

## Creation of shared value for the beef supply chain from IoT and blockchain (ShareBeef)



### Resumen:

The project "Creation of shared value for the beef supply chain from IoT and blockchain" (ShareBeef) is one of the use cases of the project "Internet of Food and Farm 2020" (IoF2020), coordinated by Wageningen University and Research. ShareBeef aims to develop a technological framework based on Internet of Things (IoT), open data, massive data analysis (Big Data) and blockchains (blockchain) to enable the exchange of data along the whole production chain of beef (calf producers, feedlots, slaughterhouses, distributors and consumers) with a double objective: 1) increase the productive efficiency of the different processes in the chain, reducing their environmental impact, and 2) improve the information on the production processes that reaches the consumer to meet their demands for information, promoting informed and responsible consumption. The partners of the projects are: two technological partners (Digitanimal and Agricolus SMEs), an end user (NATRUS meat company) and the University of Córdoba. The demonstration farms are located in six countries: Spain, Portugal, Croatia, Ireland, Italy and Bulgaria.

The main objective of this project is to demonstrate the potential of the integration of IoT devices, Open Data, cloud platforms (FIWARE), Big Data processing and blockchain in order to create a shared value system in which data from different segments of the food supply chain are integrated and shared in order to improve decision-making in relation to resource efficiency, satisfaction of consumer demands, etc. Special attention will be paid to low-cost sensors and data interoperability, in order to maximize the impact of the proposal.

A holistic beef production demonstrator combining crops, rearing, fattening, logistics, slaughtering and consumers' aspects will be used as use case. This use case will be complemented with other partial use cases (combining some of the previously cited segments of the supply chain) with the aim of considering the variability of European beef production systems.

### Objetivos:

The main objectives are:

- To monitor and optimize production conditions, health and animal welfare at the farm and fattening level.
- To control and optimize animal welfare during transport and slaughter.
- To provide consumers with better information about beef production conditions.
- To certify specific good production practices: grass meat, animal welfare, etc.
- To develop support systems for decision-making based on data from various segments of the production chain, enabling the improvement of production efficiency, sustainability and profitability.
- To develop data governance models that allow data sharing while preserving data privacy and ownership.
- To Increase trust between segments of the beef supply chain using blockchain.

### Objetivos contribución:

The University of Córdoba acts in the project as a domain expert, carrying out the design and validation tasks of the precision livestock systems used in it. In addition, UCO is responsible for the design of decision support systems and the dissemination of project results.

### Impacto:

The main expected results of the ShareBeef project are:

- Improved productivity and quality of crops for animal feeding based on: crop growth monitoring, adjustment to irrigation and fertilization needs, reduction of labor and other cost, etc.
- Improved resource efficiency and environmental impact of beef production systems at farm and feedlot based on reduction of cow and calf losses, detection of calving events, health and welfare, early warning alerts, real-time monitoring of calf growth, etc.
- Improved animal health and welfare during rearing, fattening, transport and slaughtering.
- Increased trust among different segments of the beef supply chain based on the sharing of automatically measured data, as well as on need-adapted data governance models.

**Presupuesto:** 593,000.00

### Equipo de investigación

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**Universidad:** Universidad de Córdoba

**Enlace:** <https://www.iof2020.eu/trials/meat/iot-and-blockchain-for-beef-supply-chain>

**Estado:** published

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