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D3.7 - 100 Innovation frameworks for CRFS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000640

Key information	Data
Project reference no	101000640
Project acronym	Cities2030
Project title	Co-creating resilient and sustainable food systems towards FOOD2030
Project start date	October 1st, 2020
Duration	48 months
Project Coordinator	Mr. Nicola CAMATTI
Project website	cities2030.eu
Work package (WP)	WP3
WP leader and co-leader	P07 UNRF
Deliverable leader	P25 LLF
Contributors and authors	P25 LLF (Kristine ROLLE, Zane SILIŅA), contributors: P 1 UNIVE, P2 EPC, P3 BRUG, P3A, P4 VIVES, P5 IAAD, P6 INAG, P7 UNRF, P8 VEGO, P9 INVE, P10 VEJLE, P11 QUA, P12 INTO, P13 AGRIA, P15 BRH, P16 TTZ, P17 BIOZ, P18 QUAR, P19 SINNO, P20 UPM, P21 WIT, P22 MATIS, P23 FFI, P24 VPR, P26 GGP, P27 AGFT, P28 IASI, P29 ARFI, P30 ICT, P31 CORR, P32 VIZ, P33 IVM, P34 MOMS, P37 PRIM, P38 IUAV, P39 RTU, P40 CITAG, P41 HARL
Peer reviewers	P07 UNRF, Kyriakos E. GEORGIOU and Edna YAMASAKI
P.R.approval date|version	29.03.2022
Document type	Report
Document/filename	Cities2030_D3.7_100 Innovation frameworks for CRFS
Document title	100 Innovation frameworks for CRFS
Deliverable number	D3.7
Abstract	Deliverable D3.7 introduces and describes 100 innovations and good practices in City Region Food System observed or developed by Cities2030 partners and stakeholders. All innovations are clustered in 10 categories based on the Food and Agriculture organization of the United Nations CRFS concept.
Project delivery date	31.10 2022
Submission date	31.03.2022
For public dissemination	YES

Disclaimer

Revision history

Version	Date	Comments & Status	Author
0	02/03/2022	The 1st version of the deliverable	P25 LLF
0.1	08/03/2022	The version takes into accounts comments from P02 EPC	P25 LLF
1.0	22/03/2022	The 2nd version of the deliverable	P25 LLF
1.0	24/03/2022	Reviewed by P07 UNRF	P07 UNRF
2.0	28/03/2022	The 3nd version of the deliverable	P25 LLF
2.0	29/03/2022	Approved by P07 UNRF	P07 UNRF
2.0	30/03/2022	Layout verified by PMO	P02 EPC

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100 INNOVATION FRAMEWORKS FOR CRFS

Executive summary

The aim of D.3.7. "100 innovation frameworks for CRFS" is to explore and map the novel trends in all applicable sphere of the food system identifying emerging digital and technological solutions, start-ups, practices of local communities, findings of international research projects and other initiatives that promote positive transformation in City Region Food Systems (CRFS).

Innovations were obtained by Cities2030 partners and stakeholders – collecting the innovations developed or owned by Cities2030 partners and stakeholders, as well innovation and good practices learned from publicly available sources.

In total, Cities2030 partners and stakeholders obtained more than 140 innovations and good practices that have already demonstrated positive impact on food systems and have potential for transfer to other territorial areas. The collected innovations offer a wide range of innovative solutions at all stages of the short food chain and related areas representing wide territorial coverage – from the European Union countries, Iceland, North Macedonia, Turkey, the USA, Canada and other countries.

All collected innovations are clustered into 10 thematic categories - food production, processing, distribution, markets, consumption, waste, food security, social inclusion & equality, ecosystem services, and livelihood & growth. The most innovations were identified by partners in the categories of production, consumption and food waste. However, it should be noted that clustering was a challenge as each innovation usually has an impact that spans a number of areas, therefore we encourage you to look at all the innovations not only for particular thematic category.

D3.7. "100 innovation frameworks for CRFS" not only explores the landscape of CSFS innovations, but also is an inspiration and learning tool for Cities2030 CRFS labs to explore, adopt, experiment and develop new solutions to tackle the challenges in City Region Food System.

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"What is now proved was once only imagined"
William Blake

Cities2030 project aims to facilitate transformation and restructuring of the way systems produce, transport, supply, recycle and reuse food in 21th century. New approaches, mindset changes, traditional paradigms shifts are crucial for transformation and creation of innovative solutions to tackle challenges in urban food systems and ecosystems. The purpose of the document is to explore and collect existing and demonstrated innovations in City Region Food System (CRFS).

The concept of innovation has very diverse definitions. Hundreds of them have been created worldwide to express the nature of innovation. Within the Cities2030 project, it is used in the most comprehensive way applying to any innovative or already existing product, service, approach, policy, process, mechanism or system that is currently implemented with successful results to enhance and contribute to the sustainability of urban food systems.

Collecting innovation in CRFS is challenging because each city and region is unique situation that requires and creates the innovations needed for a particular place. Our approach to identifying and exploring innovation was open and non-exhaustive, allowing Cities2030 partners to put forward innovations and practices that they have developed or learned from other sources and see as valuable for creating positive impact on CRFS.

Why do the innovations frameworks are important? First of all, it provides opportunity to learn from others, secondly it can serve as source of inspiration that CRFS labs can further develop according to the needs of their city's or region's food system. Collected innovations are clustered in 10 categories based on the Food and Agriculture organization of the United Nations CRFS concept. Six categories reflect the supply chain - from production to waste, and 4 categories are correlated key arenas. However, almost every innovation has an impact on several categories of CRFS, if you can't find an innovation in a particular category, we invite you to get acquainted with innovations in other categories where possibly you will find what you're looking for. Innovations will also be published in the Cities2030 website.

PRODUCTION

By 2050, 80% of food will be consumed in cities[1], which means that the impact of cities on food systems will increase. Such trends call for a review of existing forms of food production and the search for new solutions, in which the role of cities in food production is also growing. New approaches that stimulate greater cities cooperation with peri-urban and rural producers, as well increase the role of cities in food production in the way that respects the environment, are crucial for positive transformation in sustainable urban food systems. This chapter summarizes the innovations for food production and new collaboration forms in urban and rural environments from Spain, North Macedonia, Belgium, Germany, Italy, Iceland, Norway, Latvia and other countries.

Optimus Garden

Production, Consumption

Optimus Garden consists of a vertical farming technology to produce fresh, nutritious and 0 km food in our cities. Optimus Garden is a company that has created customized vertical gardens and orchards, which allow cultivation without soil and without pesticides, both outdoors and indoors, in half the time of a cultivation on land and saving more than 90% of water. It is almost not necessary to water the plants, since the autonomy is about two weeks. Through a mobile App, the users can get indications, on when to water the plants or when to harvest the vegetables at the optimum time. This innovation contributes to the reduction of the supply chain and pollution in the production of food in and for cities. The advantages are clear: cultivation without pesticides, with significant water savings, in less space and much faster. The environment in cities benefits from the food sustainability implied by the innovation, which in turn benefits the quality of life of citizens. Therefore, the direct beneficiaries are the users who can take advantage of this technology, while the indirect beneficiaries are society as a whole through the reduction of pollution and the availability of food in a much more direct way.

The innovative initiative has several impacts on the CRFS. It contributes to shortening the food supply chain, reducing pesticide consumption and thus reducing the carbon footprint and pollution in food production, as well as improving food quality. Optimus Garden is a model of sustainable food production that could be developed in many cities, which allows self-consumption of 0 km products and reduces pollution because it is not necessary to use land or pesticides. It is therefore an interesting initiative to implement in any city that wants to protect the ecosystem and the environment, as well as prevent pollution and promote sustainable and healthy food.

Location: Valencia, Spain
Source: Optimus Garden, https://www.instagram.com/optimusgarden/?hl=es

[1] Ellen MacArthur Foundation, Cities and Circular Economy for Food (2019)

Digitalized vertical farming in controlled environment

Production

The innovation represents a proof of concept about the feasibility of the business model and the importance of such methods of farming in improving the CRFSs and contributing to the fulfilment of the SDGs. Digitalized vertical farming in controlled environment (urban farming) is a concept that have the ability to greatly influence on the whole CRFS structure by shortening the value chain, increasing the access to healthy organic food, increase the transparency of the produced food, minimizing the ecological footprint and lowering greenhouse gas emissions. The main beneficiaries and users are the end consumers. The whole concept is based on innovative approach called contracted farming (prepaid for food on monthly or yearly basis) and implementation of digital and automation technologies in agricultural production in urban areas.

Shortening the value chain, increasing the access to healthy organic food, increase the transparency of the produced food, minimizing the ecological footprint and lowering greenhouse gas emissions.

This innovation represents a good opportunity to serve as an example of feasible business model in urban areas with little or no available arable land for production of food.

Location: Kumanovo, North Macedonia
Source: BilKi

Rooftop greenhouse

Production

Agrotopia is a state-of-the-art 9000 m2 rooftop greenhouse build by INAGRO where research on the latest greenhouse cultivation techniques and professional urban farming are done. Located on top of a warehouse of the agricultural auction market, Agrotopia is a striking example of integrating food production in an urban or urbanized environment with multifunctional use of space shared between different parties. Agrotopia aims to synergize with its surroundings by investigating how the functions of agriculture, industry and the city are intertwined. Some examples of this include innovative water recycling and the reuse of urban residual heat. Address challenges greenhouse horticulturalists face, such as the availability of space and high energy costs. The design and construction are a real learning experience. Agrotopia constitutes a suitable case study for urban greenhouse horticulture and highlights what to consider when realizing such projects.

Location: Roeselare, Belgium
Source: Inagro – Agrotopia, https://inagro.be/studierapport-ontwerpfase-dakserre-agrotopia

Eclo

Production, markets, waste

Eclo is a private company in the form of cooperative engaged in urban agriculture. It produces mushrooms and herbs through the recovery of waste materials from breweries (industrial residues - barley grains and wads) and bakeries (bread leftovers and residuals). Products are sold in shops and from the website where it is also possible to buy kit to grow mushrooms at home. Moreover, Eclo offers a delivery service by cargo-bikes. Circularity is at the base of this company concept. Inside a city as Brussels, somebody's waste (producers, shops, citizens) can become a new resource for somebody else. Moreover, the activity reuses and animates unused spaces, it represents an opportunity of awareness-raising, thanks to educational workshops on recycling and urban agriculture.

The synergy between food producers and sellers can be facilitated in the dense urban context, for the proximity of spaces and the facilities offered by the city (services, public transport, waste/products moving on a daily basis). All the reused waste is a waste that does not need to be treated (and moved) outside from the city.

Location: Brussels, Belgium
Source: Eclo, https://eclo.farm/

Grunted - professional eco garden rental

Production, processing, distribution, consumption, food security, ecosystem services

The innovation is the lease of certified eco gardens in a new and innovative way in Croatia. Young enthusiasts and experts from various fields have come together to create an innovative solution for all those who want to have their own eco garden and a place to rest and relax. The concept is designed to provide garden rental (as a collective rental with a diverse range of vegetables during the season or rent your own garden with the right choice of vegetables) so that a team of top technologists and farmers take care of garden improvement without worrying. From the comfort of his home, the tenant manages the garden via a web application when it suits him/her and has access from 0-24h to monitor the growth and development of vegetables. Garden care lasts all year round. The possibility of self-processing was provided only after the users passed the training and received a certificate in order to transform from a classic customer into a modern producer of their own food. The main beneficiaries are all the users as they are getting freshly grown vegetables that are organically grown for their families as well as education on the matter provided that helps the spread of what organic farming is and how good it is in terms of environment and climate. There is also a place for children to play and learn about gardening and eco grown vegetables, a place to have a barbecue and get togethers, even celebrate birthdays or other occasions.

Potential for innovation transfer is high (although the idea is protected by intellectual property) as it is a great concept for people all over the world to be connected to the source of their food and the new trends indicated that people want to see where their food is coming from. Owning a garden without being present, yet having it under control is a truly great concept.

Location: Prokljuvani near city Čazma, Bjelovarsko-bilogorska County region, Croatia
Source: Gruntek, https://mojgruntek.hr, https://www.facebook.com/mojgruntek.hr, https://www.linkedin.com/company/gruntek/

Watertuun

Production, processing

The urban farming project Watertuun aims to build the first aquaponics plant in and for Bremen to produce food where it is eaten: in the city. The idea is to avoid long transport routes, the use of medicines and pesticides, and to achieve sustainable food production. What is special about the use of an aquaponics system - the cultivation of food is without soil. With the help of the emerging show facility, the developer team wants to illustrate what sustainable food production in the city could look like and offers the opportunity to look behind the scenes in various environmental education programs.

Location: Überseestadt Bremen, Bremen, Germany
Source: https://watertuun.de/

Seestadthonig – honey production in city

Production

Seestadthonig founder and owner Andreas Bredehorn is dealing with the dying bees' issues and exploring solutions for producing honey in the city. Beehives are located on many unused house roofs or in areas of company premises. The Seestadthonig shows that it is possible to produce honey almost everywhere and thus to give bees more habitat. A number of regional companies also has joined Seestadthoning initiative, they design their business premises as bee-friendly premises, thus creating a new place for bees and insects and contributing to bees' support.

An important component of Seestaed projects is education. Schools and pupils are involved to gain insight into topics related to beekeeping in general and urban beekeeping in particular.

Location: Bremerhaven, Bremen, Germany
Source: https://seestadt-honig.de/

Kasseler bunker mushroom

Production, distribution, waste

The team of the "Kassel Bunker Mushrooms" project was driven by the question of how food can be grown in the city with accumulating resources without relying on large areas of land. The result is the cultivation of mushrooms. The team collects coffee grounds from cafés in Kassel by cargo bike and tram and uses them to produce substrate for mushroom cultivation. This means that no unnecessary CO2 is produced and mushrooms can be produces regionally. Different types of settlings grow from them, which are sold daily without long transport routes to people who value fresh food. The mushrooms grow underground in cellars. There are not only ideal conditions for mushroom cultivation, but also plenty of unused space.

Location: Kassel, Hessen, Germany
Source: https://www.kasseler-bunkerpilz.de/

Venice lagoon project starting a new chain of oyster farming based on local production

Production, consumption, markets

A best innovative practice of the project Horizon 2020 project MAREA: Matchmaking Restoration, Ecology & Aquaculture with a significant implementation in the lagoon of Venice. Ecosystem restoration fostering current local aquacultures, increasing revenues (circular economy), while minimizing impact. The project's network have 4 key pillars: 1) restorative aquaculture (goal - zero hunger); 2) economic benefits (goals - decent work and economic growth; Sustainable Cities and Communities and responsible consumption and production; 3) environmental benefits (goal - life below water); 4) optimal use of Maritime space. The selection of Ostrea edulis was done because it was a Venice lagoon native species that gradually was extinct due to uncontrolled overfishing activities and poorly managed fisheries. Innovation has added biological and economical value with tangible circular economy benefits with the activation of a new chain of oyster farming.

Ecological benefits combined with its self-sustainability without any external seeding, ensuring the survival and growth of the Ostrea edulis in the Venetian lagoon. Rethinking of city-lagoon interactions, highlighting its innovative environmental potentialities due to the unique natural context as a food productive site Awareness and sensibilization of the relevance of nature-based solutions: capacity building in morphological seabed stability actions.

This innovation is a significant diversification of the local economy which can be replicated also in other similar marine - biological environments. The added value of transferability of this innovation may be really inspiring for the stimulation of local food chain for the valorization of local products raising consensus building in the perspective of their sustainability and added value in the food market.

Location: Venice, Veneto, Italy
Source: Ca' Foscari University of Venice - Department of Environmental Sciences, Informatics and Statistics (DAIS); www.pric.unive.it

Targeted research to improve domestic vegetable production

Production, consumption, waste

Iceland is in a unique position due to its sub-arctic climate that limits the amount of possible open-air agricultural production and increases the need for food imports. On the other hand, Iceland obtains all its energy from renewable sources (hydropower and geothermal energy), making it cheap and sustainable. This opportunity is used to drastically increase local production of vegetables in greenhouses, which are both necessary to use in Iceland and economically feasible due to the availability of cheap, renewable energy that is also locally produced. As greenhouses can be built directly within or close to city limits, this is an opportunity to reduce transport costs and environmental impact, while increasing freshness of food products on the market. Currently, 12% of all greenhouse production within Iceland is directly located in the capital city region. Multiple related initiatives and research projects have been initiated in collaboration between Icelandic research institutes, local producers and food companies, and the Icelandic government, to further increase this local production by increasing acceptance of domestic food by consumers. These projects have i.e., the aim to collect data on the chemical content of food from Icelandic agriculture and to shed light on the uniqueness and importance of domestic production. This is done in comparison to imported produce to supply the Icelandic food industry with tools that help it to strengthen its position and convey to buyers the uniqueness and loyalty of domestic production.
Sustainable vegetable production in greenhouses can be set-up within or close to cities, reducing transport costs and environmental impact.
Part of the approach requires the availability of cheap, sustainably produced energy which might not be available in many regions, while other initiatives, like scientific demonstration of specific health and environmental benefits of local products could be replicated.

Location: Iceland
Source: MATIS, https://matis.is/en/matis_projects/baett-gaedi-geymsluthol-og-minni-soun-i-virdiskedju-islensks-graenmetis/; https://matis.is/en/matis_projects/serstada-matvaela-fra-islenskum-landbunadi/; https://matis.is/en/matis_projects/gaedi-og-hollusta-islensks-graenmetis-i-samanburdi-vid-innflutt-graenmeti/

ECORURIS

Production, processing, consumption, waste, ecosystem services, ecological practices, responsible producers and consumers

EcoRurIS represents a digital platform that promotes and publicly informs about eco-friendly practices on food production and distribution. EcoRurIS creates an infrastructure which, on one side, advises producers about durable, sustainable, and healthy solutions for food production and, on the other side, encourages consumers to get more involved in organic and healthy food solutions.

Farmers and students from the "Ion Ionescu de la Brad" Iași University of Life Sciences (IULS) participated in EcoRurIS activities, and they had the opportunity to visit farms and processing units in Iași County which implement environmentally-friendly agricultural systems. The rural community of Iași as well as the university staff and academia praised the publishing of a brochure with information on environmentally-friendly agricultural systems, as well as its distribution in physical and online formats.

EcoRurIS Combining theoretical and practical aspects of environmentally friendly agriculture (organic, traditional, in conversion to organic farming, permaculture, eco-certified processing, and organic beekeeping) is a good practice model for increasing awareness of the economic, environmental, and social benefits. Environmentally-friendly agriculture is becoming ever more popular among farmers.

Location: Iasi, Iași County, Romania
Source: Site Ecoruris, https://ecoruris.rdrp.ro
https://www.facebook.com/groups/1147433989082658

Tak for Maten

Production

The project demonstrates the possibility of using rooftops for urban agriculture and to produce food locally in cities. The issue that the initiative is trying to solve is to create higher awareness of food production and locally produced food and how it can benefit society. The project is implemented on a rooftop in Oslo.

Creating higher awareness of food production in cities and demonstrate the use of rooftops for urban agriculture. Similar solutions could be used in other cities.

Location: Oslo, Norway
Source: Nabolagshager, https://nabolagshager.no/tak-for-maten-rooftop-farm

Food Floor

Production

The Food Floor is a food enterprise incubator that supports the development of private sector innovations and broaden business practices with social and environmental goals. It involves collaboration between businesses and education/research partners, including the University of Agriculture Wageningen, technical university Eindhoven, HAS Hogeschool and ZLTO. They aim to develop innovation that brings together agrifood technology, high-tech, ICT and data and do so through developing business cases and strengthening the connection between enterprises and research institutions across the agrifood sector. Business cases that have been developed have included developing robots to support vegetable production and increasing animal welfare at intensive pig farms. The activities are financed by the province of Brabant, the national government and private business initiatives.

The Food Floor initiates collaboration across educational and business actors, thereby stimulating the integration of innovation into agri-production practices. There is potential to increase production, animal welfare and optimize overall food system distribution, which directly feeds into the functioning of the CRFS.

The Food Floor functions as an experimental setup, which is a base on which the potential for research/business integration incubators can be assessed. This is a flexible concept that can focus innovation integration towards areas that are specific to any region.

Location: Ede, Netherlands
Source: https://agrifoodinnovation.nl/

Bioeconomy Forum

Production

In Latvia bioeconomy is defined as one of the national smart specialization domains. It has also been identified as a field of undoubted development growth potential for Vidzeme region, therefore bioeconomy has been assigned the role of a driving force for the regional development. Vidzeme region has large forest resources, however bioeconomy covers many fields – food production, agriculture, forestry and wood industry, chemical and pharmaceutical industries, energetics and energy efficiency, construction, information and communications technologies (ICT), health sector, etc. In 2019 and 2021 Vidzeme Planning Region has organized Bioeconomy Forums with focus on sustainable food production and technologies, promoting food innovations in region. The aim of the forum is to get acquainted with bioeconomy trends in Europe and in the world, opportunities and challenges of local governments, private companies and research institutes in bioeconomy development efforts, as well as examples of innovative bio-based products and services from different European countries. Vidzeme Planning Region has been aware of the impact of the Bioeconomy Forums of the region and will continue to organize such events in upcoming years.

Vidzeme Planning Region brings foreign knowledge in the food bioeconomy to the region. The forum is intended to motivate managers and owners of small and medium-sized enterprises in Vidzeme region, start-up and young entrepreneurs, scientists, the Planning Region Administration and top-level decision makers of local governments to participate in bioeconomy development and food innovations in region.

The idea of the Bioeconomy Forum is easily transferable to the other region.

Location: Vidzeme, Latvia
Source: Vidzeme Planning Region, www.vidzeme.lv

N2 Applied

Production

N2 Applied is a technology developed in Norway to enable local production of fertilisers and reduce the emissions associated with farming. The problem it aims to solve is to reduce the emissions related to farming and enable a circular farming process. The main beneficiaries are farmers interested in sustainable food production. The technology is implemented through installing the technology on farms.

N2 Applied allows to reduce emissions for the cities and eliminating the need for chemical fertilizers. Impact has been demonstrated in previous case studies.
The main learning outcome of innovation is to find sustainable solutions for farming using technology that are based on circular processes and an elimination of chemical fertilisers. Furthermore, to, on a policy level, regulate the emissions allowed in farming since potential technologies exist in the market.

Location: The innovation has been developed in Norway and been implemented in farms in Scandinavia and Great Britain
Source: N2 Applied https://n2applied.com/

MyAgronomist

Production

MyAgronomist provides remote monitoring and advisory. Reliable technical support for agricultural producers, optimization of agricultural inputs and processes, providing reliable data for accurate decision making in decision-making processes, improving of sustainability in the farming business model, minimizing the negative impact from farming business model on human and animal life, as well as the environment (carbon footprint), updating users for novel technology and market trends in the farming business.

The main impact of using this service is the improved agricultural production by optimizing agricultural inputs and prompt execution of agricultural activities. Other impacts are lower carbon footprint and environmentally safe approaches in executing agricultural activities.

Location: Skopje, North Macedonia
Source: https://agfutura.com/moj-agronom/#

Agrivi Software

Production, processing, distribution, markets, consumption, waste, food security, ecosystem services, livelihood& growth

AWARD WINNING Farm Management Software AGRIVI is listed among the TOP 3 market-leading farm management software based on 94 global industry reports in 2020. The AGRIVI approach is to solving the global food problem is through the digitalization of agriculture, that is, by switching the farmer's decision-making reliant on traditional practices and historical knowledge to the new data-driven and fact-based decision-making empowered by best-growing practices and real-time agronomic insights available using technology.

Agrivi products provide digital transformation of processes in the agri-food industry. One of the developed products is the Agriculture Supply chain – a software tailored for directly support producers to manage and digitalize their processes, ensure compliance with food quality and standards, simplifying farmer contracting and monitoring and track progress, track harvest plans and minimize gaps in delivery, have a real-time insight into crop health, risks and climate conditions, and provide help in reaching sustainable goals.

Agrivi digital agriculture solutions are digitally transforming every level of the AgriFood chain. It is trusted by Fortune 500 companies and it offers many solutions in the whole AgriFood industry.

Location: Croatia, but it is run globally
Source: AGRIVI, https://www.agrivi.com, https://www.facebook.com/AgriviCorp, https://www.linkedin.com/company/agrivi/

FOODTOPIA

Distribution, markets, consumption, waste, Social inclusion & equality

Foodtopia is a resilient local economy project that aims to combine agricultural production, food processing and distribution in the geography of a neighborhood. The objective is to reduce the current price of food and its direct and indirect side effects by half, through a drastic reduction of energy consumption along the food production chain. This initiative benefits food producers as well as society as a whole in terms of the possibility of consuming more affordable and sustainable food products. Foodtopia encompasses the following actions: (1) to produce affordable dishes for a broad spectrum of consumers; (2) produce sustainable, eco-friendly dishes (anti-fossil energy and anti-packaging); (3) creation of a technology capable of minimizing the ecological impact; (4) produce very close to the origin; (5) less waste of water and energy possible when producing large quantities of food; (6) use of grains and legumes as the main source of proteins and amino-grams (consumption model far from animal overproduction).

It is a system that encourages the consumption of local and regional production that respects the environment and sustainability. With the reduction of the supply chain, both prices and pollution will be considerably reduced. Therefore, it is also an inclusive system that contributes to the fight against food poverty. The potential of this project is that it prioritizes the close distribution of food, as well as the preparation of sustainable dishes. Both aspects promote food distribution and production that is much more respectful for the environment and for local production. Besides that, it is an inclusive project as it takes into account the accessibility of food for all.

Location: Murcia, Spain
Source: Foodtopia, https://foodtopia.eu/inicio/que-es-foodtopia-2/

PROCESSING AND MANUFACTURING

Sustainable food processing requires to search for approaches to meet present needs without comprising future viability, given constantly changing economic and environmental trends. This chapter brings together innovations dealing with new solutions for food processing from Finland, Germany and Latvia.

Honkajoki Oy - processor of animal by-products

Production, processing, waste

Honkajoki Ltd is Finland's leading processor of animal by-products. They manufacture high-quality, clean and safe products from organic by-products from meat production for their customers in various industries. At the same time, Honkajoki produces new ingredients to the food chain as commodities that are used as raw materials in, for example, animal feed, fertilizers, cosmetics and fuels.

Every year, most of the animal by-products of Finnish meat production passes through Honkajoki's process. Thanks to the circular economy concept they have developed; the company is able to return 100% of this organic matter back to the natural cycle safely and as energy-efficiently as possible.

The concept combines the principles of responsible circular economy thinking, agroecology and technological innovation. The innovative concept returns animal by-products to recovery, prevent the spread of pathogens, promote the sustainable use of natural resources and minimize the environmental impact of company's operations.

Location: Honkajoki, Finland
Source: Honkajoki Ltd, https://www.honkajokioy.fi/en

EntoSus

Production, Processing

Europe's first Naturland - certified organic insect farm that breeds crickets as a sustainable alternative for savoury dishes and snacks. The breeding is carried out according to the principle of circular economy. The animals are fed almost exclusively with residues from the agricultural and food industry. The breeding of insects requires significantly less space than conventional animal breeding. Compared to beef production, cricket farming produces only 1% of the greenhouse gas emissions and requires 15,000 times less water in total. Moreover, since breeding and processing take place in one place, unnecessary transport routes are also eliminated. In doing so, the founders pursue the primary goal of finding a solution for sustainable and climate-friendly food production.

Location: Hemelingen, Bremen, Germany
Source: https://www.entosus.de/

Heidi's mobile Käserei KG

Processing

The founding group wants to enable dairy farmers to produce cheese locally from their milk - on the dairy farmer's farm. With its concept, the mobile cheese dairy is unique in northern Germany, and it has many advantages. The farmer does not need his own cheese dairy, the benefits from the direct marketing of the milk and no profits are lost to middlemen. The end products stand out significantly from industrial products.

In a very short time, the bacteria begin to transform the milk into solid curd, which is ready for filling after further process steps. The special thing about this work: everything happens directly on the dairy farmer's or farmer's wife's farm. So they each have the opportunity to experience what happens to the milk and the products are created on a personal level. The possibility of how a dairy farmer without his own capacity can produce cheese from his own milk.

Location: Northern Germany
Source: https://www.hmk-elsdorf.de/content/eindruecke/

Latteria Sant'Andrea

Processing, distribution, markets

It is a cooperative agricultural company, based in Treviso (Italy), specialised in the production of typical Veneto cheeses, which buys its raw materials exclusively from selected dairies operating solely in the Province of Treviso. The products are sold exclusively in the three single-brand outlets of the dairy (inside the Povegliano plant, and in the shops in Lancenigo and Treviso) and in the open-air markets of the province.

Synergy with 11 small stables in the province of Treviso from which they buy their milk and can count on a constant and quantifiable demand for milk, as well as breaking away from the networks of large-scale organised distribution, which are too competitive for small producers. Self-managed distribution of quantities produced on the basis of demand from direct sales.

The struggle of small producers and food processors to compete in the large market and big selling channels is increasing. A collaboration between "small" actors working in the same territory, one close to the other, can potentially reduce the dimension of some supply chains, supporting small enterprises, guaranteeing their survival and promoting local products.

Location: Treviso, Veneto Region, Italy
Source: Latteria Sant'Andrea, https://www.lattsantandrea.com/

Food Bioeconomy Cluster

Production, processing, markets, knowledge

Latvian food bioeconomy cluster helps to increase capacity of region's food producers and processors that is significant for region's economy. It aims to promote the sustainable production, processing and consumption of healthy, high-quality, and safe food. Cluster develops knowledge-based food bioeconomic innovations, as well promote scientific and industrial cooperation both locally and internationally.

The cluster strengthens food producers and processors knowledge-based capacity to produce qualitative food for the benefit of the food sector what helps to develop one of main regions' economics sectors, as well to ensure qualitative food for the inhabitants. Cluster is bringing high level knowledge to the region, encouraging innovation in the food sector.

Cluster is developing the internationalization of the cluster and its members - to promote international cooperation with clusters and related institutions operating in the field of bioeconomic and food production and processing industries, as well as food and bioeconomic innovation initiatives, cooperation networks, platforms and consortia, science parks, business incubators and innovation centers in the Europe and globally.

Location: Vidzeme region, Latvia
Source: https://www.linkedin.com/company/latvian-high-added-value-and-healthy-food-cluster

Transnational food innovation hackathons

Processing, markets

To support the food enterprises of different Baltic Sea Region countries in generation and development of innovative approaches (products and technologies) in food production and marketing. Food system strength depends on strength of its main stakeholders - food processing enterprises. The measures implemented promoted increase of production and marketing capacity of the involved companies. Hackathon approach for mature food processing enterprises - experiences and lessons learnt.

Location: Vidzeme region, Latvia
Source: biobord.eu

DISTRIBUTION

Food distribution, like food production and processing, is an essential part of city region food system that must address such challenges as growing population in cities, scarcer resources, increasing attention to food security, changing dietary habits. Food logistics has to search for new approach how to provide sustainable bridge between food producers to food consumers. The chapter represents innovations developed and implemented in Italy, Spain, France, Finland, the Netherlands, Slovenia.

REKO - distribution model for local food

Distribution, markets

REKO is a sales and distribution model for local food, and the abbreviation comes from the words "Rejäl consumption" - Fair consumption. REKO networks are the opportunity for the consumer to purchase locally produced and manufactured food directly from the primary producer or manufacturer. The producer presents his/her selection in a closed Facebook group, through which the consumers orders the products they want. The exchange will take place at a time agreed in advance by the district at the agreed location. REKO networks are Finland's most successful model of citizen food networks, which is already listed at the EU level. The operations that started in Pietarsaari in 2013 have grown rapidly. At present, the approximately 130 REKO Group in Finland has approximately 180,000 members, of which approximately 20,000 are in the Helsinki metropolitan area.

The main principles of REKO's operations are: no resale, as close as possible, ethical production, preferably organic, open and transparent. There is also an obligation to report on production.

The success of REKO's operations is based on the growing demand for ethically and small-scale local food and the use of Facebook as a platform where "everyone" is already and effectively disseminating new phenomena. The operating model is an everyday innovation used by and activated by the citizens. The model is already copied in various EU-countries and is easy to scale up to different locations, small and big cities.

Location: Finland

Source: Developed by producer Thomas Snellman from Pietarsaari, Finland, using the French model. Each REKO network has its own Facebook group page

CoolRail

Distribution

CoolRail provides the transport of fresh food products in more efficient and sustainable way. It is a direct train link between Valencia and Rotterdam. This innovative initiative improves efficiency and sustainability in the fresh supply chain significantly. The train transports fresh products to retailers in Northern Europe and returns to Spain with empty, folded trays for the producers to fill. The extra space is offered to external partners who produce goods for the Southern European market. With one CoolRail trip, you save out on 42 truck transports, unburdening the road network and reducing CO2 emissions by 70% - 90% as a result. Basically, this solution can be used by distribution companies which can organize collaboration between national rail system and the company producing this container and owning know-how.

The innovation can be transferred if a city has a rail system and there is economic profitability to connect producer(s) with big buyer(s).

Location: Barendrecht, the Netherlands
Source: Euro Pool System, https://www.europoolsystem.com/about-us/innovation

La Louve - food cooperative

Distribution, Markets, Inclusion, equality

La Louve is a food cooperative owned 100% by customers. Customers decide collectively of the products available and the way the supermarket should operate. La Louve has more than 10000 members and operates with the participation of the latter (3h every four weeks). The idea behind it is to make sustainable and healthy food available to a larger population, while also supporting independent producers. The customers have the control over the criteria used for adding products to the catalogue. Prices are lower for same products compared to other supermarkets. Profits remain in the supermarket or go to similar initiatives. La Louve is therefore a democratic, solidary and ecological business.
La Louve has proven its efficiency, the system is now well experimented. La Louve also provides advice and training to other similar initiatives.

Location: Paris, Ile de France, France
Source: La Louve SAS, https://cooplalouve.fr

Last Minute Market

Distribution, markets, waste

Last Minute Market is a spin-off company accredited by the University of Bologna, now being turned into a social enterprise, which supports large-scale retail trade companies in the recovery of surplus food. Its services include saving food surplus to be reused for social purposes; increasing awareness on food waste through educational programmes targeted to schools, third sector, companies and citizens, carrying out studies and research to analyse the causes of losses and waste along the different production chains, fostering communication campaigns to sensitize citizens.

Italian food waste, in the distribution sector alone, amounts to 1.9 billion euros. This innovation allows to increase awareness on food waste, drastically reducing GHG emission, water usage, waste of biological land, just as the social costs linked to food waste disposal and provide support to food distributors and caterers. With the enterprise recently focusing also on medicines, which often remain unsold and unused, and non-food goods, it fosters a circular living and mind-set 360 degrees and collaborates with different stakeholders in the supply chain.

Waste is turned into a way to connect individuals to the environment (through better awareness) and their neighbourhood. This is a form of innovation that perfectly shows how it is possible to combine natural, human, social and economic needs in forms of sustainable local development. Since 2022, Last Minute Market has been a member of the European Platform on Food Loss and Waste.

Location: Bologna, Italy
Source: Last Minute Market, https://www.lastminutemarket.it/home

Innovative and creative solution in food management

Distribution, markets, consumption, waste

Optifood is a digital market place for the supply and demand of food before the expiry date. Users like a food producer, manufacturer, supplier, retailer or any other type of a company in the food industry can register as a seller on Optifood. Innovation allows its users easily upload food and beverage before the expiry date, sell it to registered buyers or donate food to non-profit organizations

Innovation prevent food waste with two-sided marketplace connecting food producers, manufacturers, suppliers, and retailers with other interested companies and individuals in the food industry.

Location: Slovenia
Source: OPTIFOOD; https://optifood.eu

VRAC - Vers un réseau d'achat en commun

Distribution, social inclusion& equality, markets, consumption

The VRAC association promotes the development of purchasing groups in neighborhoods with low income levels. The project of the association is oriented towards the access of the greatest number to quality products from peasant / organic / fair trade agriculture at low prices, thanks to the reduction of intermediate costs (short circuits) and superfluous costs (limitation of packaging) while guaranteeing fair remuneration for producers. Thus, VRAC allows the inhabitants of the districts to subscribe to a mode of sustainable and responsible consumption, which is based on the collective and the local dynamics to face up to precariousness and to propose another relationship to consumption, health and self-image. It provides access to healthy and sustainable food to the greatest number.

VRAC actively promotes its activities and aims at implementing them in other territories. Therefore it is a perfect example of an innovation that can be adapted to other territories. VRAC as local groups in 14 cities all over France.

Location: France
Source: VRAC, https://vrac-asso.org

Traceability of food with Blockchain

Distribution

Innovation Technology Cluster together with Green Point Living Lab (biggest and most advanced regional short food supply chain founded by farmers) are developing the Traceability of food within the short food supply chain based on Blockchain technology.

The service is implemented within the short food supply chain in Pomurje, Slovenia. It is integrated with the existing IT system of the company allowing to track the food from farmer up until the store, where customers (citizens) can track the food with help of QR code.

Service offer the traceability of food from farm to fork, allowing citizen to see the food origin. This way it is proved that the food is from local environment and home-grown.

Location: Slovenia
Source: ITC, https://itc-cluster.com

100orti a large biodiversity garden on the outskirts of the city of Vicenza

Production, distribution, ecosystem services

100orti is a project of the Stimamiglio R. Agricultural Company for the creation of a large biodiversity garden on the outskirts of the city of Vicenza. The idea has been developed by Chiara Centofanti, an agricultural entrepreneur. She has been involved in environmental education and school gardens for many years. She also conceived 100Orti, a project for the cultivation and sharing of products, flavors and knowledge of agricultural biodiversity on the family farm in Vicenza, in the countryside outside the city, increasingly threatened by continuous urbanization. Today in the company almost a thousand different varieties are grown with organic techniques, including vegetables, fruits, aromas and flowers that have unsurpassed flavors, colors and aromas due to genetics and cultivation techniques. "In our farm in Strada della Carpaneda, in a splendid suburban countryside, we cultivate all our products with love and seriousness, which we collect and always offer fresh every day. Ours is a transparent agriculture, with clear rules: respect for the environment, health and beauty, protection of biodiversity, fair value to our work. Our passion and commitment drive us to cultivate more than 1000 varieties every year in the garden: forgotten vegetables and fruits, flowers and aromas, all extraordinary, with important collections of ancient vegetables, including 300 varieties of tomatoes only. Alongside the typical products of our territory (Creazzo fiolaro broccoli, Verona radicchio, Veronese red cabbage, swede cabbage, parsnip), there are many typical products from other parts of the world: daikon, Japanese and Chinese cabbage, Thai and African aubergines, peppers of Eastern Europe. With our processed products we also produce exquisite sauces, juices, mustards and jams. You can taste our products by joining the 100orti project with an annual subscription or by purchasing them for direct sale at our company or at the weekly market in Piazza delle Erbe in Vicenza".

100 orti represents a project capable to preserve part of the suburban countryside in the city of Vicenza, countering the urbanization and preserving soil. Here several consumers awareness events take place, about biodiversity and food knowledge. Furthermore, an innovative sales system based on the formula of subscriptions represented an innovation, already before COVID. During the pandemic the delivery system the system has shown its full potential and value. Each week subscribers receive the "fruits" of the garden, according to the season, according to the ripening, following the rhythm of nature. This impact on consumers awareness and on the reducing of food waste.

In general, it is considered a marginal activity, designed to keep retired or unable to work employed. At other times, however, when perhaps it becomes the basis of some more structured economic activity, perhaps of some trendy restaurant, it is relegated to a publicity stunt aimed at an educated and wealthy urban clientele. Urban agriculture and horticulture can certainly be all this, but it is also something more and different, as indeed the experience of 100 gardens shows. A project, a passion and a transferable business model Urban agriculture and horticulture can concretely contribute to generating a new urban metabolism, directly producing food to feed the city, within its borders, recovering abandoned plots of land and saving others from urbanization (as happened in Carpeneda in Vicenza) instead of nourishing the gap between "producer" rural areas and "consumer" urban areas. Horticulture and urban agriculture must therefore be seen as forms of innovation in this direction. It is a question of rethinking a production model that is decentralized and capable of coping with an intrinsic

organizational and managerial fragmentation, rethinking agricultural productivity, especially metropolitan, in intrinsically plural terms or, as they say technically, in a "multifunctional" key. Urban horticulture as well as peri-urban agriculture, far from representing only passing trends or fads, should rather be interpreted as models necessary to address the economic, environmental and social challenges of future sustainable cities. Such practices are therefore destined to proliferate and, above all, to be structured as reference models for lasting urban lifestyles.

Location: Strada Carpeneda, Vicenza – Veneto Region Italy
Source: 100 orti by Chiara Centofanti - Azienda agricola Stimamiglio https://www.instagram.com/chiaracentofanti/?hl=it https://it-it.facebook.com/chiara.centofanti, https://www.youtube.com/watch?v=Gbn9nxESIFY

ECOTIRA

Distribution, markets, ecosystem services

It is an eco-friendly space for the sale of organic and proximity food where producers and processors can commercialize their products directly to professional companies. Ecotira promotes respect for the environment and the territory, placing organic and local food at the center of its production and transformation processes and promoting local marketing chains. Ecotira is physically located in Mercavalència, the largest Agri-Food Center in the Valencian Community. It is composed of the Central Fish, Fruit and Vegetable Markets, the Flowers and Plants Market, the Ecological Services Slaughterhouse, etc. In their facilities, they have an advanced logistic and distribution infrastructure for the elaboration, transformation and trade of fresh and frozen products. Ecotira enables local businesses such as retailers, food markets, hotels and catering to have access to local and sustainable products. Directly, it is expected to reach small organic production initiatives, concretely 40 local producers. Indirectly, the Ecotira initiative aims to benefit the final consumers of organic food in the city of Valencia.

Ecotira aims to promote local and organic products, with the objective of reducing supply chains, achieving the consumption of more sustainable and healthy products in the city of Valencia. This initiative can further promote the reduction of the supply chain, with all the environmental and economic benefits that this entails. It consists of an innovative project that seeks to consolidate itself by constantly listening and adapting to the needs of the producers and professional companies that make it possible. Ecotira also foresees the collaborative development of an open source digital tool in a cooperative competitiveness environment.

Ecotira may be replicated in any city with significant agriculture or food production, as it is a space in the markets that supports both local and eco-friendly production. It is basically a matter of bringing producers and their products closer to final consumers.

Location: City of Valencia, Valencian Region, Spain
Source: Mercavalència; Committee of Organic Farming of the Valencian Community; CERAI https://www.mercavalencia.es/es/ecotira/, https://cerai.org/cooperacion-en-espana/dinamizacion-agroecologica, https://www.facebook.com/mercavalencia

Vazapp - a Rural Hub

Distribution, markets

Vazapp (an acronym for 'vai a zappare' - go hoeing) is a rural hub from Apulia - Italy, that fosters social innovation to provide services for agriculture, tourism, and related sectors. Vazapp is a community of young professionals, researchers, communicators, creatives who come together with the aim of creating a path that brings out the agricultural and agri-food sector through young people, creating employment and identity, social relations that enhance the territories. Vazapp's professionals present themselves with communication, planning, analytical, networking, and aggregative skills. The purpose of the union is to reinterpret agribusiness and territory by contributing as a social activator and innovation broker. Designed to develop formats suitable for listening to the world of agriculture, the contadinner (farmers-dinner) are moments of human gathering in the fields, to allow farmers to tell about who they are, what they do and their dream of better agriculture, to be seen and to directly connect with consumers. Other formats such as the Farmers Gala, the first event of networking between agriculture and tourism, connects farmers and hoteliers, restaurateurs, and celebrity chefs to share products and stories.

The innovation behind the development of Vazapp is to offer young people something tangible, to provide them with tools to be able to enhance themselves in the territory. Creating a rural community, which could deal with the real problems of farmers, giving them back their rightful dignity, is the core of the project. A community of young farmers, professionals, researchers, communicators and creatives, who intends to revitalize the agricultural sector through a path of social innovation, fostering relationships in agriculture for the development of ideas and entrepreneurial activities, aimed at creating opportunities and give life to a "filiera colta" ("Cultured Chain") not only "filiera corta" (short supply chain). Innovation starts from the value of human interconnections and relationship with their land, behind the place for sharing, training and creating relationships of the agricultural world.

Vazapp represents the value and beauty of a cooperative society that can inspire Italian rural villages, internal areas and even European areas to give life to the largest listening movement in agriculture from the grassroots.

Location: Apulia, Italy
Source: Vazapp, founded by Giuseppe Savino, https://www.facebook.com/vazapp

Taste of Iași

Distribution, production, processing, markets, consumption, local food platform

Gust de Iași" (aka Taste of Iași) is platform that promote the local food producers from the peri-urban area of the city of Iași. The platform engages knowledge transfer and public information and, at the same time, does not embrace a commercial approach. The Rural Development Research Platform Association created the platform www.gustdeiasi.ro in 2020-2021 as part of two funding projects granted by the City Hall of Iași through a civil society funding mechanism. In 2022, 81 producers/processors from Romania`s North-East Development Region registered on the "Gust de Iași" platform. The platform serves as a virtual meeting place for producers and consumers. It enables them to communicate directly with one another and contributes to a greater sense of trust between producers and consumers. As part of the "Gust de Iași" project, a series of twelve online tasting events/virtual tastings were held during the COVID19 pandemic restrictions, in which the producers were able to present their products as well as the story of their business.

The activities carried out as part of the "Gust de Iași" project had a positive impact on the Iași community and beyond. The promotion of certified and/or licensed local producers, in tandem with research activities in the field of short food supply chains, is an innovative direction for the food system of the city of Iași. The section dedicated to the promotion of healthy eating, the benefits of short supply chains, and the correct information of consumers about the specifics of organic, traditional, and mountain products is a key component of the "Gust de Iași" platform.
"Gust de Iași" is intended to be a pilot project at the North-East Development Region level, with the goal of eventually implementing this concept at the level of all counties in the region.

Location: Iași, North-East Development Region, Romania
Source: Asociația Rural Development Research Platform, www.rdrp.ro Website platformă: https://gustdeiasi.ro/ Cont Facebook Gust de Iasi: https://www.facebook.com/gustdeiasi Grup Facebook Gust de Iasi, www.gustdeiasi.ro
https://www.facebook.com/groups/845774049526182

MARKETS

Access to market for small farmers, home producers and other small producers from urban, peri-urban and rural areas is an essential tool for promoting local, affordable, nutritious, and fairly traded food to all communities. Short value chains that link hinterland producers to market systems, can contribute to sustainable diets and stabilise livelihoods in the distribution, processing of food. The chapter represents various innovations from Ireland, Croatia, Italy, Turkey.

NeighbourFood

Market, distribution, waste

This initiative provides an online marketplace where products by local farmers and artisan producers gets available for sale. The sale of any large-scale commercially grown vegetables, non-organic imported fruit or vegetables, genetically modified products, intensively reared meat, imported fish or battery eggs are not permitted to be sold at a NeighbourFood market. A local venue is assigned on a rotation basis, from where customers collect their online placed order.

The positive impact comes from supporting local food producers and promoting positive relationships within communities. This in turn enables to grow circular mini economies, creating meaningful jobs, reduce negative impacts on environments and all the while - taking more pleasure from the food we feed our families with. The concept of creating an online market place, primarily for local food producers is a great way of utilizing more locally grown food products, and creating mini regional online market places that can be combined to serve at a bigger supply chain scale.

Location: Ireland
Source: https://www.neighbourfood.ie/markets/waterford/74

CAMPAGNA AMICA MERCATO COPERTO DI VICENZA KMO Market in Vicenza

Markets, distribution

The covered market of Vicenza is located a few tens of meters from the very central Corso Andrea Palladio, in via Cordenon 4, a parallel to Corso Fogazzaro where there are elegant buildings and refined boutiques nearby. The market takes place inside the former premises of the prestigious Chamber of Commerce, Industry and Crafts of Vicenza: an area of over 300 meters has been allocated to direct sales, as well as an area dedicated to the events scheduled from time to time. An info point is also provided to aid citizens who will visit the market. The market currently hosts 19 producers, coming from various parts of the province of Vicenza. There is a good range of products, from "product of the mountain" cheese, to aged cheese from Malga (Slow Food presidium), from bread, cakes, breadsticks, goat cheese, excellent sausages, Carnaroli rice and Vialone Nano, excellent wines, Marano corn flour, fruit juice, jams, Italian meat, fruit and vegetables, lavender-based products, quail eggs, extra virgin olive oil and the bread biscuit made as it once was. Do not miss the flower stand to liven up even more the extraordinary location of the Market. It is a direct sale, from the producer to the consumer, of agricultural products from the province of Verona, without intermediaries, but with guarantees of quality standards imposed by the Veronatura Consortium. Always fresh and safe products will be offered in respect of seasonality: fruit and vegetables picked on the same day and at the right degree of ripeness. Convenience is guaranteed: on sale fruit, vegetables, oil, wine, rice, salami, cheese, honey ... all with a saving of 25%. The "0 km" Campagna Amica market (or Farmers' Markets or farmer's market) now represents a consolidated reality, offering a valid alternative to the logic of large-scale distribution and bringing quality and authenticity to the table and to everyone's lips.

The impact of the covered market of Campagna Amica in the city of Vicenza can be summarized in the following points: adaptive reuse of an abandoned historic building; benefits for local producers who, by networking, are able to directly access the urban market without intermediation; healthy food for citizens at a convenient price. The initiative is perfectly aligned with the "From farm to Fork" Strategy, so capable to impact on the European Green Deal.

The Campagna Amica Market is farmers' market where only agricultural products from regional territories are sold, therefore strictly zero km. Promoted by Coldiretti, Campagna Amica was born to carry out initiatives aimed at fully expressing the value of Italian agriculture, highlighting its key role in protecting the environment, the territory, traditions and culture, health and safety. Food, equity, access to food at a fair price, social aggregation and work. It is a wide spread initiative in Italy, that can be further exploited and enhanced creating new network amid producer and urban canteens, for example. When we talk about '0 km products' or 'short chain' we refer to products, usually foodstuffs, whose sale takes place in an area a few kilometers away from the production one. It is, therefore, an alternative to the marketing of food typical of the large-scale distribution system. Unlike large-scale distribution, the short chain aims at reducing the number of steps that would otherwise occur between the producer and the consumer, also leading to a net reduction in the costs associated with distribution and transport. Advantages deriving from the short supply chain are considerable and are highlighted not only in the reduction of factors linked to pollution and global warming, such as

the emission of carbon dioxide due to transport and the use of packaging for distribution, but also in the possibility of purchasing products local, fresher and in season, which have not lost their organoleptic properties due to long journeys. Choosing to buy food at 0 km is a more sustainable choice for the environment, cheaper and able to enhance local realities. 0 km therefore becomes a different perspective with which to approach purchases by marrying a broader philosophy of critical consumption in which every consumer is aware of the need to make a choice, at the time of purchase, which takes into account factors other than mere advertising propaganda. with which companies can sponsor many products. For those who intend to make the philosophy of the short chain their own, all that remains is to find out how to buy foods that come from the surrounding realities.

Location: Via Cordenons, Vicenza – Veneto Region Italy
Source: https://www.campagnamica.it/la-nostra-rete/mercato/mercato-coperto-di-vicenza/

Eat Fuenlabrada ("Cómete Fuenlabrada")

Distribution, markets

With this initiative the City Council promotes the local agricultural sector (for years, now), bringing its products closer to the neighbours. The objective is that citizens do not have to go far away to acquire fresh local products, taken from the urban-garden a few hours before. Some mobile markets are paid by the City Council, where local farmers may sell products freshly picked from the garden such as Swiss chard, cauliflower, potatoes, celery or onions. Vegetables of great quality, fresh and from local agriculture. The markets are moving around the city, so every day they are available in a different neighborhood.

The local agriculture is now sustainable, from an economic point of view. Farmers have increased their incomes in an exponential way. The primary sector in the City is not in critical danger anymore. More and more citizens are now buying local vegetables. This also benefits the environment.

The innovation may be directly applied to other huge urban areas, where the primary sector is near disappearing.

Location: Fuenlabrada, Madrid, Spain
Source: https://parqueagrariofuenlabrada.es/

Food Outlet Žabac

Distribution, consumption, waste, social inclusion& equality

Innovative concept of retail stores Food Outlet Žabac is something newer in Croatia. It regards a store where you can buy more than 1000 items of the most popular Croatian and foreign brands at affordable prices. This is the only retail concept of its kind to win the Grocery Award for Innovation in the New Concepts in Retailing 2017 category at the Euromonitor competition based on research conducted in 80 countries. Food Outlet Žabac is a concept of stores that sell stock - surplus goods produced in factories, scrap - those products that are damaged in production or which are not good packaging and shelf life - products before the expiration date. Innovation is helping to solve issues in the CRFS regarding waste – store is buying out most of products directly from the producer that has some issues and can't go on regular store shelves (packaging issue, damaged product but still good for use etc., store is also buying food that is near its shelve date. Considering store is buying out low price product and selling them at low prices as well it is highly needed among low income population and is helping to meet every day need regarding food and other products needed for household it's also has significant impact on inclusion and equality.

Positive impact regarding CRFS can be seen regarding reduction of waste that would be accumulated if there are no buyers for damaged goods from producers or distributive centers. Another valuable impact is regarding inclusion and equality bringing prices closer to the population of lower purchasing power.

Innovation can be transferred, and should be transferred, to any city or region as it is something needed for food loss, unnecessary food waste that comes from food that doesn't end at the market and is not sold at the end of its due date. Not to mention again help to feed low income communities and help with equality in nutritional sense.

Location: Zagreb, Croatia
Source: Žabac Food Outlet, MMV FROG Ltd.; https://zabacfoodoutlet.hr/ https://www.facebook.com/zabacfoodoutlet/ https://www.instagram.com/zabacfood/?hl=hr

Mezitli Female Producers' Market

Market, social inclusion & equity

Mezitli Female Producers' Market is the first a market that is completely run by female producers in Turkey. Women are one of the most vulnerable groups as in the society of Turkey, they are often very much dependent on their families and mostly on their male relatives or husbands. The economic independence is a main factor for women of all ages in order to be able to make their own choices in life and to feel more self-confident. The main goals of the Mezitli Female producers Market is to reduce the gender-based barriers, to increase working opportunities for women; social and cultural exchange between women; to strengthen local female producers from all social and cultural, economic levels, and, thereby, increase their self-confidence.

The Mezitli Female Producers' Market project managed to reach female producers in 40 neighbourhoods of Mezitli; provided stands to women with just two preconditions; living in Mezitli and being a female producer (producing cheese, cake, marmalade, bakery, meals, desserts, olive, olive oil, handmade any kind of product is accepted). Women reached their self-confidence and independency thanks to our female producer markets with hundreds of thousands of consumers. The concept of the project allowed to reach women who are usually not going out of their house or neighbourhood without any permission of their family (sometimes it will be a father, husband or brother). Now those women have their independency and they communicate with each other (educated and non-educated ones, like engineers and primary school graduated) as producers and consumers. 650 female producers have stands at 9 female producers' markets

Location: Mezitli, Turkey
Source: https://www.milanurbanfoodpolicypact.org/wp-content/uploads/2020/12/SEE-Mezitli_2019.pdf

CONSUMPTION

Food consumption patterns become more important in recent years, people are paying more attention not only on healthy diets, but also to the impact that food consumption have on environment – to minimize the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so not to jeopardize the needs of future generations[2]. The chapters represent innovations related to food consumption implemented in Italy, German, Spain, Ireland, Belgium, the Netherlands, North Macedonia, Slovenia.

Smart Tags for Improving Consumer Interaction in the Food Value Chain

Consumption, waste

Smart Tags is a visible or electronic marker with environmental sensing functions like functional ink, sensors or indicators, combined with software intelligence, which can then be linked to food items. Smart Tags can have different properties and functions. It can be a simple barcode that can be read by mobile phone allowing consumer or them to access more relevant and real-time information about different food products and to communicate with the producers or other stakeholders in the food value chain. Smart Tags can also be an indicator with a visible colour change that indicates changes in the product surroundings. When some parts or areas of a 2D barcode are printed with the functional ink, the scanning result of the code changes dynamically when the state of the functional part changes. When conditions of the surrounding environment change, such as temperature, gas composition, lighting or humidity, parts of the barcode can appear, disappear or change colour, resulting possibly in change of scanning results or just to give consumers indication of changes in product surroundings or inside the product packaging itself.

The aim of the Smart Tags communication project – funded by EIT Food - was to increase consumer trust towards food products by sharing information with Smart Tags, that contain information about the quality or authenticity of the product and enable also sharing of information from the food value chain. It will also facilitate consumers and stakeholders to create an interactive connection; where consumers are able to give feedback, ask questions, co-develop the products and services. That could result in better understanding by the food industry of customers' needs and preferences, resulting in more targeted product development and marketing.

Depending on the application and type of Smart Tags there are numerous potential impacts that benefit CRFS. In its simple form, as a QR or barcode, it could give consumers information about food origin and therefore identify and promote local food products. Smart Tags that include sensors could be used to indicate freshness of products in real-time and replace inflexible "best by" dates, therefore reducing food waste. The Smart Tags idea and methodology can be applied everywhere.

Location: No fixed location, replicable at a global scale
Source: https://www.eitfood.eu/projects/smart-tags-for-improving-consumer-interaction-in-food-value-chain-2020

[2] Environmentally Sustainable Food Consumption, Oslo Roundtable on Sustainable Production and Consumption, 1994

MiCIBO APP

Consumption, Waste

Mai più Skaduto (Memo Food Clip) is a technological solution for domestic use to manage the pantry in a more functional way, so as to avoid wasting food because it has expired without having been used. It is based on an APP and a set of clips with the NFC technology, and it is very easy to use. The user: 1) download the APP; 2) place the clip close to the smartphone so to active the connection; 3) enter the data of the food to be kept in a specific form in the APP (e.g., name of the product, type etc.) and add the expiration date, price and location of the food. Then use the clip to close the food package, and put it away. Memo Food Clip will remind the user about food that expiration date are approaching, through automatic notifications. In addition, there is a dedicated section in the APP with useful tips to better preserve the products that are about to expire. The main beneficiaries are individuals and families. The APP addresses the issues of economic and environmental costs of food waste.

Memo Food Clip effectively contribute at reducing food waste and contribute at increasing awareness on food related issues among consumers. It is very intuitive, easy to use and affordable, so it has the potential to reach a large number of people and to have a great impact on "bad" habits related to food. It can be to transform to other cities or regions.

Location: Venice, Veneto Region, Italy
Source: H24Invent, https://h24invent.com

Food basket climate impact calculator

Consumption

Finnish food retailer, S Group's, mobile app tells individual consumer's food basket climate impact. The S Group is a large cooperative and the owners of the cooperative (2,4 million people) can upload the application from AppStore or Google Play. The carbon footprint calculation is based on the individual customer's true purchase information. The carbon footprint calculator does not take into account the climate impact of individual products, as reliable and comparable product information is not yet fully available. However, the calculator shows with sufficient accuracy the magnitudes of the climate impacts of the product groups e.g. agriculture products, meat, fish, vegetables, bakery, and their effects on their own carbon footprint.

The mobile application is addressed only to S Group's customers who are also S Group cooperative's owners. S Group is owned by 2,4 million people. They can upload the application from Appstore or Google Play.

Location: online
Source: https://s-ryhma.fi/uutinen/s-ryhman-laskuri-kertoo-ruokakorisi-ilmastovaikutu/7bJ1UjgsE6C47YBQxdr6s6

Harvest season calendar

Consumption, waste

The harvest season calendar is a concept developed in 2011 that introduces people to eating vegetables and fruits according to different seasons. Harvest Season products include an annual paper calendar, a mobile app and books. The harvest season brand is also associated with a social media community. The consumer, the trade and the producer benefit from using the products of the harvest season. Price is good and less food waste. When a seasonal crop is consumed, energy is saved from both long haulage and storage. The products are also the cheapest and, at best, fresh local products.

Location: Finland
Source: Satokausi Media Oy, https://satokausi.fi
https://www.facebook.com/satokausikalenteri/

Creating transparency - from the shop counter to the producer

Consumption, education

The aim is to bring children and young people as close as possible to agriculture and the food industry. Many young people today no longer know where their food, such as meat, animal products or fruit and vegetables, actually comes from. The constant availability in the supermarket is a familiar and often only image for many of them. With this exemplary project, the Ostheide Education and Conference Centre, as the central coordinating body, has created an ideal place of learning - farms. Nowhere can agriculture and food be experienced better than where they are produced.

On the more than 400 participating farms, extracurricular places of learning have been created that not only make the origin and production path of our food visible and understandable, but also create numerous opportunities for active participation. Many of the 50 regional education providers combine agricultural topics with the goals of global learning and education for sustainable development (ESD). They show the global connections between agriculture and nutrition as well as the protection and use of biodiversity.

The program covers the whole of Lower Saxony and the state of Bremen and offers a wide range of educational programs - mostly free of charge - to kindergarten children as well as schoolchildren up to upper secondary school level. In this way, much can be learned about food that is not necessarily covered in school.

Location: Lower Saxony and Bremen, Germany
Source: Bildungs- und Tagungszentrum Ostheide, https://www.transparenz-schaffen.de/

GrowHQ

Consumption, food growth, sustainability

It is a non-profit social enterprise helping people grow food and learn about food sustainability. It is built on the concept of GIY (Grow it Yourself), and is guided by five principles, inspired by the simple but powerful act of growing food: 1. Eat more plants, 2. End food waste, 3. Support small producers, 4. Stop food pollution, 5. Connect with nature.

The positive impact from this innovation is regarding sustainable food production empowering people to make healthier and more sustainable choices. This enables food production, distribution, and consumption in a manner that is healthy for the planet and its people. The innovation and methodology can be of interest to other regions to promote local production of food items, and for a meaningful knowledge transfer to inform people about growing food and food sustainability.

Location: Waterford, Ireland
Source: GIY, https://giy.ie/grow-hq/

Climathon Madrid 2021

Consumption, ecosystem services

Climathon is a global hackathon initiative promoted by EIT Climate-KIC that takes place in many different cities around the World with the aim of generating innovative ideas to rethink cities and the future in which we want to live. The 2021 event took place on November 26 and 27 in Madrid, in person and in Spanish. Participation was open to companies, institutions, associations, students, researchers, entrepreneurs, as well as technicians and professionals. Two challenges were introduced: (1) Healthy and sustainable food: How to transform the food system in Madrid to make it more sustainable (2) Communication and citizen awareness: How to communicate, educate and create awareness about the problems related to Climate Change in Madrid? In this event, the participants had to design innovative solutions to one of these challenges in groups of 4 to 6 people. The teams presented their prototypes in a final pitch and a jury chose the winning initiative: "Crop Crop", which responded to the challenge of sustainable food, and which won a basket of products from Huertos Vega del Tajuana, full of vegetables from of local crops. Likewise, all the teams were given the opportunity to present their ideas to the call for Climathon awards that Climate-KIC has recently published to incubate projects aligned with the New European Bauhaus.

Citizen awareness of the impact of food on climate change, responsible consumption and healthier products. As this initiative is framed within the EIT ClimateKIC, other interested cities are offered a possible funding framework and a source of activities and projects to replicate with their citizens.

Location: Madrid, Spain
Source: https://climathon.climate-kic.org/europe/spain/madrid/?lang=en

KRAKKAR KOKKA – Kids cook

Consumption, waste, inclusion

Domestic food traditions and the origin of food are often unclear to children today as the connection from pasture to stomach is less clear than before. Consumption of the local environment also needs to be raised and interest in the utilization of raw materials and natural products from one's own environment needs to be stimulated. Children are the future and create a fun driving force for innovation and a healthy lifestyle in the spirit of the United Nations' Global Goals for the Sustainability of World Communities. The project is based on the idea of entertainers and aims to strengthen children's knowledge and awareness of regional Icelandic primary food production and the generous Icelandic nature and its connection to food acquisition, through play and education. The project also emphasizes a discussion on responsible consumption where respect is given to nature and those who feed the nation, sustainable production methods, animal and human conditions and environmental considerations. The implementation of the project involves the children learning about the world goals of the United Nations, food traditions and the resources of their own region. Then the children go on a field trip to gather raw materials in the wild and / or to a primary producer in the area. The children then cook from the raw material that was picked up and finally consume the food. Part of the project involves the school in question making a short documentary about its implementation, which will be accessible to everyone for information on youtube.com, but the purpose is for children all over the country to learn in a live way about food traditions and resources in other parts of the country by watching videos from other schools. The children, with the help of teachers or others, are involved in making the videos themselves. Thus, part of the project is that children educate children through entertainment in a medium that children use a lot today, about important issues in life and the present and the future.

The project emphases the use of local produce and teaches young children in a fun way about their food and how to improve towards a healthier more sustainable lifestyle. Similar initiatives can be implemented in cities and regions all over the world. The idea of creating and sharing videos by the children about their own experiences and food traditions with each other could have another, positive aspect in bringing different regions closer together as well.

Location: Iceland, replicable at a global scale
Source: Matis, https://matis.is/en/matis_projects/krakkar-kokka/

Slow Food Macedonia

Consumption

Slow Food is an international, non-profit organization with members and supporters around the world who associate pleasure and good food with a commitment to the community and the environment. Promoted as an alternative to fast food, Slow Food seeks to protect traditional and regional cuisines from extinction, to encourage farming with plants, seeds and livestock characteristic of the local ecosystem and to produce food whose technology is based on local knowledge. It is trying to achieve its goals of sustainable food and promotion of local small producers through an agenda aimed against the globalization of agriculture and gastronomy.

From eco-gastronomy to neo-gastronomy, Slow Food believes in "new gastronomy" as a freedom of choice, as an education, a multidisciplinary approach to food that enables us to live our lives as better possible, using valuable resources. Slow Food stands for good, clean and fair food for all.

It is an international movement which opposes fast food and globalization. Promoting Slow Food philosophy by promoting and supporting local artisans, farmers, chefs through local and international events such as workshops, tastings, fairs and markets.

Location: Skopje, North Macedonia and Europe (established in Torino, Italy)
Source: Slow Food Macedonia, https://slowfood.mk/

Naša bauta - zero waste store with local products

Consumption, distribution, waste

Naša bauta is cooperative which promotes and develops sustainable practices and raise awareness about the importance of a sustainable lifestyle connects key producers and food processors in the region. The cooperative represents a direct link between food producers and the consumer. Through its activities, it also collects information on the needs of consumers, and at the same time encourages and educates consumers on sustainable food management.

Naša bauta encourages customers to come after shopping with their own packaging and thus contribute to the preservation of clean nature and the reduction of plastic waste. If they do not have packaging, they can take cleaned glass jars and bottles from us. Due to the short transport routes, the crops are fresher and thus of higher quality, the carbon footprint is lower, and there are fewer discarded products due to on-line ordering. We cooperate with various organizations in activities that follow our activities.

Location: Murska Sobota, Slovenia
Source: PE Nasa Bauta, https://www.facebook.com/nasabauta

Haarlem Food Future

Consumption, waste, awareness

The foundation 'Haarlem Food Future (HFF)' works on reducing food waste, more space for agri culture in the city and more sustainable food choices. They have an active role in stimulating the start of different living labs in Haarlem. We have a close cooperation. HFF works on different projects, such as the 'Rescued Food Broker, a project idea is to 'rescue' food from supermarkets that is too close to its 'sell by' date to be sold, but is still perfectly suitable for consumption and distribute it to those who need it. Cooking for the elderly, creating special dinner occasions and stimulate people sharing their meal time together. Aim is to reduce food waste and increase social cohesion. Co creation with supermarkets, neighborhood organizations and NGO's.

Introduction of doggy bags in the restaurants of Haarlem: a relatively unknown phenomenon in The Netherlands, the doggy bag is a good way to prevent food waste and create awareness. This project is a cooperation with local restaurants and the NGO "Haarlem Food Future". The campaign created (national) media attention and the doggy bag has become a successful feature in Haarlem restaurants.

Innovation has twofold positive impact on CRFS - it effectively contributes at (1) reducing food waste and (2) increasing awareness on food related issues among citizens/consumers. The innovation could be of interest for other cities or regions because they could learn from our direct collaboration with citizens and entrepreneurs which contribute to awareness activities at a local level.

Location: Haarlem, the Netherlands
Source: www.haarlemfoodfuture.nl

Short Supply Chain Toolbox

Consumption, market

Integration of trends in farm-based shops in order to convince the consumer to buy local food products. The Toolbox consist of short movies, guidelines, documents to inspire local farmers. The Toolbox illustrates the customer journey and includes 7 topics such as preparation of customers visit, store organization, marketing, online shopping, payment tools etc. Local Shops are integrating the tips and tricks of the Toolbox in their own organization, e.g. development of website, online shop, development of logo etc.

Location: Multiple Farms in West-Flanders, Belgium
Source: https://inagro.be/korte-keten-toolbox

Pedon Experience School

Consumption

Pedon Experience School is committed to promote healthy eating habits from our youngest generation. School has created a food education path for primary schools. Through a series of playful activities, children learn first-hand about the world of grains, pulses and seeds, discovering their incredible and amazing properties.
The practice can be implemented in collaboration with local schools.
In the 2021/2022 scholastic year, it is planned to involve 1500 children.

Location: Pedon, Italy
Source: Pedon Experience School, https://www.pedon.it/en/sustainability/

Agri-Urban Case studies

Production, markets, waste, Livelihood & growth, consumption

The Educational Farms represent an important asset in Cesena territory responding to the view of developing and strengthening the agri-food sector, giving to school and families the chance to bring children near to agriculture, to let them experience territory, tastes, traditions, ancient jobs, rhythm of nature and to acquire concepts of responsibility and taking care other living being, such as a goat or a calf. We are dealing with real agricultural farms, each one with its peculiarity and specialization.

Abergavenny Community Canteen held its first meal as a one-off experiment at a church hall in the town centre in February 2012. Six years and sixty-seven meals later, hundreds of local people and their visitors from further afield have cooked and eaten together, enjoying fresh, nutritious, tasty and affordable food whilst respecting the environment. The meals are vegetarian or vegan and where possible the ingredients are sourced locally. A local organic grower provides fresh fruit and vegetables, whilst other items are bought from the local market. Supermarkets are turned to as a last resort. Fairtrade goods, such as Zaytoun Palestinian olive oil, are used where appropriate. Meals often reflect the cooking of a particular region or country and may introduce people to unfamiliar foods or flavours. By no means are all of the diners vegan or vegetarian, but nobody has ever suggested they are not getting a 'proper' meal. Minimising waste is a priority. There is little left over food, but if there is any it is taken away in return for a small donation at the end of the meal. All vegetable peelings are composted as a matter of course and packaging is recycled. The success of the Canteen relies upon co-operation. Each of the monthly meals is prepared and cooked by a different group of volunteers.

Location: Municipality of Baena (Spain), Municipality of Fundão (Portugal), Monmouthshire County Council (Wales), LAG Pays des Condruses (Belgium),Municipality of Södertälje (Sweden), Municipality of Jelgava (Latvia), Municipality of Petrinja (Croatia), Municipality of Pyli (Greece),Municipality of Cesena (Italy),Municipality of Mouans-Sartoux (France) - Municipality of Mollet Del Vallès (Spain)
Source: https://urbact.eu/sites/default/files/media/agri-urban_study_cases_-_web_pages.pdf

Collaboration of Urban Agri Culture: Vrij Waterland / Plukweide /Ecoring/Wereldtuin

Livelihood & growth, consumption, Ecosystem services, awareness, education, biodiversity

Haarlem has a few places for agri culture in the City. Vrij Waterland and Plukweide are good examples. It is a place where you can pick flowers, harvest your own vegetables and there are different forms of education in gardening. It is also a place where new Haarlemmers (refugees) learn how to garden and have their own small piece of land.

These places are necessary to develop our sustainable food system. People need to connect with their food again to be aware of the effort it takes to grow food.

Unfortunately, these places are usually temporary in Haarlem, due to constant lack of space. It takes time to create sustain soil, with more biodiversity and a long-term advantage of urban agriculture, which needs investment. This is much easier with long term contracts. The area of Vrij Waterland/ Plukweide will be redesigned. We are closely involved in this process and plead to create a city park with different functions, such as sport, horeca and urban agri culture. In this way it is possible to combine functions and create long term contracts for urban agriculture, which is necessary for a sustainable food system.

The positive impact of innovations on CRFS is regarding individual food management and educational services regarding individual training possibilities to garden owners if they are willing to do so. And also creating new instruments for municipalities to give urban agri culture a place for the long term.

Location: Tennispad 2, 2034 JA Haarlem, the Netherlands
Source: Kom plukken - Plukweide - Bloemen Pluktuin Haarlem, https://www.plukweide.nl; Vrij Waterland – Vrij Waterland, https://www.vrijwaterland.nl; Wat is Stichting Ecoring Haarlem, https://ecoring.nl; Tuin, Sport, Taal en Atelier — Wereldkeuken Haarlem, https://www.wereldkeukenhaarlem.nl/tuinatelier1

Tainã Vie Café & Experiences

Production, processing, distribution, markets, consumption, ecosystem services

"Jooyridez" & "Tainã Vie" is one of CRFS Iași (North-East Development Region, Romania)'s innovative concepts which promotes both healthy eating and cycling as outdoor recreation. Dragoș and Oana Iliescu, two sympathetic young people, are developing a sustainable business at the edge of the Bârnova forest (Bârnova commune) and on the outskirts of the Iași metropolitan area (the best-known location for families and young people who spend their weekends in the open). Their passion for cycling and healthy eating has inspired many young people in Iași and has boosted other businesses in the metropolitan area, with their company being recognized as an innovative business idea within the Rubizmo project (Horizon 2020). The "Tainã Vie" apiary began producing and marketing bee honey and derived products in 2012, and the "Jooyridez" business (recreational activities and electric bicycle rental) began in 2019 with significant assistance from European funds. The two businesses first collaborated by developing guided tours by electric-assisted bicycles. The education concerning organic and healthy eating was achieved during these tours by offering bee products brand "Tainã Vie" to tour participants, as well as traditional tastings. Later, by expanding the activity, a recreational space called "Tainã Vie Café & Experiences" was created in 2021, suitable for brunch, glamping, food education, outdoor education, and more, which brings together and promotes local producers (most of them ecologically certified). The "Jooyridez" space serves as a creative hub, hosting a variety of workshops, leisure activities, gastronomic events, and promoting local producers and short food supply chains. It serves as a hub for the development and implementation of sustainable ideas for the local community and responsible Iași consumers.

The business is truly innovative in the sense that young people not only have the chance to connect/reconnect with one another, but also to reconnect with one's former self, as well as to find a source and a sustainable model to implement their own ideas. "Tainã Vie" and "Jooyridez" have knowledge transfer experience, especially with young people. In the summer of 2021, for instance, "Tainã Vie Café & Experiences" and "Jooyridez" hosted the event titled "A Good State of Mind", an outdoor camp event with young people from social service centers in Iași County and 24 volunteers, where they shared their own experiences, participated in non-formal recreational activities, and tasted "Tainã Vie" bee products.

Location: Bârnova, Bârnova Commune, Iași County
Source: SC TAINA VIE SRL, http://www.tainavie.ro https://jooyridez.ro https://www.facebook.com/TainaVieCafe, https://www.facebook.com/Jooyridez; https://www.facebook.com/tainavie, https://www.linkedin.com/company/taina-vie/ https://www.instagram.com/jooyridez/

FOOD AND ORGANIC WASTE

Food loss and waste is a significant issue that should be prevented, reduced, and managed through along the food supply chain, spanning both rural and urban territory. The chapter brings together innovations that address waste reduction, recycling from USA, Italy, Latvia, Finland, Spain, Belgium, the Netherlands, France, Romania.

Leanpath

Processing, consumption, waste

Leanpath is offering data-based technological solutions to prevent food waste mainly in large canteens or restaurants. The data is helping chefs to set up more efficient menus and to be more efficient, reduce waste and save money. They work with AI power food waste tracker to make it simple to weigh and track all the food waste. Also from a consumer perspective, Leanpath 360FS Tracker measures plate scrapings automatically, with no user interaction required, meaning plate waste can be tracked in the front of the house as well as in the kitchen. The Leanpath Food Waste Prevention Platform is a combination of hardware, software and customer success programs that, following the formula Track – Discover – Drive, ensures fast and lasting food waste prevention for any kitchen. They are also active in disseminating, through whitepapers, webinars and educational courses, the issue of food waste to a wide plethora of stakeholders

Working in over 40 countries in every foodservice segment and with big brands, LeanPath not only contributes on average to 50% reduction in food waste per site, on average 2-8% reduction in food purchases, but also to prevent over 90 million pounds of food waste.

Providing assistance (financial or knowledge-based) to both large-scale and small-scale organizations to enable them to achieve measurable impact in reducing food waste is what can be learned from this form of innovation, which perfectly combines high-tech approach, deep knowledge of food waste, and environmental impact.

Location: Portland, Oregon, USA
Source: Leanpath, CEO & Co-Founder Andrew Shakman, https://www.leanpath.com/

Venice lagoon – utilization of food waste for the production of cosmetic products – UNIVE start-up VeNice

Production, Processing, Waste

The extracts from food biomass are rich of bio-metabolites and can be used as raw material for the preparation of cosmetic products. The tangible benefit is to use natural based raw materials for the production of high value economic products with effective benefits for the local economy. Artichoke is the raw material used in this project: 80% of its consistency is thrown away: the stem, outer leaves and thorn. Venice is famous for its rich local production of artichokes so called "castraure" in the island of S. Erasmo Also this project is fulfilling the UN Millennium goals in terms of sustainability not only environmental, but also in the economic and social dimension: goal 12 of smart utilization of the food waste and fostering a local production (social dimension).

There is a positive cascade effect in the territory. It has been involved also a stand in the Venetian greenmarket which has provided the artichokes' waste that were processed in a laboratory: The active principles were extracted through a green technology (not solvent technologies) such as microwaves, ultrasounds. Extracts of artichokes: inulina polifenoli, wheat proteins, polisaccaridi, jojoba oil, oil of grapes seeds, lactic acid, ialuronic acid which were introduced in a patented cosmetic formula. The products were tested in local beauty salons (gel, emulsion and spray). But there was the goal to achieve the 100 % of utilization of the wastes. After the cosmetic utilization of the waste, there was still an organic waste, which has been transformed in an active carbon – biochar for the utilization as face mask.

The final results are: (1) use of a local product waste; (2) zero waste; (3) tangible economic results – circular economy; (4) replicable in other areas of production of artichokes and other products such as shells of hazelnuts. It is a very good example of circular economy activity which has positive cascade effects in terms of local economy development, social context and sustainable production activities fulfilling the terms of reference of the European Green Deal.

Location: Venice, Veneto, Italy
Source: Ca' Foscari University of Venice start up VeNice, www.ve-nice.org

From waste to food

Waste, production

LtD Getliņi EKO is a company jointly established by the two municipalities, which manages the largest municipal solid waste landfill in the Baltic States. In the landfill of Getliņi EKO biodegradable waste has been used for production of biogas, meanwhile materials and metal products useful for processing have been delivered to companies engaged in the recovery and recycling of these materials.

The landfill gas produced in the cells is transferred to the Getliņi power unit, then burned in six internal combustion engines and converted into energy – electricity and heat. The electricity is sold to energy company and the heat is used in SIA Getliņi EKO greenhouses, where Getliņi tomatoes, cucumbers and hanging flowers are grown. Modern greenhouses that are 5.5 m high and span a total area of 11,412 m2 are built in the territory of SIA Getliņi EKO landfill. Greenhouse plants occupy an area of 10,512 m2 and amount to 25,000 seedlings planted. Annually, SIA Getliņi EKO produces about 500 tonnes of tomatoes.

The greenhouses are equipped with climate control facilities which provide the conditions necessary for growing plants. Cultivated plants are grown in mineral wool and hung in planting beds which are positioned 70 cm above the ground level. This ensures that the cultivated plants do not come into contact with the ground. The pollination of tomato plants is ensured by colonies of bumblebees which are placed in the greenhouse as soon as the first bunch of plants blossoms.

Innovation provides modern, safe and efficient municipal solid waste management and disposal, as well as electricity generation. The investments that have been made in waste management and electricity generation shown their effectiveness, financial returns and positive impact on the environment.

Location: Stopiņi Parish, Latvia
Source: SIA Getliņi EKO, https://www.getlini.lv/en

Rescuedbox

This initiative started with a vision of how food should be – fresh and local. The founder, Malvina, became more and more concerned about the environment and to reduce her carbon footprint and waste on this planet resolved to change her everyday habits.

So how did she come up with Rescuedbox? During lockdown in London, like everyone else she became obsessed with cooking, mostly vegan meals, and she came across a subscription-based company delivering the so-called ugly fruits and veggies. These ugly but fresh fruits and veggies that were destined to end up in landfills, became her best friends and she spent most of the time in the kitchen with her flatmates coming up with new and exciting meals. She started looking into waste in Cyprus and she was appalled to find how much food was waste in general and of that around 4,000 tonnes were produce waste. Fruits and veggies that were too big, too small, too ugly to meet the cosmetic and aesthetic requirements of the supermarkets or simply too many and end up in our landfills to rot.

The mission of Rescuedbox is to eliminate waste and become part of the solution, work with local farmers' cooperatives to deliver only the freshest produces, sustainability through the use of recyclable boxes and tapes, optimizing delivery routes to decrease carbon footprint, customer experience with excellent customer service and safety measures, helping those in need through donations of 10% of the rescued boxes to charities every week, and spreading the cause through building strong partnerships with like-minded local organizations.

Upon subscription, individuals choose the size of boxes that fits their requirements which are delivered weekly. Each month or period, a list of the fruits, vegetables and greens that would be rescued are uploaded in their website.

Location: Cyprus
Source: https://rescuedbox.com

The Ham Trick (Kinkkutemppu)

Consumption, waste

Finns eat big hams at Christmas time. When the ham is cooked, a lot of ham grease is released. People can pack and take the grease to public collecting containers. Collected ham grease will be turned into biodiesel in a fuel industry. The grease from one ham gives enough fuel to drive three kilometres. Renewable biodiesel makes 90 % less of the carbon footprint compared to the diesel made out of the oil.

The most important impact of the "Ham Trick" is to raise awareness among the consumers about alternative fuels and their ingredients. Also, the amount of the bio waste reduces.

The Ham Trick can be used is same kind of occasions as long as it is transferred to the local cultural context.

Location: Finland
Source: https://kinkkutemppu.com/ and https://www.kemianteollisuus.fi/en/

The first public bus powered by biomethane in Spain begins to circulate in A Coruña

Waste

The biomethane gas that is produced during the waste water purification process of the Bens WWTP (Wastewater Treatment Plant) in A Coruña has started to move the first public bus that runs on renewable natural gas in all of Spain.

The bus, from the Cal Pita company, will cover the route that joins the stops at A Coruña, Perillo, San Pedro, O Carballo, Osedo and Sada. It is a vehicle that travels an average of 80,000 kilometers per year, which means the reduction of tons of pollution per year.

The technology that drives this vehicle has been developed thanks to the collaboration of WWTP Bens, Naturgy and the EnergyLab Technology Center; and it is an example of the viability of the circular economy model. This pioneering project ensures the constant supply of raw material, economic savings and also the reduction of CO2 emitted into the atmosphere.

Reduction of CO2 emitted into the atmosphere. Also social impact, as it powers a citizen transportation service. Other cities can replicate the experiment, as they also have Wastewater Treatment Plant generating biomethane.

Location: A Coruña, Spain
Source: https://edarbens.es/el-primer-autobus-publico-movido-con-biometano-de-espana-comienza-a-circular-en-a-coruna/

Product development with secondary streams from agroindustry

Waste

Hop Shoots are very popular in the Westhoek (region in West-Flanders, Belgium). A part of the hop shots is very popular by gastronomic chefs, the other part has a texture which is not pleasable because of the amount of fiber.

With that secondary stream an assortment of new food products has been developed by VIVES in cooperation with a social economy. The products are solved. Less food waste.

Location: Poperinge, Belgium
Source: https://www.houblonesse.be/

Sweet error - leftover sweets

Waste, production, processing

Incorrectly designed and colored candies, or otherwise having some "error" are less likely to end up in the trash as candy makers in Finland (including Fazer and Panda) have begun to bag their "error" candies. The waste bag contains sweets that differ in size and color from other similar sweets. The taste is perfect, but the appearance varies. According to Fazer, the most common quality defects in the loss batches are color defects, the size of the candies is too large or small, or the wrong candy gets lost in the candy mix.

Companies Fazer and Panda strive to reduce the losses generated in their production by continuously improving measures and several development projects. Responsibility is an integral part of these companies' strategy. Reducing food waste is one of the key ways to minimize the negative environmental impact of food production.

Food waste occurs at all stages of the food chain, and every act matter. This is a good example how food loss can be minimized in production line, and increase the level of responsibility. It's a good marketing message for wider audience itself, and can make a difference to the brand.

Location: Finland
Source: Fazer and Panda

A shared refrigerator

Consumption, Waste

A shared refrigerator is a communal way to reduce food waste. Anyone can bring food to the shared fridge and where anyone can pick up food. The food can be homemade or groceries. The central principle of the refrigerator is to be politically and religiously non-aligned.

The common refrigerator is known to be the second of its kind in Finland. The first was established in Kotka and goes by the name Lost Food Cabinet. The idea is based on the Spanish Solidarity Refrigerator (Nevera Solidaria). If there is extra food that you cannot use yourself, you can bring it to the shared refrigerator, where another person who needs food can take it. It allows to reduce food waste and get food in need. In your own living environment, you can help those in need and those in need have a lower threshold to seek food help.

Location: Seinäjoki, Finland
Source:https://www.kakskatta.com/yhteinen-jaakaappi/;
https://www.facebook.com/yhteinenjaakaappiseinajoki/

Food waste collection

Waste

Les Alchimistes collect the food waste of professionals in the Marseille metropolitan area, in order to transform them into compost that can be used in urban farming and gardening. Les Alchimistes set up the logistics and the infrastructure needed to help businesses and other organisations to manage their waste sorting and the collection of food waste. This is a local response to Grenelle II law which made it an obligation for businesses producing more than 10 tons of bio waste to valorise them by transforming them into a useable good.

The problem of biodegradable and food waste production and use. It also refers to the problem of access to biomass and resources and organic material, which is of great importance to local farmers in Marseille.

Location: Marseille, France
Source: https://alchimistes.co/compostage-bouches-du-rhone/

Leader Group Restaurants

Waste, local entrepreneurs, restaurants, reducing waste, circular economy

A group of 23 restaurants, including 3 with a Michelin star, committed to the cause of creating a sustainable food system in Haarlem. Initiated, co-created and coordinated by the city of Haarlem and co-financed by the province of Noord Holland and the national ministry of Infrastructure. Both entities are closely involved in the process and not just financiers. Goals of this living lab include creating a green menu that contributes to the protein transition, increasing the use of renewable energy and dealing with waste disposal problems and waste separation issues. Especially the waste disposal and separation issues are interesting in terms of policy development. The NGO "Haarlem Food Future" functions as a link to the citizens of Haarlem to make sure that the developments are shared broadly in their network in the city.

Their latest project is 'WeCup', a reusable to go coffee cup, in order to get rid of the paper cups which are used a lot, especially the past two years dealing with Covid-19. More than 25 restaurants joined the project. The project can be impended in other cities.

Location: Haarlem, the Netherlands
Source: Zonder afval een to-go koffie met de WeCup - Gemeente Haarlem , Hostnet: Uw domeinnaam en webhosting zijn nu actief, wecup.nl; Gemeenten Haarlem, Circulaire Restaurants, horecatrends.com

#ZeroRisipăAlimentară (Zero food waste)

Distribution, consumption, waste

In Iasi is the most sustainable bistro in Romania, CUIB Bistro, and which tends to become the first Zero Waste certificate in Romania. The dishes are delivered in jars or on paper, customers receive free filtered water, and the ingredients from which the menu is created are local or regional. In seven years, CUIB has prevented more than 11,000 packages from reaching the landfill, saved at least 23 million litres of water and avoided consuming more than 1,350 living things.

At the beginning of the pandemic, when all the restaurants adapted quickly and started sending food home to customers, CUIB did not hurry and took time to think. The bistro in Iași is the most sustainable in Romania and tends to become one without waste, so the variants through which the food would have reached the customers' door had to be weighed well, without this meaning polyester or cardboard pans, bags or cutlery disposable, which would have ended up in the trash anyway. After nine months, CUIB has found a solution that respects the values of the founders: the main dishes (soups and borscht) are delivered in glass jars, and the rest of the dishes are wrapped in baking paper (which can be reused by customers for cooking and then composted), tied with hemp twine. Customers receive a 20% discount if they bring their own containers to pack their food, and those who come by bike and with containers receive a 30% discount.

Location: Iasi, Romania
Source: https://www.facebook.com/laCUIB; https://www.facebook.com/mai.bine/

The Gothenburg Model for reduced food waste

Waste

The innovation was created and implemented as a pilot project that aimed at reducing food waste in municipal kitchens through using a framework and checklist for monitoring food waste. The main beneficiaries are the city and the environment since it reduces costs as well as reduces food waste. The innovation helped to reduce food waste by 50% during a period of 2 years.
The model could be applied in other cities as well, one example that has already been studied is the transfer to street markets in São Paulo, showing a promising application area. Overall other cities can create similar models to reduce food waste by using tools for planning and measurement.

Location: Gothenburg, Sweden
Source: The model was developed by the City of Gothenburg together with Måltid Sverige and is summarized in the handbook, https://maltidsverige.se/

NoFoodWasted

Waste, access to healthy diets

NoFoodWasted is an app that is currently used regionally and is looking to expand to other cities in the Netherlands to eventually be used across Europe. It aims at reducing food waste through increasing awareness of expiration dates and stimulating the consumption of food that is close to expiring. Initially the app focused on consumers and indicated which foods were reduced in supermarkets due to upcoming expiration dates. It recently was updated to include functionality supporting interaction between restaurant owners and consumers. Restaurants can now prepare meals using ingredients that will expire soon and the consumer can locate and purchase these featured meals through the app at a discount and pick them up at the restaurant. Restaurants, supermarkets and consumers join on an individual and voluntary basis, but all have economic incentives to do so.

The app facilitates trade and consumption of foods that would otherwise be wasted, thereby decreasing food waste. However, other benefits spill out into the region, as profit margins for restaurants and grocery stores increase and the consumer enjoys discounted meals. The discount serves an equality in access to food, as it allows consumers to purchase fresh foods at discounted prices.

This app supports a win-win situation for both reducing food waste and stimulating societal beneficial economic outcomes. Attention could be given to providing access to individuals that are less able to afford healthy foods or using these foods at foodbanks.

Location: 's Hertogenbosch, the Netherlands
Source: http://www.nofoodwasted.com/

Insect Farming as a tool for improving city region food systems

Waste

The innovation is a business model for production of insects larvae. The business model will serve as a tool in elimination of municipal (urban) organic waste by collecting it, transporting it and recycle it in the peri-urban regions. The main beneficiaries are the producers which have an opportunity to create product with higher economic value (highly nutritional animal feed product) from free inputs (organic waste, food leftovers, perished vegetables and grains etc.). Improved food security, creating sustainable agricultural business models, implementing circular economy in the CRFS, lower environmental impact, carbon sequestration.

Location: Edessa, Greece
Source: Skolix.eu

Instock

Waste

Instock aims to reduce food by collecting and cooking unsold food products. Electric cars are used to collect food produce from supermarkets and producers across the city region. These surpluses are either distributed to the Instock brewery, sold to individuals for discounted prices or go to Instock restaurants. These restaurants operate according to the supply they receive leading to a flexible and constantly changing menu. The experiment has proven successful as the restaurants are self-sufficient and additional restaurants have opened in the Hague and Utrecht. More recently, Instock has developed several materials supporting their services and increasing awareness of food waste, including an app and educational materials targeting primary school students.

Instock benefit the local economy through increasing revenue for supermarkets and producers. A new restaurant segment is created, which has economic benefits and allows consumers to gain utility from more sustainable consumption. Additional educational activities increase awareness on waste consumption, which may impact overall consumption patterns in the region.

The business model of Instock can be applied in any CRFS, but is more suitable for high-density regions. Alterations can be made to better suit the CRFS, such as other collection methods to reduce costs, setting up temporary pop-up restaurants to facilitate the temporary nature of experiments and an optional inclusion of educational materials.

Location: Amsterdam, the Netherlands
Source: https://www.instock.nl/en/

Coffee-based products from coffee waste

Processing, Waste

Coffee-based products from coffee waste through innovative recycling methods. Collected coffee waste from coffee-consuming premises (shops, fuel stations, offices, etc.) are recycled into reusable material thus produce eco-friendly and sustainable consumer products. Coffee is common product in all partner countries, this example helps to tackle food waste on individual household level.

Location: Latvia, EU
Source: KOFFECO; https://www.koffe.co/

Straw panels

Waste, production

The company SIA Seno tehnologiju produce constructional material - straw panels from rye straw. Rye straw is dense, hard and fibrous, not used for fodder, only for litter. Shredding and incorporating straw into the soil requires large resources. The company developed a technology that processes straw into straw panels. Straw panels are a solution that combines simple natural materials - straw, wood and clay - allows natural-friendly construction without losing aesthetic and microclimate properties. Buildings are original and energy-efficient.

Straw panel buildings can be seen in all regions of Latvia. Using the ancestral methods, company rationally uses food crops based on principles of circular economy.

Location: Vidzeme region, Latvia
Source: "STP Seno tehnologiju parks", https://salmumaja.lv/

FOOD SECURITY AND NUTRUTION

The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". The concept of food security is defined as physical and economic access to food that meets people's dietary needs and their food preferences[3]. This chapter brings together innovations that address food safety and quality issues in France, Cyprus, Croatia, Italy, Ireland.

Marché du lavoir - based on the concept of the social food security

Food security, production, distribution, markets, consumption, social inclusion & equality

The social social food security (in French : sécurité sociale alimentaire) aims at giving access to healthy and sustainable food to everyone, independently of their income. At the same time, it aims at providing farmers with a decent income. It does so by proposing three different price levels for products produced by local farmers and sold at a local market. The first price level is at 125% of the price needed to assure a decent income. It is considered as solidary, since by paying this price, customers with higher income contribute to the system and it's principle of solidarity. The second one covers all costs of the farmer, and the last one is at 65% of it, thereby allowing people with low income to get access to the products. An experimentation is currently running in Dieulefit in France's Drôme region.

It provides better living conditions for farmers while giving access to sustainable and healthy food to low income households. Giving access to healthy and sustainable food is a big issue in many cities, especially in those places where inequality rates are high. Populations with low income often have limited access to healthy and sustainable food, which creates many problems. It is therefore crucial to find innovative solutions to tackle this problem. The advantage of this experimentation is its local scale, which makes it easy to understand, analyse, and transfer to other places.

Location: Dieulefit, Drôme, France
Source: https://securite-sociale-alimentation.org/initiative/autour-du-marche-du-lavoir/

[3] World Health Organisation, https://www.who.int/trade/glossary/story028/en/

GRC FOOD e-Controller

Food security, production, processing, consumption

GRC FOOD e-ControllerIt is a digital tool. Food business operators at all stages of production, processing and distribution within their facilities are required to ensure that food of animal and non-animal origin meets the requirements of food regulations relevant to their business change, it is a great challenge for companies how to ensure compliance with legislation and how to agilely ensure compliance with their business in accordance with regulations.

Guided by these problems, the company InfoDom d.o.o. through EU funds, it is developing a software solution intended for food business organizations in order to manage their GRC processes in an organized, structured and digitized way. This is primarily achieved through the application of methods and tools for self-assessment of regulatory compliance and measuring the maturity of GRC functions within the organization, in the field of sustainable food production and processing. In addition to the control system, the project included the construction of a public web portal, which in the field of food and food safety on a one-stop-shop basis combined all regulations, codes, technical standards, regulatory requirements and consumer protection rules in one place. The GRC portal is ergonomic and quickly searchable with a large number of current content from the domain. Of particular importance for organizations is the ability to assess maturity, with specific recommendations for improving control functions. GRC FOOD e-Controller is based on artificial intelligence techniques and structured knowledge bases for the field of food. The idea is that its application will accelerate the process of control and monitoring of production, resulting in increased efficiency, reduced costs and ultimately increased quality of production, processing and distribution.

It can be used as a public good - as said repositories with comprehensive knowledge, legal frameworks, reference models, strategic documents, good practice, audits, statistics and concepts related to the topic of food, are united and systematized in a single place - a publicly accessible portal.

Cities that see the potential of this platform could contact the company to give some insights on how the platform works, what are the problems etc.

Location: Zagreb, Croatia
Source: InfoDom d.o.o., https://www.agrobiz.hr/agrovijesti/inovacija-na-podrucje-proizvodnje-i-prerade-hrane-8108

Healthy Eating Healthy Life

Consumption, healthy habits, healthy food, healthy life, local products

The University of Nicosia through the Nutrition and Dietetics programs, and in collaboration with the Cyprus Nutrition and Dietetics Association, Lidl and Christis Charalambides companies organizes a workshop on healthy eating. The activities include seminars about healthy foods, Mediterranean diet, exercise and is also supplemented with food demonstrations (preparation and tasting) for the local and regional products.

Working together with nutrition experts, the local communities, food industry and retailers, the activities create an open channel with the communities providing information about nutritional values of local food, ways to prepare the food that will preserve the nutrients, how to better utilize local products, in addition to educational activities emphasizing the need to combine healthy eating with healthy habits for a healthy life.

The activity can be transferred to any region (urban or rural, countries) and should combine academics, professionals, local communities and (whenever possible) industry and retailers.

Location: Cyprus, different regions (rural and urban)
Source: Prof Edna Yamasaki: yamasaki.e@unic.ac.cy, Kyriakos E. Georgiou: georgiou.k@unic.ac.cy

Food Innovation Hub

Market, food quality, food research, food security

The National Food Innovation Hub is a newly constructed facility adjoining the Teagasc Food Research Centre at Moorepark in Cork, Ireland. The Hub provides secure, confidential office and lab spaces for lease to food companies where they can base their research and development teams. The facility provides food companies with an opportunity to collaborate with the expert food scientists in Tegasc facility.

The hub acts as a partnership platform that connects across various ecosystem actors to foster partnerships and networks that unlock investments, stimulate innovation and collectively work to raise barriers. The National Food Innovation Hub provides a platform whereby companies of all sizes can build a research base. This kind of systematic enablers allow various stakeholders to get actively involved, drive, develop and accelerate the innovations needed in our food ecosystems.
The food innovation hubs can act as a central source for regional, local and global knowledge exchange in our food ecosystem. This would allow for shorter pipelines to bring the innovation and systematic changes to consumers and match the market needs quickly.

Location: Cork, Ireland
Source: https://www.teagasc.ie/food/research-infrastructure/food-innovation-hub/
https://www.weforum.org/projects/innovation-with-a-purpose-strengthening-food-systems-through-technology

WINE Blockchain

Food security, distribution, production

WINE Blockchain builds trust and transparency between the producer and the final consumer, by controlling the wine production chain from the origin of grapes to the transformation into the bottle. It benefits suppliers, retailers and final customers alike, by creating a trustful environment for quality control.

Consumers can learn more about the final product, increasing awareness of what they are drinking and loyalty with the brand.

Location: Padua, Veneto, Italy
Source: https://www.ezlab.it/

ENVIRONMENTAL AND ECOSYSTEM SERVICES

Sustainable and resilient CRFS promotes sufficient natural resources and ecosystem services management, respecting agroecological diversity and protecting urban ecology and ecosystems. This chapter summarizes the innovations that have positive impact on environmental and ecosystems. Cities2030 partners collected innovations represent solutions developed or implemented in Italy, Germany and Iceland.

RiverWiki

Ecosystem services

The RiverWiki is an interactive database for sharing river restoration knowledge. It was one of the key outputs from the EU LIFE+ RESTORE project. The River Restoration Centre (RRC) manages the content of the RiverWiki on behalf of the European Centre for River Restoration (ECRR), with the aim to facilitate a shared resource from which we can all learn and develop our skills. Anyone can view the RiverWiki and registered users can upload their projects with information such as objectives, techniques, costs, ecosystem benefits, monitoring results and outcomes.

Rivers are fundamental to the future of a resilient and sustainable CRFS. According to WWF's "Rivers of Food," 25% of the world's food comes from cropland irrigated by river water. River sediment also creates and sustains deltas, which produce 4% of food, and flood recession agriculture covers an estimated 10 million hectares, which produces around 1%. Additionally, 40% of global fish consumption relies on rivers. Riverwiki helps connecting river restorations projects across the world, allowing for mapping, knowledge sharing, and network analysis. It is a functional repository that can be a useful tool in the hands of policy-makers willing to restore local hydric ecosystems in order to foster the resiliency and the sustainability of the corresponding food systems.

Riverwiki's scope is growing and aims at encompassing good practices from all over the world. The practice here specifically analyzed pertains the river restoration within the municipality of Bressanvido (VI), Italy.

Location: Bressanvido (VI), Veneto, Italy
Source: https://www.therrc.co.uk/eu-riverwiki, http://www.liferisorgive.it/en/the-projects/the-project-brief/

The Blue Bank

Ecosystem services

The Blue Bank in Westfjords of Iceland is born as an attempt to revitalize a place that would be otherwise depopulated, by attracting innovation and innovators while simultaneously helping people reconnect with nature and other human beings. The Blue Bank (Blábankinn) is a mix of many things: it used to be the place to ensure basic services in Þingeyri (bank service, a library and union service). But this project has grown and now and also has a co-working space, it hosts events on business, arts, and innovation to the community. It aims to create a multi-purpose site that combines public and private activities in one, centrally located and accessible site. The goal is to provide a platform for social and economic innovation. A space that will make public services more accessible and improve communication between residents and the local government. The approach makes for an interesting dynamic—on one hand, it's a social service that looks inwards, and on the other, an entrepreneurial society that looks outwards, seeing things on an international scale.

It has turned a completely remote place into an area where to meet, collaborate, produce, learn, network, create, not only in service of the local community but also as a space to share ideas and international innovation. The original use as a banking service is continuing, while other services have been added. Programs and lessons in specific topics are organized for certain target groups. Office spaces in the form of an open office are available to rent. Community-based events allow people to learn from others and collaborate. Library 2020, a modern version of a library, is now a place where knowledge is shared. The place also hosts a maker space in the form of a satellite of FabLab Ísafjörður.

Potential for transfer: Þingeyri is a small village of 250 people in a remote area of Iceland that has become a destination for digital nomads and creatives of all sorts. It has perfectly combined the need for deceleration with innovation in the respect of the identity of the local community. It can be extremely useful for all the Living Labs located in remote areas.

Location: Þingeyri, Westfjords, Iceland
Source: The Blue Bank, founded by Arnar Sigurðsson and Arnhildur Lillý Karlsdóttir. https://www.facebook.com/blabankinn/?ref=page_internal

Aquaponics solution

Ecosystem services, production

Aquaponics is an integrated production system that, based on the circular economy principles and industrial symbiosis methods, provides for a reduction in the environmental impact of the agri-food sector. This technique involves the cultivation of vegetables without the use of land, and with a decrease in water consumption of up to 90% with respect to traditional farming practices, by recycling organic wastewater from fish farms. The aquaponics offers the following advantages: (1) it doesn't require the use of fertilizers, as it uses nutrients derived from fish farming; (2) limits the use of land, since the plants do not need to compete for the nutrients; (3) it doesn't require the use of pesticides, as these substances are not compatible with fish farming; (4) it reduces energy consumption and greenhouse gas emissions, as it doesn't require the use of agricultural equipment.

By aquaponics is meant the joint cultivation of aquatic plants and organisms in a controlled environment, with partial or total recirculation of water between the two sub-systems (dedicated to the growth of plants and aquatic organisms). Various soilless cultivation techniques are suitable for this type of application.

The technology is of great interest because it allows, through a rational use of limited spaces, the breeding of fish species and the simultaneous production of vegetables, reducing both the use of resources and the production of waste.

Location: Venezia Marghera, Italy
Source: Bluegrass project, https://www.bluefarmenvironment.com/en/expertise/carrying-capacity/

Urban Pergola

Ecosystem services

A student project in Bremerhaven: Steel nets covered with fiber material are to be installed in front of buildings and planted with fast-growing plants. This will not only cool the environment, but also filter the air in a natural way. Insects and birds will also find a new home in the green roof. Individual buildings, but also entire settlements can be equipped with the green pergolas. The loose leaf canopy lets sunlight through without affecting the cooling effect. If no shading is desired in winter, the nets can simply be removed and reinstalled in spring. That with this idea you can give small creatures like birds or insects more habitat and if you plant vines on the pergolas, you can also create an area for urban gardening.

Location: Bremerhaven, Bremen, Germany
Source: https://urban-pergola.business.site/?utm_source=gmb&utm_medium=referral

LIFE HELPSOIL and Conservation Agriculture

Ecosystem services, production

Conservation Agriculture consists of a series of cultivation practices with the objective of assuring a sustainable and stable productivity and, at the same time, preserving and strengthening agricultural resources and the environment. The principles on which it is based are: minimum soil disturbance by the processes permanent covering of the soil surface crop diversification. Conservation Agriculture plays an important role in restoring soil functionality and in enhancing its "ecosystem services", contributing to the increase of resilience and to the capacity of adaptation to climate change. FAO, for instance, identifies in these practices – combined with fertilization integrated strategies, defence of cultivation and water usage – the technical pivots on which a "sustainable intensification of agricultural production" can be built.

Life HelpSoil project aims at demonstrating, in particular, that the application of these techniques: is possible and sustainable for farms in the Po plain and in the nearby Alpine and Apennine foot-hills; guarantees the fundamental functions that the soil carries out for the environment, such as organic carbon sequestration, conservation of biodiversity and fertility, protection against erosion; improves the environmental performance of agriculture, reducing, for example, energy and water consumptions. Within the project, innovative techniques for irrigation, distribution of zootechnical effluents and defence of the cultures will be tested along and combined with the practices of Conservation Agriculture.

Location: Veneto, Italy
Source: http://www.lifehelpsoil.eu/en/

Sporta pils dārzi - gardens and meadows in the center or Riga

Livelihood & growth, production, social inclusion &equality

Sporta pils dārzi is a project organized by the citizens of Riga with an aim to open the former sport complex territory in the capital of Latvia – Riga that is inactive and put it to public use.

The area between the four streets had been abandoned and fenced off for 13 years. The owners of the quarter are a company whose plans to develop the territory into a residential quarter were slowed down by the financial crisis of 2008. While preparations are underway for construction, the owners have agreed to make the site available for temporary use free of charge for a period of three years. The gardens of the Sports Palace in Riga are one of the first precedents of this scale, when a private entrepreneur temporarily devotes his property to a public function. During the territory's development stage between 2020 and 2023, the gardens hosting different cultural and educational activities in its flowery meadows and offer private urban gardening spaces for rent. About 150 garden spaces are created using gardening boxes of different sizes and heights that are easily accessible for everyone including people with disabilities, children and seniors. Wildflower meadows and recreational zones are located in the central part of the territory and available for events and community activities.

The project's intention is to encourage the citizens of Riga to take an active part in the city's development and improvement and to create the place and time for promoting a healthier and more sustainable lifestyle and offer a possibility for an educational and contemporary leisure time. Innovations offered a solution for the transformation of derelict urban areas into gardens and meadows.

Location: Riga, Latvia
Source: Sporta pils darzi, https://sportapilsdarzi.lv/lv/about

Bostanie - Community Garden

Livelihood & growth, social inclusion & equality, production, consumption

The Community garden "Bostanie" is developed as part of a project led by the civic association "Zelena Arka", financed by the City of Skopje in 2019, also with cooperation with the Municipality of Aerodrom, Public Enterprise "Parks and Greenery", the Faculty of Forestry, the Institute of Civil Engineering and several socially responsible companies. This social garden, emphasizing the human or social aspect of gardening. A place where people can garden together and exchange knowledge and experiences about gardening horizontally, and not in a hierarchical way. The social garden "Bostanie" was created with joint efforts, this means that people who use the plots actively participate in the constant remodelling of the garden, where they grow edible plants, primarily garden crops for personal use.

The principles of gardening and the conditions for participation are specified in the gardening rules and regulations where it is clearly emphasized that all crop is intended for personal use and not for sale. The goal is to enable people who want to garden, and who do not have those conditions in the urban areas, to do it there. Many new things related to gardening and other similar life skills can be learned there, so there is no need for any prior knowledge as a prerequisite for participation. Trainings and workshops are continuously organized, therefore even the beginners can start gardening and gain knowledge and experience. In addition, gardening covers a number of other areas of social life. The vision for the social garden "Bostanie" is to be a good example that will encourage other people to take similar initiatives in their communities. To be a source not only of ideas and knowledge but also a functional community of gardeners. To encourage changes in the direction of preserving the environment through agro ecological and permaculture approaches.

This project is another contribution to the realization of the concept of a resilient city, with adaptation to climate change and strengthening of the urban resilience. Urban gardens, if they are sufficient number, i.e., on large enough area, can have a significant beneficial impact on the microclimate conditions in a city. The city has heat islands, air pollution, noise, and many other environmental and climatic challenges; but well-planned and connected gardens with pedestrian and bicycle paths could mitigate the consequences and can develop skills to easily deal with the onward challenges. The sustainability of urban gardens is based on the application of field design, taking into account all elements such as: microclimate, field geology, community experiences in growing different crops, water supply, electricity and access to roads, etc.

Urban gardening is popular in cities around the world, aims to socialize and bring citizens together by turning public spaces into gardens. The urban gardens can make significant shifts - especially if they are social and public - in the behaviour and the way people. With gardening in the urban environment there is a potential for the development of a wider movement that will take care of the city life quality, in general.

Location: Skopje, North Macedonia
Source: Zelenata arka, https://zelenataarka.mk

SOCIAL INCLUSION AND EQUITY

The access to food, employment and social services is increasing in cities and urban areas, however not everybody is able to benefit equally. Poverty, social exclusion, is still a present problem that requires the development of new solutions. This chapter summarizes innovations from Croatia, Belgium, Spain, Cyprus, Italy, Canada and other countries that address social inclusion and equality issues in the context of city region food system.

Bilogora basket

Distribution, social inclusion & equality, production, markets, consumption

Gathering together domestic producers who often find it difficult to find their way to the market. In cooperation with the recently established agricultural and veterans' cooperative "Bilogorska košara" and the Tourist Board of Bilogora - Bjelovar, Bjelovar citizens have opened store in the city center where citizens can buy local foods. These are the products of domestic family farms from the Bjelovar area, as well as the entire Bjelovar-Bilogora County. Most of the producers and organizers are war veterans which solves another problem - actively engaging vulnerable citizens and giving them new role in society which supports local producers. Implementation process was long it took three and a half years, the City of Bjelovar, veterans association and Tourist Board of Bilogora has been working intensively on the promotion of domestic, fresh and local, especially when it comes to small, domestic producers. City provided place for local store.

A year after the establishment, and then the opening of the store, the Veterans' Social and Labor Cooperative "Bilogorska košara" was assessed as the supplier of fruits and vegetables with the highest points in the Republic of Croatia. Thirty family farms gathered in the cooperative have caught the right rhythm and supply many schools with fresh fruits and vegetables, and offer proven local products to the market. This can be expanded to Zagreb region, Slavonia and Dalmatia region. The goal of the cooperative is to connect and create a cluster between other cooperatives. This example can be replicated in other countries that have similar local products.

Location: Bjelovar, Croatia
Source: https://gospodarski.hr/rubrike/ostalo/bilogorska-kosara/

NUTRICO

Social inclusion &, equity, diet, life habits, neurological function and cognition

The research NUTRICO investigates the relationship between diet (the Mediterranean diet), life habits and the neurological and cognitive functions of individuals from the 5th decade and older. It has been approved by the Cyprus National Bioethics Committee. The research consists of an online questionnaire that is completed by the individual on their health, eating habits, and their daily activities and recent health clinical results such as levels of cholesterol, sugar levels etc. This is followed by an online evaluation of their cognitive function. The results are provided to the individual with a short analysis how they fair some suggestions on how they can improve their functions, diet and lifestyle.

This research will further increase the knowledge on the correlation between the Mediterranean diet, daily activities and the cognitive function, emphasizing the need for healthy eating.
Translated to different languages, the questionnaires can evaluate diet, daily activities and cognition changes in the "aging" population. Would require specialized professionals to provide support with recommendations and data analysis – dietitians, psychologists, statisticians.

Location: Cyprus, but can be expanded to any countries.
Source: philippou.e@unic.ac.cy OR nutricostudy@gmail.com

Fingerfood

Social inclusion & equity

To prevent undernutrition by elderly people with dementia and / or dysphagia, there is developed well balanced meals easy to take, the chew and to swallow. The meals were initially made by chefs but now produced by a food manufacturer providing to many care facilities.

Location: Barnestraat, Belgium
Source: www.ruddersstove.be

Refettorio - Food for Soul

Waste, Social inclusion & equality

Food for Soul is a non-profit organization to empower communities to combat food waste through social inclusion. They provide quality, up-to-date ingredients that are perfectly edible but would otherwise go to waste and turn them into delicious, nutritious multi-course meals that both employed staff and a dedicated team of volunteers help serve to the homeless, needy and socially excluded.

Working with local organizations, producers, artists, and architects, Food for Soul reclaims undervalued spaces and transforms them into inspiring places, open to the community, they welcome people in socially vulnerable situations and serve them nutritious meals prepared from surplus food that would otherwise go to waste. It creates spaces and offers experiences that can have a real impact on local communities, making them more resilient, opening up opportunities for economic growth, and making the food system healthier and more equitable. It is rooted in giving value to both the urban ecosystem, food and untapped potential of people

Food waste and social inclusion are challenges that affect several urban areas. This form of social innovation represents a great example of the beauty coming from turning two major threats into potential.

Location: Modena, Bologna, Milan, Naples (Italy) but replicable at a global scale.
Source: Food for Soul, https://www.foodforsoul.it/it/

Recup

Social inclusion & equality, markets, consumption

Recup is a project that works in city markets to combat food waste and social exclusion. They recover food before it is thrown away, divide it between edible and non-edible, and finally redistribute it to anyone who wants to take it. The beneficiaries are the same as the doers of the work: this creates a concept of collaboration and community between different people, a possibility for intercultural and intergenerational exchange. Recup is an association that creates a linkage between two problematic aspects of the food system. On the one side, fresh food waste produced by wholesale and local markets; on the other side, malnutrition and difficult access to daily food. The collection of still edible food from markets mitigate the impact of waste and, as collection and deliveries are organised by cargo-bike. It also obtains two extra advantages: to avoid an extra number of vehicles in the urban centres, to avoid the extra impact on air quality.

Urban markets are vibrant and characteristic places where local identity can express and show itself to visitors. However, there are also places where waste (both from fresh food and packaging) is a daily problem. The paradox of the amount of edible food not sold and the presence of fragile people that cannot provide daily food in the same urban context can be mitigated by social initiatives that promote solidarity.

Location: Milan, Italy
Source: Recup, https://associazionerecup.org/

Orto della Salute

Social inclusion & equality, production, distribution

It was set up as a therapeutic phase for the rehabilitation of drug addicts attending the "Lilliput" rehabilitation centre, and sees the involvement of free citizens-associations-schools-research centres and universities to: the recovery of the permeable soils of the abandoned park; cultivation of the terraces; self-building practices for irrigation systems, compost bins, furniture and covers; soil survey; experimentation with rainwater recycling systems for irrigation; organic farming recreational and cultural events.

Recovery, care and maintenance of the part of the park abandoned due to lack of funds for day-to-day management, reopening of the part of the park; minimum agricultural production to meet the vegetable needs of the families adopting the terraces; extracurricular training workshop for children; rehabilitation therapy for addiction pathologies; cultivation and recovery of native and ancient (endangered) crops

Urban food production can be an opportunity to face specific urban problems, such as abandoned/underused green public spaces, lack of economic resources for the maintenance, presence of fragile members of the society.

Location: Ponticelli, Naples, Italy
Source: Orto Sociale Urbano della Salute e del Benessere,
https://www.facebook.com/ortosocialeurbanosaluteebenessere/

The Green Bronx Machine

Livelihood & growth, consumption, social inclusion & equality, education

Green Bronx Machine builds healthy, equitable, and resilient communities through inspired education, local food systems, and 21st Century workforce development. Dedicated to cultivating minds and harvesting hope, this school-based model using urban agriculture aligned to key school performance indicators grows healthy students and healthy schools to transform communities that are fragmented and marginalized into neighbourhoods that are inclusive and thriving. Bronx educator, Stephen Ritz, developed an incredibly successful indoor gardening curriculum that allows children to grow vegetables in the classroom, helping them eat better, be more engaged with school and give them pathways for jobs. To create a world where people do not have to leave their community to live, learn and earn in a better one.

Health and educational outcomes in low-income areas across America are staggeringly low. Green Bronx Machine was born via collaboration between life-long educator Stephen Ritz and his students who observed that as waistlines expanded, engagement and opportunities in school decreased, school performance suffered, and hope and ambition became minimized. Originally an after-school, alternative program for high school students, Green Bronx Machine has evolved into K-12+ model fully integrated into core curriculum. Students grow, eat and love their vegetables en route to spectacular academic performance. Having created the world's first edible classroom in the Bronx, the Green Bronx machine raised daily school attendance from 40% to 93% and helped create 2,200 jobs in the Bronx.

To turn any school or community gardening program into an academic and standards-based learning experience. With technology-enabled lesson plans which use food and plant life cycles to teach multiple subjects, students can learn critical thinking and problem solving as they explore, discover and create their own ecosystem.

Location: Bronx, New York, USA
Source: Green Bronx Machine, was developed by the Bronx educator Stephen Ritz, https://greenbronxmachine.org/

Mezitli Female Producers' Market

Market, social inclusion & equity

Mezitli Female Producers' Market is the first a market that is completely run by female producers in Turkey. Women are one of the most vulnerable groups as in the society of Turkey, they are often very much dependent on their families and mostly on their male relatives or husbands. The economic independence is a main factor for women of all ages in order to be able to make their own choices in life and to feel more self-confident. The main goals of the Mezitli Female producers Market is to reduce the gender-based barriers, to increase working opportunities for women; social and cultural exchange between women; to strengthen local female producers from all social and cultural, economic levels, and, thereby, increase their self-confidence.

The Mezitli Female Producers' Market project managed to reach female producers in 40 neighbourhoods of Mezitli; provided stands to women with just two preconditions; living in Mezitli and being a female producer (producing cheese, cake, marmalade, bakery, meals, desserts, olive, olive oil, handmade any kind of product is accepted). Women reached their self-confidence and independency thanks to our female producer markets with hundreds of thousands of consumers. The concept of the project allowed to reach women who are usually not going out of their house or neighbourhood without any permission of their family (sometimes it will be a father, husband or brother). Now those women have their independency and they communicate with each other (educated and non-educated ones, like engineers and primary school graduated) as producers and consumers. 650 female producers have stands at 9 female producers' markets

Location: Mezitli, Turkey
Source: https://www.milanurbanfoodpolicypact.org/wp-content/uploads/2020/12/SEE-Mezitli_2019.pdf

Unghersheim – Ville en transition

Production, distribution, livelihood & growth

Short food chain for municipal self-sufficiency (De la graine à l'assiette) includes four actions: an 8-hectare farm (30 people, 300 bread rolls per week and school canteen); communal kitchen (500 meals per day); grocery shop, craft brewery, canning production and educational farm "La maison des Natures et des Cultures". It has various positive impact on CRFS - reduction of supply from outside the municipality; conversion of underused public areas (green areas - parks) into productive areas; construction and rehabilitation of public buildings; removal of land from speculative real estate operations.

Production in the urban context can represent an advantage for local communities not only to reduce dependency from external supply, but also to bond relations between citizens and neighbours, facilitating the inclusion of fragile members of the society (elder people, migrants, homeless, etc)

Location: Unghersheim, France
Source: City of Unghersheim, https://www.mairie-ungersheim.fr/village-en-transition/

LIVELIHOOD, GROWTH

Hunger and food security remain major challenges for humanity and sustainability: in 2019, food insecurity affected 25.9% of the world's population. This section summarizes practices that address the food accessibility for vulnerable groups in society from Turkey, USA, France.

Comedor Social LA CASITA

Social inclusion & equality

La Casita is a soup kitchen in Fuenlabrada. A non-profit volunteer works there between Mondays and Fridays. It was founded by Father Antonio Quintana together with four people from Fuenlabrada. In December, it will be 22 years since its opening, then, on Calle de la Lechuga. They have been in their current position, 20 Calle Constitución, for 19 years, and they have been an association for four years.

La Casita serves breakfast and lunch from Monday to Friday in its dining room, and provides food for dinner. Apart from giving food, they have bathrooms where attendees can take two weekly showers: on Tuesdays and Thursdays.

Today, La Casita serves about 47 people. Men predominate in this group, since only two women attend the dining room. The average age of attendees is 45 years. Another curious demographic fact is that the majority of the attendees are of Spanish nationality.

This innovation can be taken as a reference to reduce inequity and improve the inclusion of entire society. This initiative now reduces the poverty level more than 50%.

Location: Fuenlabrada, Madrid, Spain
Source: https://lacasitacomedor.wixsite.com/lacasita, https://twitter.com/la_casita_

Free water delivery (Ücretsiz Su Dağıtımı)

Livelihood & growth

In the municipality of Atashehir in Turkey, there are vulnerable groups with limited access to drinking water - their income does not allow to purchase drinking water. The mayor organized a meeting with neighborhood residents and leaders to find the necessary solution. The municipality of Atashehir distributes free water to 8 neighborhoods, however, due to the increase in population and also the increase in water demand, the municipality has developed a new solution - the residents of the neighborhood are supplied with free water distribution tankers.

Locations: Ataşehir – İstanbul, Turkey
Source: https://www.atasehir.bel.tr/haber/atasehir-belediyesi-ucretsiz-su-dagitimina-devam-ediyor

A Better Life Foundation

Social inclusion & equality, waste, food security

Starting with the aim to improve food security, A Better Life Foundation provides daily meals, training, education, practise inclusive hiring and take climate change action to make a direct, meaningful difference in the lives of those who need it most. The Daily Meal Program is a cornerstone of their work. Preparing, cooking, packaging, and delivering 1,000+ scratch-made meals to residents of Vancouver's Downtown Eastside 365 days a year. Equally, with the Waste Not, Want Not! program, they are also diverting and repurposing unsellable grocery store food from making its way to the landfill, to combine food recovery with community re-imagining. Educational training also offers holistic view of dignified food security including food literacy, understanding the impact of food choices on personal health, wellbeing, and the environment.

A Better Life Foundation 37,640+ meals served, 22,650+ waste diverted from the landfill, 43,037 + co2 saved from entering the atmosphere. Under the Daily Meals program, they have served over 3,000,000 Daily Meals since 2012 to Vancouver's most at-risk population. These meals nourish more than just a basic human right to satisfy hunger.

Access to a better life includes a right to food (the good nutritious kind), purposeful employment, stable housing and holistic healthcare. When we start with food, we can work to heal our communities with the biases-breaking, everyday advocacy, action, and empathy required to inspire positive change for those who need us most. By designing unique, community-forward initiatives and evolving in service to an ever-changing landscape of immediate needs, we connect through food systems to build a better, more sustainable future.

Location: Vancuver, British Columbia, Canada
Source: A Better Life Foundation, https://www.abetterlifefoundation.ca

Alimentos por la Inclusión (Food for inclusion)

Livelihood & growth, social inclusion & equality

An initiative to combat the lack of food, medicine and hygiene products and basic necessities for 157 vulnerable families in the Community of Madrid with a member with an intellectual disability in their homes.

Gmp Foundation provides selected families, strongly affected by the Covid-19 crisis, a solidarity money card for the purchase of food, medicine and hygiene products. In this way, the beneficiaries will be able to acquire fresh products, as a complement to the aid granted by food banks, always linked to non-perishable products, guaranteeing a balanced diet for a group at risk of social exclusion. The card will be used exclusively in food stores, supermarkets and pharmacies in your area.

The beneficiary families of "Food for inclusion" have been chosen according to economic and social parameters that have determined the most urgent situations such as income level, type of family, number of people that make up the family unit, employment situation or impact of Covid on family income.

Last April, 43% of the families surveyed have been greatly affected economically by the crisis, likewise 30% indicate that their family expenses have increased considerably, a figure that rises to 40% in the case of families single parents. This percentages have been greatly reduced thanks to this innovation.

The initiative may be employed as a reference to improve the equity and inclusion in many other territories. The innovation can be applied exactly as originally designed.

Location: Madrid, Spain
Source: https://www.fundaciongmp.org/alimentosporlainclusion/

Un coquelicot entre les dents

Distribution, Consumption, Social inclusion & equality

Transformation of a car park at the municipal stadium into a community garden, meeting and sharing place at weekends, crossroads with cycle routes. Production of vegetables as a supplement for the less well-off families in the municipality (added to the baskets of the provincial food bank).

The project allows to obtain several benefits: fresh food offered to families in need, as a supplement of food bank baskets (that rarely contain fresh vegetables or fruits); reactivation of underused public and/or private spaces in the periphery; opportunities of encountering between citizens from different part of the city and the society.

Location: Dompierre sur Yon, Vandée region, France
Source: Association pour la transition écologique, sociale et solidaire à Dompierre sur Yon, https://www.facebook.com/uncoquelicotentrelesdents

FoodSHare platform

Livelihood & growth, production, consumption, social inclusion & equality

FoodShare is a digital platform for connecting food donors and food recipients that use food for final consumption or for processing in order to produce bio-based agricultural inputs (fertilizers). This platform is developed within Pilot 9 in the H2020 Ploutos project by partners from Serbia (FSH) and North Macedonia (GGP). It is an ongoing project 2020-2023. The aim of the Pilot is to facilitate the transfer of surplus food from farms to socially disadvantaged groups, by aligning logistics and processes.

The FoodSHare platform is targeting Donors (small businesses and corporations in the food industry, producers, processors, farmers, retailers, wholesalers, distributors) and Recipients (non-profit organizations and local assistance programs that redistribute the food to those in need, soup kitchens, SOS children's villages, homeless support services, day care and addiction rehabilitation centres, and more). This digitally supported solution can be used for developing a model for food sharing, reducing food waste and greenhouse gas emissions that can be implemented on a wider scale (national or regional).

Location: online
Source: https://foodshare.foodscalehub.com