



“Cooperation and Collaboration Network on Food Losses and Waste” WEBINAR

SUMMARY REPORT

Cooperation team

(ELIKA, Consorcio EDER, ACR+, UD, BCC, FEBEA)

17 March 2022



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

N°101000617.

16TH FEB. 2022: "COOPERATION AND COLLABORATION NETWORK ON FOOD LOSSES AND WASTE"

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The main objective of this document is to summarize the content of the webinar that took place on February 16th 2021 in the framework of the **Cooperation and Collaboration Network of FoodRUs (CCN)**. Elika, as coordinator of the CCN projects, organized the event with the assistance of the FoodRUs Cooperation team, and most of the CCN members participated (90%).

1.1. Motto and Objectives:

The motto of the event was **“On the road to knowledge transfer and expertise learning”**. Each participant in the event represented a finished or an ongoing project linked to Food Loss and Waste Prevention.

The specific objectives of the meeting were to:

- *Share barriers, lessons learned and best practices from the finished projects to the ongoing Food Waste reduction projects.*
- *Verify the persistence of Food Waste prevention and reduction barriers and discuss the practices that have been proven successful in overcoming these barriers; share lessons learned and build on past experiences.*

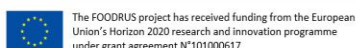
The webinar is expected to improve project cooperation and knowledge sharing, as well as identify potential cooperation activities to address specific barriers.

1.2. Agenda:

AGENDA



Time	Presentation	Presenter
10:00 -10:10	Welcome and CCN webinar' objective	Mónica de Prado, ELIKA
10:10 -10:25	Participants round of introduction	CCN projects' representatives
10:25 -10:35	Project presentation	FoodRUs coordinator- Ainhua Alonso, UD
10:35 -10:45	FoodRUs barriers in the pilots and followers' regions	Agnese Boccalon, ACR+
10:45 -10:50	Break-out sessions' structure	Mónica de Prado, ELIKA
10:50 -11:40	Break-out session on Barriers and Best practices for FW reduction and prevention	All participants
11:40 -11:55	Recap of the discussion of the 3 break-out sessions	Rapporteurs
11:55 -12:00	Next steps and closure	Mónica de Prado, ELIKA



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1.3. Methodology

The Break-out session on Barriers and Best practices for Food Waste (FW) reduction was divided into three parallel thematic groups (**Valorization**, **Prevention technologies** and **Prevention strategies**). In each group, barriers and best practices from each finished project were presented. The aim was for the representatives of finished projects to share their own experiences, focusing on best practices and lessons learned.

Break-out session Part I by finished projects



Best practices and lessons learnt

- *What are the best practices and lessons learnt from your project?*
- *What advice would you give to the ongoing projects to avoid errors in the development of solutions? Which system functioning aspects should not be forgotten?*
- *Have you identified new opportunities or open future challenges?*


Barriers

- *Which barriers have you identified in your project?*
- *What is your perception about the limiting factors that produce these barriers?*



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Afterwards, the objective was to open a discussion among all the projects, finished and ongoing ones, taking into account the provided information.

Break-out session Part II by all projects




Open discussion

- *Based on the presentations of the findings, which aspects do you think are crucial for the solutions to be successful?*
- *Which factors will determine replicability at the broader scale?*
- *Do you see any linkages and complementarities between your project and the other projects? Is there room to initiate some cooperation together (on a complementarity basis)?*



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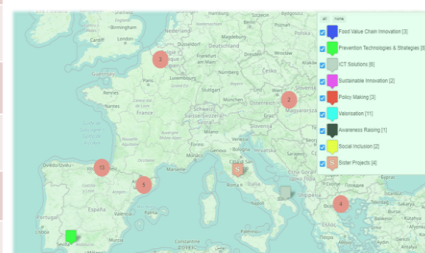
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1.4. Participants

The participants who attended the CCN webinar included representatives of 29 CCN projects and 13 FoodRUs partners involved in Cooperation activities as well as pilot leaders.

FINISHED PROJECTS (13)		ONGOING PROJECTS (15)	
CLEANFEED	WASTE4THINK	LOWINFOOD	NEWFEED
GISWASTE	SavingFood	CO-FRESH	WASEBI
BREWERY	REINWASTE	PLOUTOS	ESPIGOLADORS
VALORLACT	STREFOWA	FAIRCHAIN	CEMIS
ORHI	ECOWASTE4FOOD	AgroBRIDGES	HORTIMED
DECISIVE	WASTELESS	SISTERS	Model2Bio
REFRESH		ZEROW	SIRCLES
		ECOFEEED	



A [CCN map](#) was created based on the main categories identified by the CCN coordinators in the FLW survey. As a result, the CCN project participants were divided into **three thematic groups**:

1. Valorization:

Moderator: Agnese Boccalon (ACR+) / **Rapporteur:** Elisabet Carbonell (EDER) / **FoodRus representatives:** Marianne Thomsen (UCHP), Aimar Méndez (ELIKA), Mihai Pera (EC)

Finished	Coordinator	On-going	Coordinator/partner
CLEANFEED	David San Martín - AZTI	ECOFEEED	David San Martín - AZTI
GISWASTE	David San Martín - AZTI	NEWFEED	David San Martín - AZTI
BREWERY	David San Martín - AZTI	WASEBI	Charlotte Jacobsen - DTU
VALORLACT	Marta Cebrán - AZTI	ESPIGOLADORS	Raquel Díaz - Espigoladors
ORHI	Iratxe Acha - SAIOLAN	ZEROW	Bart Van Droogenbroeck- ILVO
DECISIVE	Anne Trémier- INRA		

2. Prevention technologies: technological solutions, ICT tools, etc

Moderator: Ainhoa Alonso (UD) / **Rapporteur:** Gian-Luca Gasparini (FEBEA) / **FoodRus representatives:** Sandra Herrero (AIN), Antton Alza (ELIKA)

Finished	Coordinator/partner	On-going	Coordinator/partner
REFRESH	Hilke Bos-Brouwers Wageningen University	-	LOWINFOOD Clara Cicatiello - Tuscia University
WASTE4THINK	Dario Pellegrino - ENG	SISTERS	Carolina Peñalva - Fundación AITIIP
SavingFood	Mpampis Chatzimallis- ViLabs	CEMIS	Tsvetomir Kalchev - MAGISTERIUM
		HORTIMED	María Blázquez - INKOA, SL
		Model2Bio	Tamara Fernández - CEIT
		ZEROW	Leticia Requena – ITENE Frank Berkers - TNO

3. Prevention strategies: social innovations, policy making, consumer behavior, food value chain, etc.

Moderator: Mónica de Prado (ELIKA) / **Rapporteur:** Stefani Novoa (BCC) / **FoodRus representatives:** Alexandra Kolarik (Free Food), Daniel Lissoni (GIE), Nuria Cases i Sampere (ACR+)

Finished	Coordinator/partner	On-going	Coordinator/partner
WASTE4THINK	Marta Vila – Oficina de Gestión de Residuos - Mataró Townhall	SIRCLES	Daniel Rodríguez - Agencia residuos Cataluña
REINWASTE	Rosana García - AGAPA	AgroBRIDGES	Eirini Efthymiadou - Q-PLAN
STREFOWA	Elisabeth Schmied - BOKU	PLOUTOS	Aikaterini Kasimati- AUA
ECOWASTE4FOOD	Alfred Vara /Miriam González- Agencia residuos Cataluña	CO-FRESH	Andrea Molero – CNTA Edelbis López – Ghent University
WASTELESS	Gyula Kasza - National Food Chain Safety Office	FAIRCHAIN	Daniel Rossi - CONFAGRICOLTURA
		ZEROW	Angele Tasse-ICLEI
		ESPIGOLADORS	Anna Cornudella- Espigoladors

1.5. Break-out session outcome

Although the projects were divided into three parallel thematic groups during the break-out session (Valorization, Prevention technologies and Prevention strategies), it was decided to cluster all the lessons learnt and barriers because many of them were similar or common independently of the thematic group belonging to. Nevertheless, the barriers and the lessons learnt have been classified into different categories according to their type and/or source.

1.5.1. BARRIERS DETECTED

A. LEGAL BARRIERS:

Description: Legal barriers refer to all kinds of administrative restrictions imposed by EU regulation, the State, Region or municipalities using their power when regulating a specific sector. While testing and implementing their solutions, project stakeholders encounter important barriers in this field.

Within this context, the legal barriers that have emerged during CCN webinar's parallel sessions have been classified as follows:

A.1. Policy Clarity:

1. Difficulties when **interpreting legislation**, resulting in misunderstandings in terms of boundary conditions for actors to operate, responsible organizations, allowed and not allowed practices. Moreover, there are legislation gaps that do not fully cover food handling and proper (end) management of the organic fraction by users. (**CLEANFEED, GISWASTE, BREWERY, STREFOWA, WASTE4THINK projects**).
2. **A risk that the proposed solution does not fit within the legal framework currently available (legislation gap)**. If the proposed solution is legal, it carries the risk of being unusable or causing an implementation delay until an authorisation is obtained (**CLEANFEED, GISWASTE, BREWERY, REINWASTE projects**).
3. Complexity of **bureaucratic procedures** are limiting factors for stakeholders (**DECISIVE project**).
4. Dealing with legal barriers in areas such as **health or commerce** (e.g. best before date) (**ECOWASTE4FOOD project**)
5. **Hygienic constraints** and misunderstandings in the food and catering sector (**STREFOWA project**).

A.2. Policy alignment:

6. **Different legal and regulatory systems** in each territory (energy, food, waste...) made that what had viability in one country had not in the other (different energy regulation in France and Spain, made it interesting "energy valorization" solutions in France, but were not in Spain). (**ORHI project**).
7. **Limited competencies at the municipal level**. The local administrations have limited competences regarding waste prevention at municipal level taking into account the current legal framework. As an example, a municipality can carry out awareness campaigns or introduce some benefits for developing some prevention practices, but they cannot obligate restaurants or supermarkets to donate food, introduce a doggie bag, or soimilar prevention strategies. So that, most of the actions are implemented in a voluntary basis when the promoter is the local administration, because there is not legal framework yet. (**WASTE4THINK project**).

8. Difficulties to evolve from good practices to **innovative policies** at different legislation levels (Europe, state, region...) (**ECOWASTE4FOOD project**)

A.3. Fiscal Policy:

9. **Durability of incentives:** If energy incentives are removed (biogas) the viability of the solutions are directly affected (**VALORLACT project**).
10. Specific incentives are required to encourage relevant actors to adopt new technology and products. (**DECISIVE project**).

A.4. Others:

11. In some cases, **legislation** (wastewater, land contamination) is not fully implemented in order to avoid discarding practices. (**VALORLACT project**).

B. TECHNICAL BARRIERS:

Description: Technical barriers include all those project/solution implementation aspects that are either related to a vital component of the solution (i.e. input materials) or to a process related to the solution achievement (e.g. food waste processing into organic compost). Hence technical barriers refer to all those aspects that directly contribute to the execution and achievement of a given solution or aim of the project.

Within this context, the technical barriers that have emerged during CCN webinar's parallel sessions have been classified as follows:

B.1: Time considerations

1. Despite the initial positive engagement, the project partners were unable to fully exploit the potential of testing the adoption and marketability of the solution at the industrial level due to a lack of time on the part of private sector companies, particularly R&D departments, to test the project's new products. The Innovation departments are typically overburdened with work and devote insufficient time to testing solutions that were not developed internally by the company. (**ORHI project**).
2. Sometimes, the unit time chosen for validation is not representative; a minimum of one week is required to account for the variability between days. (**CLEANFEED, GISWASTE, BREWERY projects**)
3. Even though a three-year term appears to be a long time when the project is first launched, some implementations require more time. (**ORHI project**)

B.2: Technological aspects:

4. There are no pilot-scale technologies available for validation tests. This means that we may encounter difficulties validating processes with a high TRL (**CLEANFEED, GISWASTE, BREWERY projects**)
5. A need to select the most efficient technologies and be aware of the costs. Limited funding is sometimes an obstacle. There is a risk that the "cost of the entire process exceeds the expected value". (**CLEANFEED, GISWASTE, BREWERY projects**).
6. A lack of cross-domain interoperability and open standard hampering data exchange efficiency (**WASTE4THINK project**)

7. A lack of consensus on common language/taxonomy and smart application architectural principles (**WASTE4THINK project**).
8. Technical infrastructure is immature or insufficient (e.g., Municipalities, Charities entities) (**WASTE4THINK project**).
9. Technical issues, e.g., cooling or harvesting techniques (**STREFOWA project**)
10. There are unexpected problems when testing “in vivo” assays (animal diseases, climatic conditions) that can lead to a misinterpretation of the results. (**CLEANFEED, GISWASTE, BREWERY projects**)
11. Difficulties to establish baseline because there are measuring difficulties (**REFRESH project**).

C. ECONOMIC and SYSTEM BARRIERS:

Description: System barriers are related to the overall functioning of processes within the socio-economic system where actors operate. These kinds of barriers are determined by the intrinsic rules of economic systems. In a consumption-based linear economic system, for example, the produce-use-dispose principle is the governing functioning pattern of the economy. In this case, one of the system barriers related to it is the development of waste reduction solutions that must fit within the use-produce-dispose principle (hence, mainly acting at the dispose level only) as opposed to more circular approaches that revert the logic of production processes and where waste prevention is conceived already during the production level.

Within this context, the economic and system barriers that have emerged during CCN webinar’s parallel sessions have been classified as follows:

C.1: Economic and financial drivers for new products and business models:

1. Lack of investors for implementation of solutions: private implication to make a business case is required. (**VALORLACT project**).
1. Lack of financial resources or difficulties in using them (public procurement processes...) (**CLEANFEED, GISWASTE, BREWERY, WASTELESS projects**)
2. Geographic atomization of by-product generation: represents a high barrier. In this case, high logistics costs may render the solution unprofitable. Logistic challenges are required to centralize by-products (**CLEANFEED, GISWASTE, BREWERY projects**).
3. Existing market options need to foster waste prevention. (**WASTE4THINK project**)
4. There are difficulties in supporting existing experiences and projects to be sustainable. (**ECOWASTE4FOOD project**)
5. High cost of some of the proposed solutions (**REINWASTE project**)

C.2: Processes and Scale aspects:

6. For small producers, it is difficult to get a viable mass of products to be valorized. This is a matter of critical mass generation and scale when considering the geographical boundary conditions for testing and implementing new solutions. It is also a social issue when we consider the number of actors who must be engaged in order for the solution to be successful. (**CLEANFEED, GISWASTE, BREWERY projects, VALORLACT projects**).
7. If validation involves different steps in the value chain, coordination failures of the different stages may indicate that the validation is not successful. (**CLEANFEED, GISWASTE, BREWERY projects**)
8. The scale of the circular system is still a question. (**DECISIVE project**).

9. Low development of new activities in new scenarios (urban farming) (**DECISIVE project**).
10. There are a lot of potential synergies but very few are implemented. Methodologies to foster symbiosis collaborations exist, but improvement in assuring “economic profit” for all parts is needed. (**ORHI project**).
11. Dependence on a single or a few individuals. (**REFRESH project**)
12. Misunderstanding of the necessity of monitoring and reporting (learning + assessing). (**WASTE4THINK project**)
13. Difficulties to share information among stakeholders (**REFRESH project**)
14. Difficulties to implement strategic collaborative approaches because countries differ very much in the constellation of stakeholders that need to collaborate (there is no blueprint). (**REFRESH project**)
15. Lack of digital skills of volunteers to operate the tools developed (**SavingFood project**)

C.3: Viability of new products and adequate support to new business models:

16. The new food and feed products obtained from by-products presented very good acceptancy by consumers and good quality and functionality, nevertheless these solutions were not fully implemented because of the high price of the products in relation to other similar ingredients already available the market or because of the small size of the producers, that made difficult the installation of new manufacturing lines (in the case of food products). In relation to the energy production alternative (biogas) changes in the legislation and incentives policy at national level, were crucial for the final economic feasibility. Therefore, legislative stability and implication of possible investors/end users from the beginning of the project are the main key factors for guaranteeing the success. (**VALORLACT project**).
17. Waste Management Systems have a vendor lock-in problem (**WASTE4THINK project**).

C.4: Knowledge and awareness:

18. There is opportunity to learn from abroad solutions. Existing technologies working in other countries (for example, Japan) must be validated (technically and market) locally, which takes time, and needs implication of local entities. (**ORHI project**).
19. Main limiting factors are missing information, perception of the problem and networks (**STREFOWA project**).

D. BEHAVIOURAL BARRIERS:

Description: From a food waste prevention perspective, behavioural barriers embrace all those user-dependent actions that determine a specific outcome in terms of food waste generation, prevention and reduction. These barriers are frequently attributed to the consumers category, as consumers are considered to have the freedom to choose among different options through their behaviour. Despite the fact that this last affirmation is questionable (the consumers’ degree of freedom in their choices is proportional only to the options that are offered to them), end-user behavioural choices do affect the functioning of the food system, and hence food waste prevention and management practices.

In the following section, we enlisted behavioural barriers by extending their description also to companies' decisions. This overlaps with the economic and system barriers categories described above, as companies are primary actors of economic systems. Hence, wherever relevant, the interpretation below must be regarded as referring to both groups. Within this context, the behavioral barriers that have emerged during the CCN webinar's parallel sessions have been classified as follows:

D.1: Stakeholders' continued engagement and role in solutions implementation

1. Sometimes involved actors show a great interest but have a low compromise during the project. Clarifying the up-front commitment of engaged partners can help ensure a more stable commitment throughout the project duration and beyond. This is also related to the issue of "ownership of the solutions" which is an important factor when aiming for high stakeholders' engagement. **(SavingFood project)**
 2. Stakeholders 'difficulties in carrying out the technical work led by a partner or implementing the solution at real scale. **(CLEANFEED, GISWASTE, BREWERY projects)**.
 3. If the stakeholder is a small company (2-3 people) collaboration is difficult and there are technical difficulties; the company may also find difficulties in carrying out the technical work led by the partner. **(VALORLACT project)**.
 4. Opposition or negativity to cooperate between different stakeholders in the same sector are observed. **(VALORLACT project)**.
 5. Cooperation with technical partners and pilots: lack of common understanding and methodologies for co-creation of solutions **(WASTE4THINK project)**.
 6. The FW reduction activity was not taking place within the core activities of the business, or not organised by core departments: **(REFRESH project)**.
- E.g., a Kitchen appliances store that participates in a municipally initiated, household-oriented activity/campaign on food waste reduction.
 - E.g., difficulties that are experienced by non-core departments, like the HSE department, or a sustainability officer sitting in the communication dept., that have difficulties in connecting with production, shop-floor etc. to actively change the way the company changes its way of production. This phenomenon is called 'pigeonholing'.

D. 2. Awareness raising

7. Lack of awareness of companies about the inorganic waste issue. **(REINWASTE project)**
8. Continue with awareness raising initiatives. Awareness is increasing, but there is still work to be done to improve waste management in the agri-food sector. **(REINWASTE project)**.

D.3 General aspects:

9. There is a lack of time and belief in the proposed models when working with citizen volunteers **(SavingFood project)**.
10. There is a significant difference between what people say should be done and what is actually done. **(WASTE4THINK project)**
11. Moving from reuse to prevention.
12. **Covid-19** has been a significant barrier in recent years. Covid-19 has been a significant barrier in recent years as it has affected the school activities and trainings of teachers. It also posed new challenges in the food waste frontier: food stockpiling, especially in the beginning of the Covid-19 epidemics, contributed to food waste, although lockdowns resulted in a more careful handling of food leftovers in the households. **(WASTELESS project)**.
13. Social norms - information and education to adopting new behavioural practices . **(WASTELESS and REFRESH project)**.

1.5.2. LESSONS LEARNT/BEST PRACTICES AND OPPORTUNITIES:

A. Actors:

1. Early engagement for cooperation among different actors is crucial. This holds true for different interaction levels, namely: public **administrations** (municipalities, regional governments...), public and private actors, research institutions and civil society actors. The role of public entities as enablers and facilitators of new processes is essential.
2. Networking among **partners** and their implication for the identification of evidence-based critical and winning factors for project implementation is highly necessary.
3. **Project Stakeholders**: having representation of each stage of the VC and maintaining communication with key stakeholders enables action and outcomes to be multiplied. It is convenient to facilitate collaboration among them and work towards a common goal.
4. Collaboration with **technology suppliers** is essential to gaining access to cutting-edge technologies.
5. Creating a **common platform** among partners/stakeholders helps to create pledges, community engagement and obtain data statistics.
6. The importance of **volunteers** as knowledge disseminators: people interested in meeting people offline through events, the ability to talk about experiences, and the ability to use the role of an ambassador.
7. Sometimes **new projects are born** from previous projects. The relationship among actors, and the detection of opportunities as well as the demonstration of new possibilities in a project can allow us to continue working on a following project.

B. Financial- Legal aspects:

8. Providing a **legal and financial framework** is essential.

C. Time aspects:

9. The time required to develop and test solutions is often underestimated. This frequently causes delays in project implementation and the necessity to narrow down options that were all expected to be examined.
10. **Long term** feasibility. The solution to be implemented must necessarily be viable in the long term and not only in the pilot period.
11. **The real project duration** must be considered in order to implement all the solutions.
12. Quality is not always a real problem; **training and time** are essential!

D. Geographical and Scale aspects:

13. **Logistics** must be considered: dispersion of by-products generators must be taken into account.
14. A **critical mass** to make an effective measurement is necessary.
15. Innovative technologies that work in other far-away countries (i.e. Japan) might be still totally unknown in Europe. Although the solution has been proved to work, demonstrating its benefits locally will be neither easy nor fast.

E. Processes (this includes the overall functioning of the proposed solutions):

16. **Contrasting objectives and expected results** is required to stay focused on the market.

17. Developing a deep analysis of possible risks in a realistic **contingency plan**.
18. It is essential to stimulate **innovation** during the transition to a more efficient use of food resources; **Innovative technology** is an opportunity for valorization.
19. FLW prevention boosts **creativity and innovation** (technological, social, legal, business, etc) in the search for solutions.
20. Solutions may offer to the companies **new food products** for market diversification.
21. **Environmental profit** can be obtained: LCA assessment demonstrated that a decentralised local valorization of biowaste can have less environmental impacts than a centralised organisation. This better environmental performance is mainly due to the local use of digestate added-value product
22. Planning **strategies** and focusing on practical **experiences**.
23. **New packaging solutions** are possible (tie-type grouping elements, recycled and recyclable materials, biodegradable/compostable materials, light weighting of plastic films)
24. **Transferability** should be adjusted to the type of company and its capacity to increase expenses in order to acquire new equipment.
25. **Pilots** that are **not predefined** at the proposal stage can be developed in a collaborative process.

F. Data science and digitalization:

26. There are major benefits to implementing a **Software Reference Architecture**.
27. Adopting **agile methodologies** in solution development is key.
28. **ICT**- Visibility and dissemination of the project are crucial: a diverse range of communication channels (from social media to roadshows) is required to maximise the impact of the projects.

G. Knowledge Transfer & Awareness

29. **Monitoring** the effectiveness and social acceptance of the **social actions** is essential in order to accumulate better knowledge.
30. Farmers, food companies, retail, consumers, and policymakers should **share knowledge and raise awareness** about primary production.
31. Perform effective communication in order to **increase the visibility of existing initiatives**.
32. A lot of information and solutions are available for rapid transfer among all actors.