

# Blockchain: a technology for transparency in FLW prevention

**FOODRUS**

**Authors:**

**PRACTICE ABSTRACT NO.20**

**Ainhoa Alonso Vicario,  
Nekane Sainz Bedoya**  
UD

ainhoa.alonso@deusto.es  
nekane.sainz@deusto.es

**#blockchain #hash  
certificate #transparency  
#integrity**



Blockchain technology has been evaluated for its potential to support the prevention of food loss and waste. This technology can enhance transparency in documenting the flows and activities within the food supply chain and provide an immutable record of certificates.

At FoodrUs, blockchain is introduced in the form of the R3 Audit toolkit solution. Within this solution, a blockchain network is deployed using Hyperledger Fabric to support the certification process. In addition to the blockchain infrastructure, an application for accessing, (writing, and reading) data is also developed. This tool serves both producers and certifying agencies by providing information such as the issuance date, expiration date, and validity of certificates. The inherent properties of blockchain technology ensure the integrity of the certificates, preventing tampering. Moreover, the tool is designed to streamline the process of accessing information from other project tools also developed in FoodrUs, such as the Social Actions Module or the Food Supply Chain. It aids certifying agencies in auditing and verifying critical points defined in the waste management process. Thus, blockchain technology is utilized for certification in FLW through:

- The deployment of a blockchain network involving four organizations: UD, Hazi, Eroski, Florette.
- The implementation of a smart contract or chaincode to ensure transparency in the certification granting process.
- The deployment of a tool for certification agencies to register indicators for decision-making and issue certificates.



The FOODRUS project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°101000617.

This tool enables certification companies to issue certificates to specific entities storing the corresponding hash in the blockchain. Companies can also extract information from other project tools to determine if indicators have been met. Users can log in to the tool to explore the certificates they have issued and stored in the blockchain. Additionally, they can review the value of the certificates and track any updates they have received.

## About

Coordinated by the University of Deusto and comprising 27 partners from 10 different European countries, the EU-funded FOODRUS project aims to limit food losses and waste, and to promote resource efficiency across all stages of the agri-food value chain. FOODRUS is working to tackle the food waste and losses by creating resilient food systems across nine European regions. To achieve this, the project will test 23 circular solutions through diverse forms of collaborative innovation.

## Consortium



[www.foodrus.eu](http://www.foodrus.eu)



The FOODRUS project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°101000617.