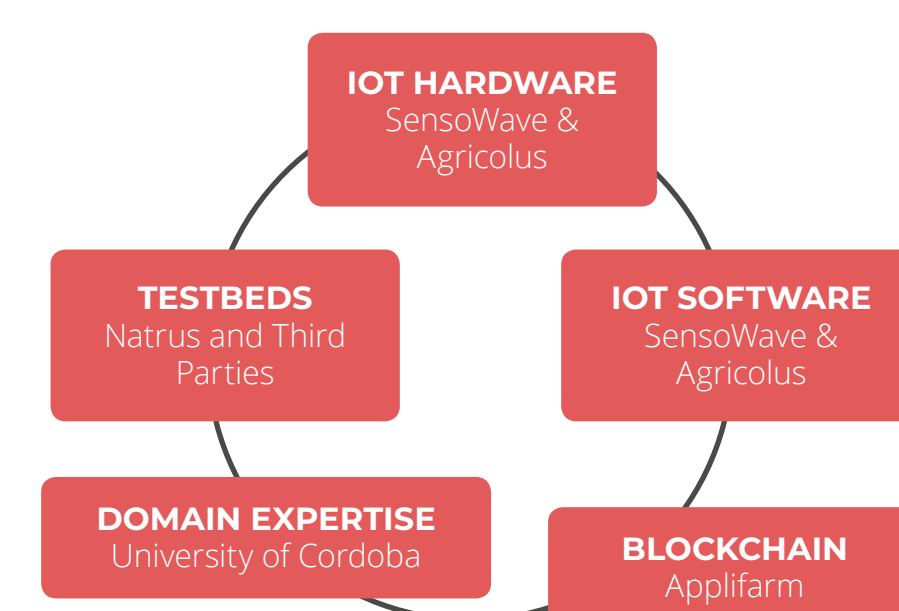
UNIVERSIDAD DE CORDOBA



VEDELLA DE LA VALL D'EN BAS

# 5.4 DECISION-MAKING OPTIMISATION IN BEEF SUPPLY CHAIN

The beef supply chain is a complex system, involving crop farms, livestock farms, feedlots, transporters, slaughterhouses, retailers and consumers. Current traceability systems collect few data from every segment of the supply chain, mainly to assure food safety to consumers. Shared value systems based on integrated data allow every segment of the supply chain to improve production efficiency and product quality.



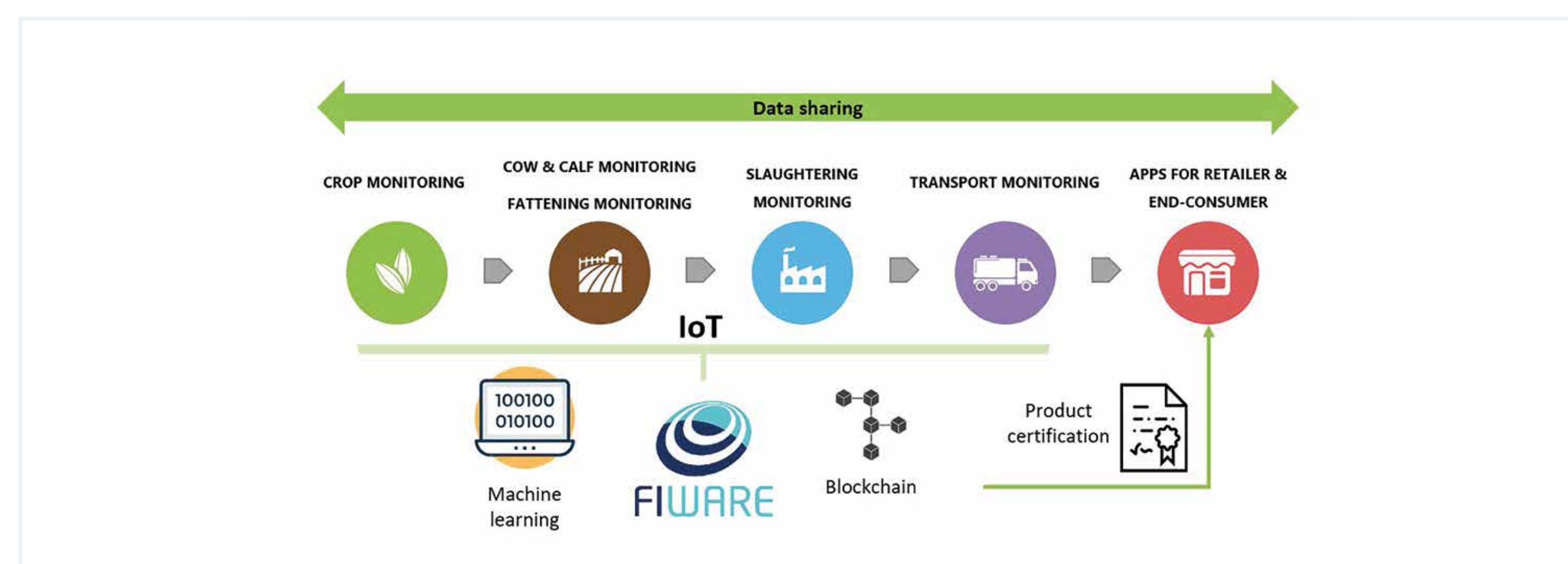
**PARTNERS**

Sensowave, Agricolus, Applifarm, University of Cordoba and Natrus

**THIRD PARTIES**

FIWARE, COVAP, Azienda Agraria Luchetti Basilio & Claudio, and livestock farmers (from Bulgaria, Croatia, Ireland and Portugal)

## HOW IT WORKS



- Data acquisition throughout the entire supply chain is carried out through:
  - IoT stations are used for environmental and soil conditions in crop fields;
  - Smart collars and IoT ear tags for beef cows' or calves' location, activity and temperature;
  - IoT scales to gather information about fattening calves' growth rate;
  - IoT multi-sensor stations for transport and slaughtering conditions - temperature, dust, noise, etc;
- A FIWARE-based platform is used for the integration of the collected supply chain data;
- Machine learning algorithms strengthen a decision support system focused on production efficiency and product quality;
- A Hyperledger Fabric blockchain service ensures data traceability and immutability.

## THE IMPACT

### OUR OBJECTIVES

- Bridge the gaps in data sharing across every segment of the supply chain through IoT;
- Foster a technological framework that facilitates data sharing to improve decision-making and consumer trust;
- Improve the reliability of data through blockchain technology.

### ON ECONOMY

- Fertiliser and water consumption (-10%);
- Reproduction rate (>90%);
- Animal losses (<5%);
- Total work effort (-15 %);
- Selling price through certification (+10%).

### OTHER IMPACT

- Resource efficiency improvement: fertiliser, water and feed;
- Average fattening days (-15%);
- Greenhouse gas reduction through optimisation;
- Certification of grass-fed beef;
- Animal welfare improvement.