



PROJECT OVERVIEW

MARCH 2021



This project has received funding from the European Union's funding programme H2020 research and innovation programme under grant agreement 101000723.

Project ID card



Acronym	FAIRCHAIN
Title	Innovative technological, organisational and social solutions for FAIRer dairy and fruit and vegetable value CHAINS
Topic RUR-06-2020	Innovative agri-food value chains : boosting sustainability-oriented competitiveness under the programme SC 2 "Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy"
Budget & funding	Overall budget: 8 036 566 € EU contribution: 6 996 636 €
Duration	1 November 2020 – 31 October 2024 (48 months)
Consortium	A total of 20 partners from 8 countries

Context

- There's a pressing need to **transform existing food systems** to address economic, social, environmental and health-related issues.
- Dominant agri-food systems are based on **long supply chains**
 - Globalised, concentration of profit, high-tech processing 
 - Resource efficiency, economies of scale, mass production, lower prices 
- **Short food value chains** involve a limited number of actors (no more than one intermediary)
 - Geographical proximity, fairer price for farmers, creation of jobs at local level 
 - Insufficient production volumes, higher prices, limited distribution 
- Taking the advantages and shortcomings of long and short food value chains as a starting point, FAIRCHAIN will contribute to the development of **intermediate food value chains** in the **fruits and vegetables and dairy sectors** with a focus on **postharvest steps**.



Objective

Enable small and mid-size farmers and food producers to scale up and expand production of nutritious food through **competitive intermediate value chains** at the local and regional level.

SPECIFIC OBJECTIVES



Test, pilot and demonstrate **technological, organisational, social innovations** that have the potential to facilitate the aforementioned objective.

Deliver a **set of innovations** at technology readiness level (TRL) 7.

Develop **business models** associated to these innovations and carry out environmental, social and economic impact assessment.

Formulate **recommendations, create tools and guidance documents** to ensure uptake and replicability of value chains developed within FAIRCHAIN.

Technological innovations

- **Flexible filling machine** using green/sustainable packaging materials; designed to fulfil hygienic requirements; and adapted to short up to long production run
- **Emerging postharvested technologies adapted to co/by-products**
 - Innovative beverages based on whey
 - Cleaning agent from fermentation of unfit for consumption co-products from food and vegetable processing
 - Co-product (kernel) valorisation via pyrolysis
- **Information & Communication Technologies (ICTs)**
 - GPS tool to effectively localise wild berries
 - Application using blockchain technology to select, retrieve and interpret measurable data from operational processes

Organisational/social innovations

- **Sharing of processing equipment and/or infrastructure**
- **Logistical models** which reduce the consumption of packaging (returnable packaging)
- **Innovative funding systems** based on philanthropic income streams
- **Food innovation incubator** for co-creation of solutions by different actors in a regional value chains.

FAIRCHAIN

Consortium

A multidisciplinary partnership including 20 organisations in eight countries.

Research

INRAE, RISE, FH JOANNEUM, Fraunhofer-Gesellschaft, Universiteit Gent

SMEs

Scaldopack, Petrel, Laboratoires Standa, Sofies SA, Biofruits SA, Cogiterre SARL, Synexilis, Stymfalia

Industry

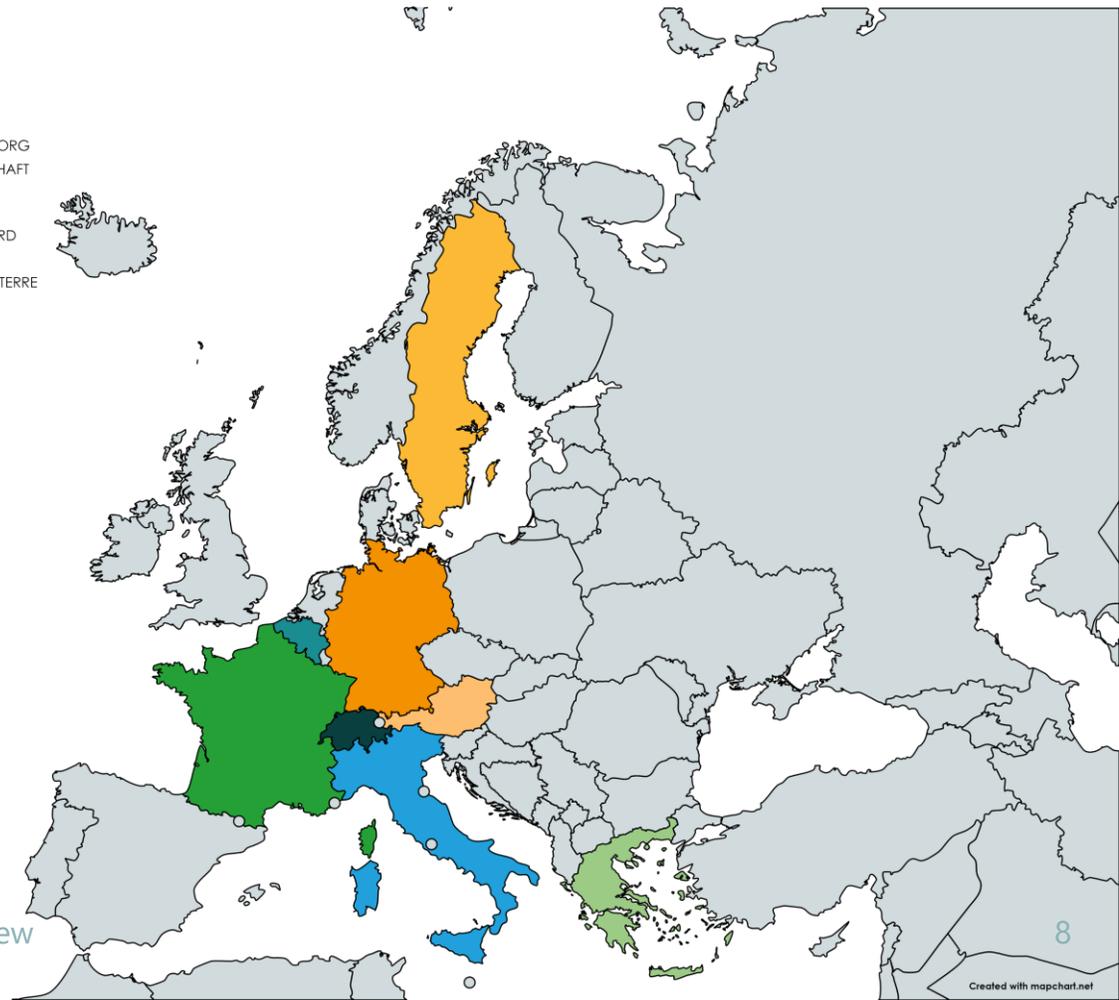
Pack4Food, Greenyard, Sodiaal

NGOs

Confagricoltura, ISEKI-Food, ACTIA, Make.org

PARTNERS

- INRAE, PETREL, STANDA, SODIAAL, ACTIA, MAKE.ORG
- FRAUNHOFER GESELLSCHAFT
- CONFAGRICOLTURA
- U GENT, SCALDOPACK, PACK4FOOD, GREENYARD
- RISE
- SOFIES, BIOFRUITS, COGITERRE
- JOANNEUM
- SYNEXILIS, STYMFALIA



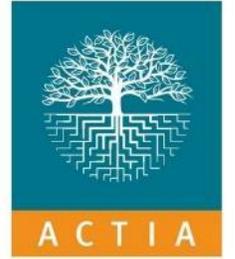
INRAE

RISE

FH JOANNEUM
University of Applied Sciences

GHENT
UNIVERSITY

Fraunhofer
ISI



Pack4Food

Confagricoltura

PETRAEJ
COMMERCE CIRCULAIRE

scaldopack

sofies
leading sustainability

SYNELIXIS

Bi'fruits

Cogiterre



ISEKI Food Association

MAKE.
ORG
FOUNDATION

SODIAL
INTERNATIONAL

GREENYARD

STANDA

Linked third parties



06/05/2021

itab
l'Institut de l'agriculture
et de l'alimentation biologiques

ACTALIA

SLU
Swedish University
of Agricultural Sciences

MONTS & TERROIRS
De merveilleux fromages



STRATEGY



Approach

1. Map innovations that could contribute to the development of intermediate food value chains
2. Test in real-life conditions of a minimum of eight innovations through six case studies
 - The six case studies represent a value chain in the fruits, vegetable or dairy sectors involving small and mid-sized actors in a specific territory facing an unsatisfactory situation.
3. Formulate recommendations based on results

Co-creation with multiple food chain actors

Multi-perspective analysis that considers technological, organisational and social innovations

Multi-stakeholder validation





5/6/2021

SWITZERLAND

Co-product valorisation and generation of additional added value for SMEs and regional stakeholders

- **Current situation requiring improvement**
 - In the current setting, co-products management generates costs.
 - More specifically, fruits unfit for consumption remain underexploited and kernels are not valorised in a local and fully transparent manner.
- **Main activities in FAIRCHAIN**
 - Production of an alternative cleaning agent via biofermentation of co-products that are unfit for consumption, for innovative cleaning applications with bio-preservation effects and possibly alternative feed or photo-sanitation applications.
 - Assess potential and interest for a regional scale pyrolysis-based innovative business model to valorise co-products like fruit kernels, with potentially equipment sharing or mobile workshop able to work out the co-products close to the producers and/or the users. Define accordingly a regional proof of concept.
 - Explore the potential for various positive externalities, like lowered ecological footprint, improved food security, increased added value generated per unit of fruits sold, or improved links between farmers and processors. This requires some process improvements and deeper knowledge of business models to reach a successful demonstration within the project.



FRANCE

Production of innovative dairy drinks or desserts based on co-products of cheese manufacturing

- **Current situation requiring improvement**
 - Whey, a by-product of cheese production, is not sufficiently exploited.
 - Small producers need to generate revenue from whey. However, collection is difficult as they are often isolated
 - Small producers cannot afford the installation of bottling lines needed to produce whey-based drinks.
- **Main activities in FAIRCHAIN**
 - Use whey to develop valuable products, in particular healthy whey-based drinks.
 - Bring a zero-waste aspect to the distribution of fresh/room temperature liquid products.



SWEDEN

Developing wild berry business to boost local economy and social cohesion

- **Current situation requiring improvement**
 - Wild berry refining industry is underdeveloped, as wholesalers prefer to export
 - Reliance on foreign labour for picking.
- **Main activities in FAIRCHAIN**
 - Develop an ICT tool to map and help detect the location of wild berries to facilitate picking by the local population
 - Development of local berry cleaning and sorting companies and industrial regional processing companies



BELGIUM

Innovative packaging machine for small and mid-sized actors

- **Current situation requiring improvement**
 - For small and mid-sized actors, manual handling represents a considerable amount of time and hinders productivity and potential exploitation on the market.
- **Main activities in FAIRCHAIN**
 - Development of a mobile and flexible packaging machine for short (small batches, diverse batches) up to long production runs with possibilities for sustainable packaging materials
 - Development of guidelines for hygienic design of packaging machines
 - Use of ICT/blockchain technology for equipment sharing
 - The case study will focus on the vegetable and fruit industry, but application can be extended to the dairy sector.



GREECE

Traceability and reliable information sharing in local dairy production

- **Current situation requiring improvement**
 - Consumers are increasingly demanding in terms of transparent information on food quality, integrity and origin.
 - Proving the usage of traditional processing of locally produced raw material, preservation of nutritional value and compliance with high hygienic standards can be challenging.
- **Main activities in FAIRCHAIN**
 - Retrieve key operational information from Stymfalia cheese and yogurt production value chain and breeders and associate it with product characteristics.
 - Design and implement the mechanisms and applications to allow access for interested parties through the usage of blockchain infrastructure.



AUSTRIA

Food innovation incubator

- **Current situation requiring improvement**
 - There's currently no regional infrastructure where regional food chain actors can exchange on and find solutions to existing gaps with adequate support.
- **Main actions**
 - Launch of an incubator programme that encompasses consulting, networking and prototyping of products, processes and technologies for intermediate food value chain actors

Keep in touch with us!



fairchain-h2020.eu



[@FairchainEU](https://twitter.com/FairchainEU)



[FairchainEU](https://www.linkedin.com/company/fairchaineu)

