

O1/A2 – WHAT ARE LOCAL AND SUSTAINABLE FOOD SYSTEMS (LSFSSs)

AUSTRIA – FRANCE - ITALY – PORTUGAL - SLOVENIA

COMPARATIVE ANALYSIS

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SCOPE

This document reports on the LSFs in Austria, France, Italy, Portugal, Slovenia.

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ACRONYMS AND DEFINITION

ACRONYM	DEFINITION
AE	Agro-Ecology
AVET	Agricultural Vocational Education and Training
BOKU	University of Natural Resources and Life Sciences, Vienna, Austria
CAP	Common Agricultural Policy
CEZ/BN	Zootechnic and animal science training center/National sheep center of Rambouillet, France
EducLocalFOOD	Acronym of the project “Teaching local and sustainable food systems”
ERM Centre	International Centre for Ecoremediation

IFOAM Organics International	International Federation of Organic Agriculture Movements
IN.N.E.R.	International Network of Eco Regions
ISA	Instituto Superior de Agronomia/Universidade de Lisboa, Portugal
ISEG	Instituto Superior de Economia e Gestão · Universidade de Lisboa, Portugal
LSFS	Local and Sustainable Food System
OEP	Osservatorio Europeo del Paesaggio (European Landscape Observatory), Italy
UL	Universidade de Lisboa, Portugal
UM	University of Maribor, Slovenia
VET	Vocational Education and Training

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1. INTRODUCTION

The present industrial food system, based on monocultures, widespread use of agrochemicals and commercialization of genetically modified seeds, represents a serious threat with high social, environmental and health costs (<https://navdanyainternational.org/an-agro-ecological-transition/>). The “Green Revolution” was proclaimed a failure. It has brought with it several problems on all fronts: from environmental degradation, with loss of biodiversity and fertile soils and climate change to the unequal access to land and other resources, with consequent increase of poverty, sanitary emergencies and malnutrition.

In the last few years, there was an awareness about the environmental emergency and the need for change, quickly, the individual behaviors and the public policy in a sustainable key to save our planet, the only one that we have. Inspired by the Swedish teenager Greta Thunberg, the younger members of society are leading the fight against global warming. Anxious about their future on a hotter planet and angry at world leaders for failing to arrest the crisis, millions of young people poured into the streets on every continent for the “Fridays for future”, a global climate protest. Therefore, in a historical moment like this, it is important to provide to the younger generations solutions and concrete responses.

The growing interest for the healthy nourishment in the public debate make the food and its system (production, transformation and consumption) an important aspect to include in the teaching system, in order to understand it and to stimulate the awareness of the young people in relation to the current social and environmental problems. Learning the food system means also facing questions like food safety, biodiversity and natural resources conservation, safeguard of the local heritage, understanding the territorial and occupational dynamics, energy dependence and, obviously, the problem of climate changes. In this context, ***the LSFs (Local and Sustainable Food Systems) are able to respond to the environmental emergencies and to the challengers of the third millennium for a sustainable management of the Planet’s resources.***

The present report provides a comparative analysis on the LSFs in Austria, France, Italy, Portugal, Slovenia, in order to disseminate their knowledge, through the teaching in the schools and in the agricultural training centers. To this end, it was necessary to clarify the state of the art in the countries involved in the project, where there are several well-established best practices. Through questionnaires, interviews and field research, we clarified the definition of LSFs at a conceptual level, and the most diffused typologies, in order to characterize them, to identify the legislative framework, the restrictions

and the opportunities for their development and promotion, as well as proposing actions to improve them.

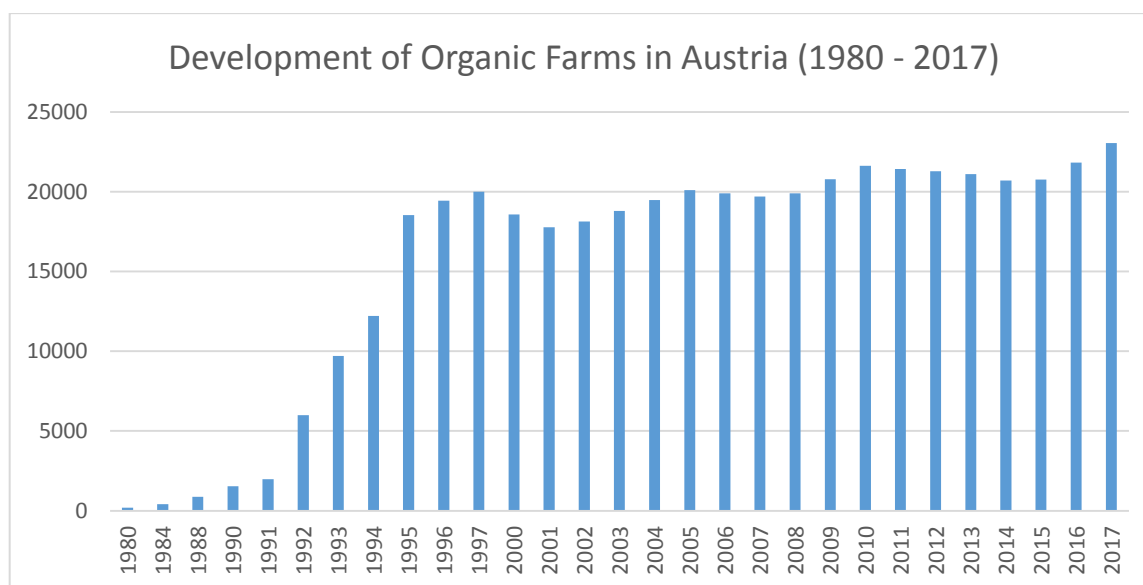
2. CURRENT REPRESENTATION OF LSFS IN THE 5 COUNTRIES

The following section of this report examines “the idea” of LSFSs in the 5 countries involved in the project EducLocalFood.

None of them has a formal or official definition of LSFSs, but each of them tries to give one, considering different points, such as political, geographic, societal, environmental and scientific aspects.

Austria

The long history and the success of organic agriculture (OA) is important to understand the present situation of LSFSs in Austria. After the second world war, Austria’s agricultural policy (unlike Germany’s) opted to support small farm holders, traditional ways of production instead of excessive production, as a result of its big share of relatively small-scaled holdings and also mountainous areas, which are less suitable for intensive agricultural (Kröger, 2006). OA represented the response to the multiple crises (ecological and soil-related as well as economic and social) in agricultural science and production (Vogt, 2007). During the 1970ies, Austria experienced a unique political situation as the social democratic party was ruling, which enabled the creation of the Österreichische Bergbauernvereinigung and Bergbauerninstitut (Austrian Mountain Farmers Association and Mountain Farmers Institute). These successfully facilitated initiatives/cooperatives promoting regional development by closer producer-consumer relationships and the shift to higher produce quality and towards organic production. The entry to European Union paved the way for green innovative approaches that went along with changing consumer expectations, which favored local and environmentally friendly or organically produced food. Therefore, support for OA was high in the new agro-environmental policies and programs and resulted in the high conversation rates toward OA (Schermer, 2014). Not by chance, it is over the past 20 years that the organic farms increased considerably as well as organic markets (Fig.1).



(Figure 1 Development of Organic Farms in Austria (1980 – 2017) (Own table with data from Grüner Bericht 1998 and Grüner Bericht 2018)

There are two main programmes/policies in Austria enclosing content in regard to LSFS in one or another form:

- Aktionsprogramm Biologische Landwirtschaft (2015-2020), that is the most important policy in Austria to support OA, providing for investment support, processing and marketing, education, information and sales for organic producers (BMLFUW, 2015);
- Das Österreichische Programm für ländliche Entwicklung (2014 – 2020) that is the central policy for rural development in Austria (BMNT, 2018a).

Beside these two instruments, the LEADER scheme is important for the potential support of LFSF in Austria (BMNT, 2018a).

A working definition of LSFS is based on Ericksen (2008) and especially Allen and Prosperi (2016) **sustainable food system framework**, including the dimension of sustainability (via assessment of indicators of vulnerability and resilience of the food system). In particular, Allen and Prosperi propose a four-step methodological process to operationalize sustainability within a food system: “1. defining a study area [(defining the boundaries)] and scale [(levels of sub-systems)] of analysis; 2. identifying essential drivers of change; 3. Identifying essential food systems’ outcomes; and 4. developing a causal

model by selecting essential interactions, drivers, and outcomes, and examining respective systems' exposure, sensitivity, and recovery potential" (Allen & Prosperi, 2016).

For analysing the characteristics of LSFSs in Austria it is suggested to use the *Best Practice Guideline for Agriculture and Value Chains* suggested by SOAAN, but considering the challenges institutionalised OA is facing by focusing the on the *nature and philosophy* and the *Environment and protest* type of ethical values (Freyer et al., 2015) within the organic food system in Austria. We propose so to avoid the traps of restricting the debates in OA on the "*market-compatible*" *dimensions and objects* (Fouilleux & Loconto, 2017; Guthman, 2008) within the organic movement and so open up the field for LSFS aiming to transform the food system.

In France, the LFSs appeared in 2000's particularly with the creation of an AMAP (Association for Peasant Agriculture Maintain) in Aubagne, to meet the problems caused by the multiplication of intermediaries in the food production system. This led to economic and social problems, related to support of small local farmers, but also sanitary issues, seeing as trust in food is lost. A better market transparency as well as a better products traceability is requested by the consumers. Concretely, the LFSs consist of a rapprochement between producers and consumers by developing short supply chains or local supply chains, restoring the confidence between them, meeting directly. The short supply chains have been described by the Agricultural ministry in 2009 (Rapport d'information N° 2942. 2015.). It is a commercialization model of food products based either on the direct sell from the producer to the consumer (farm sell, market) or by the indirect sell if there is only one intermediary between the farmer and the consumer.

Therefore, it's important to clarify the proximity circuits concept, in particular, the urban and peri-urban agriculture (AUP) (Stevenson et al., 1996), which consists to cultivate and breed inside and around cities, creating occasions to meet, exchange and learn between citizens. In France, AUP can be presented through 7 kinds (Lelièvre A. et al, 2018):

- Peri-urban farms, there are often outside cities because of densification and sanitary issues but continue to supply citizens (mainly with vegetables and poultry). There are also several farm which subsist inside cities but pretend to a social activities (as pedagogical farm or cultural events)
- Green roofs which develop since 1980 with social or productive dimension
- Green walls mainly used for hops production for microbreweries
- Greenhouses
- Mushroom shed which can take place into abandoned building or parking
- Individual or shared gardens
- Vegetalization of public areas generated by private and militant movement such “Incroyables comestibles” but also from cities.

Initially, local food systems did not aim sustainability of the food system, but today, with the awareness of environmental and social impacts, they can be merged to a sustainable approach. A sustainable food system (SFS) can be described as “a network of territorial collaboration which includes production, processing, supply, consumption of food products and residual waste management in order to enhance environmental, economic and social health of the collectivity. It includes actors, activities and infrastructures implied in food security of a population and are supported by territorial food governance” (Vivre en Ville, from FCM, 2010; GIEC, 2014). Sustainable food production means an

economically viable, ecologically safe, socially fair and humane agriculture (Zahm et al., 2015), with the respect of seasonality, enhancing nutritional quality of food products, sparing in natural resources, sparing in energy and limiting food waste. It also must reduce the food packaging and use a maximum of recycled and recyclable material by circular economy processes, but also the GHG emissions during the products distribution (collective point of sale, adequacy between delivery vehicle and carried volume, delivery van back and forth filled, optimization of the delivery circuit...) (ADEME, 2017).

It includes also the concept of sustainable diet, that, according to the FAO (2010), indicates a diets with few impact on environment, which contribute to food nutritional security and healthy life of current and future generations; it contribute to protect and respect biodiversity and ecosystems, are culturally acceptable, economically fair and accessible, affordable, nutritionally sure and healthy, and enable to optimize natural human resources". It can be achieved with an attention to the several certifications on quality and origin, such as registered/protected designation of origin or protected geographical indication (AOP, AOC and IGP in French) (Marcel M-L, 2015).

In 2010, the "Programme National pour l'Alimentation" (PNA) – "Food National Program" has been developed and put the framework of a public policy for food. The 13th October 2014, the territorial anchorage has become for the first time in France an aim for the farming and food policies thanks to the law concerning farming, food and forest. Whereupon the PNA has been declined in four axes: social justice, food education for youth, food waste reduction and food patrimony with a local supply for mass catering. Indeed, the mass catering, with ten thousand meals served every day is an important lever for this policy. To this end, in 2018, the government has fix to 20% the proportion of food products coming from organic agriculture, and 50% from other quality labels or at least from an agriculture that includes in its selling price the negative environmental externalities.

The participatory governance is the key of a sustainable system. The main idea is the direct role played by citizens in public decision and a better involvement about politic issues. Projets Alimentaires Territoriaux (PAT), corresponding to Territorial Food Projects, appears as example of governance tool for collectivity which begins to involve in a territorial food systems. But the PAT must be elaborated in a concerted way with all the agribusiness chain's actors in a territory, after an accurate surmise on economical (preservation of agricultural area and employment, relocation of value chain...), environmental (agroecological and organic production, fight against food waste...) and social

dimension (nutritional and food education, social links, food accessibility...), considering food needs, local food production capacities and food consumption.

Rastoin JL (2014) proposes to consider the *Système Alimentaire Territorialisé* (SAT), translated here as “territorialized food system”, as “a consistent combination of agribusiness supply chains localized in a geographic space limited to a regional dimension”. The SAT takes into account several characteristics, such as nutritional and sensitive quality (including gustative) of products, cultural content, production model intensive in employment, environmentally friendly and esthetic, organized in proximity network with circular economy able to reduce loss and waste, accessibility, convivial and commensal consumption, territorial anchorage and local development contribution, participative and fairness governance. The French partners used LSFs to describe this kind of system (SAT), that, generally, concerns exclusively areas of 1 to 5 million of inhabitants or cities under 500 000 inhabitants, but here will be considered also for smaller areas.

Italy

Italy, like the other countries, hasn't an official, univocal, definition of LSFs, but some of the most common typologies are defined at law level.

The most important is the national Law no. 205 of 27/12/2017 that defines “biodistricts or organic districts” as areas for which organic farmers, processors, consumer associations and local authorities have stipulated and signed protocols for the dissemination of organic farming methods and for the support and enhancement of sustainable management, including other activities than agriculture. However, in the consecutive national proposal of law no. 988 on organic agriculture matter, transmitted by the Chamber of Deputies to the Senate of the Italian Republic on 13 December 2018. In particular, the Art.13 reports a more updated definition of organic districts, defined as the local production systems, including inter-provincial or inter-regional production systems, with a strong agricultural vocation, in which are significant the cultivation, husbandry, typical processing and preparation of organic products in accordance with European, national and regional rules, with a considerable attention to their protection. Organic districts are established in order to:

- a) promote and encourage the sustainable use of natural and local resources in agricultural production processes, aimed at protecting ecosystems through support for design and innovation at the service of a circular economy;
- b) stimulate and support the territorial approach, also outside the administrative borders, promoting the cohesion and participation of all economic and social actors with the aim of pursuing a development attentive to the conservation of resources, using them in production processes in order to safeguard the environment, health and local diversity;
- c) simplify, for organic farmers operating in the district, the application of organic, environmental and territorial certification standards provided for by current legislation;
- d) to encourage the development, enhancement and promotion of the processes of preparation, processing and marketing of organic products;
- e) promote and support activities related to organic farming, such as the supply of organic food in public and collective catering, the direct sale of organic products, agritourism, rural tourism, actions aimed at the protection, enhancement and conservation of agricultural and natural biodiversity, reduction of the use of plastics and social agriculture;
- f) to promote the wider dissemination, at reasonable prices, of organically produced agricultural and agri-food products and aquaculture;
- g) promoting and implementing participatory research projects with farms and the transfer of innovation.

Furthermore, the National Law no. 221 of 28 December 2015 assigned to the Ministry of the Environment the task of adopting a national Action Plan on the "Sustainable Consumption and Production" (SCP). One of the priority sectors of the Plan is food that is the key sector for the Italian economy, but it has also the greatest impacting in terms of environment. The aim is to enhance the environmental value of some production chains and some local production systems relevant to our country (small and medium enterprises, districts and national production chains). This enhancement can take place through the application of various tools (Environmental Management Systems, LCA, EDP, production regulations, etc...) and through the application of territorial governance processes, in which local governments are also involved, giving rules and supporting the system.

Besides the definitions at law level, there is another LSFS definition, full shared by OEP that is: “the local and sustainable food system is a collaborative local network that integrates the key actors of the eco-sustainable food production, processing, distribution and consumption. The network, through a participatory governance, contribute to the food needs satisfaction of a community and enhance the environmental, economic and social health of a given territory. Waste management, with a circular economy approach, and energy saving are also significant”. The LSFS shall be an energy system that does not depend on other countries and regions, but shall be simply based on what a territory has, becoming self-sufficient.

Portugal

Also Portugal does not have a formal/official definition of Local and Sustainable Food Systems (LSFSs), not even of Local Food Systems (LFSs) or Local Food Chains (LFC). In fact, the so-called alternative food systems or “process of food relocalisation” (Ilbery & Kneafsey, 2000) are still a novelty when compared to the experiences located, for example, in the others European countries. This is all rooted in some historical, cultural and political characteristics of Portuguese society. On the one hand, the Portuguese “Mediterranean tradition of rurality”, where town and countryside have always been tightly intertwined in opposition with Continental and Northern European rurality traditions (Hoggart et al., 1995). On the other hand, the fascist-corporativist dictatorship, that ruled Portugal from 1926 to 1974, explain to a large extent either the country’s historically recent “de-peasantry” and “de-agriculturalization” processes, in comparison with Northern and Central EU countries (Rodrigo & Moreira, 2001). Finally, the adhesion to the large distribution food chains has contributed, together with the adoption of the CAP agricultural model, to the decline of the number of smaller, family labour farms, abandonment of agricultural areas, and consequent stagnation of many Portuguese rural economies and territories. These later trends and the above referred factors help us to understand, on the one hand, the late arrival of LFSs in Portugal and, on the other, illustrate and confirm that the “emergence of a re-embedded set of alternatives supply chains and networks is highly spatially diverse and is unfolding at different speeds across Europe” (Marsden et al., 1999: 301).

With the Report “Strategy for the Enhancement of Local Agricultural Production – GEVPAL” (“Estratégia de Valorização da Produção Agrícola Local – GEVPAL”), we have the most recent and comprehensive Portuguese technical report on LFS. One of the most important objective was the identification of a set of legal aspects that, in accordance with national legislation, constituted and constitute a severe constraint, or even brake, on the promotion and development of LFS. “Local food system” (“Sistema Alimentar Local (SAL)”) was defined as “a set of interlinked activities in which the production, processing, distribution and consumption of food products aiming to promote the sustainable use of a territory's environmental, economic, social and nutritional resources, defined as a community of localized interests, strengthening relations between the respective actors”. Furthermore, it reports also (ii) “Agrifood Short Chain” (“Circuito Curto Agroalimentar (CCA)”) definition that is considered “a method of marketing which is carried out either by direct sale from the producer to the consumer or by indirect sale, provided that there is no more than one intermediary. All accompanied by geographical proximity (municipality and neighbouring municipalities) and relations between producers and consumers” (Relatório do Grupo de Trabalho GEVPAL, 2012: 3-4), with direct selling that may take place on the farm, at the consumer's home, in itinerant sales, at markets, at fairs, at the producer's restaurant or shop.

The GEVPAL Report working group identified also weakness and benefits of LFS. Weaknesses related to: (i) the characteristics of territories, prone to ageing and losing population, with unfavorable Agro-ecological conditions (in specific territories) to agricultural practices with consequent decline of local agriculture; (ii) the productive and organizational constraints; and (iii) the commercial limitations, related to weak visibility and promotion, difficulties in responding to more sophisticated demands and markets and in adapting to general and sector-specific food legislation (Relatório do Grupo de Trabalho GEVPAL, 2012: 15). But there are also several benefits, such as (i) social benefits, by strengthening social cohesion in areas where low incomes from agricultural activity encourage emigration; providing consumers with fresh and healthy products, with traceability; (ii) cultural benefits, by diversifying supply and preserving traditional systems of plant and animal production; (iii) economic benefits, by adding value to local production; (iv) environmental benefits, by enabling less polluting agriculture (less intensive production systems) and resource conservation; reducing packaging, transport and refrigeration needs and thus also helping to reduce fossil fuel use and greenhouse gas emissions“ (Relatório do Grupo de Trabalho GEVPAL, 2012: 16-17).

Several positive impacts of LFSs are also referred to other documents and by other authors. In particular, they highlighted the producers and consumers benefits obtained the development of closer relations and, consequently, trust. In addition, purchasing on local chain foods, consumers are buying safe products of good quality (freshness, taste and nutritional value), have access to information on the origin of these products and their production methods and have access to a range of products more diversified and with local varieties (Baptista et al., 2013; Chaves, 2016; Ilhéu, 2017).

A contribution to LSFs comes from also the Regulation (EU) No. 1305/2013 of the European Parliament and of the Council of 17 December 2013 on the application of the principles of subsidiarity and proportionality support for rural development by the European Fund Agricultural Rural Development (EAFRD). It lays down that support for rural development in the period of the 2014-2020 focuses on six priorities, including the improvement in the competitiveness of all types of agriculture, to ensure the viability of agricultural holdings, as well as promoting the organization of food chains, in particular through the development of local markets and short supply chains” (Decreto-Lei n° 85/2015 de 21 de maio, Diário da República, 1.ª série — N.º 98 — 21 de maio de 2015).

In short, the two legal frameworks, analyzed above, designed specifically for the implementation of the LFS in the context of the implementation of the Portuguese 2014-2020 Rural Development program, do not define the meaning of the used terms “direct supply by the primary producer to the final consumer”, “direct supply of products”, “local retail trade” (Portaria n° 74/2014), “food chains”, “local markets and short supply chains”, “direct sales and short agri-food chains”, “local producers markets” (Decreto-Lei n° 85/2015). These omissions reflect the very limited attention paid to the LFSs by Portuguese policy-makers, recalling the lack of unanimity on the definition of the scale of proximity between producer and consumer in the context of the LSFs debate.

Slovenia

In Slovenia, there is no uniform definition of LSFS meaning, but the following expressions are used as synonyms for local and sustainable food systems:

- local supply of food,
- local food supply chains,



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- local sustainable food supply,
- local sustainable food self-sufficiency,
- locally-grown food supply under the short supply chain system,
- short local food supply chains,
- local and regional self-sufficiency of food.

Ministry of Agriculture, Forestry and Food (MAFF) (2018) defines local and sustainable supply of food, which can be understood as a kindred concept to local and sustainable food systems, as the "local production, processing and distribution of sustainably produced food, which is physically accessible and affordable to local population and consumed in local markets".

This topic was debated in Slovenian policy. The Resolution on the National Programme of Food and Nutrition Policy 2005-2010 highlights the importance of production, processing and consumption at the local level, as well as the Resolution on strategic guidelines for the development of the Slovenian agriculture and food technology by 2020 defines the local and sustainable supply as the third pillar of ensuring safe and healthy nutrition (MAFF, 2010). In particular, in the last one, the vision of the Resolution focuses on multifunctional sustainable agriculture, where sustainability means a balance between the economy, society and the environment. It includes sustainable water, soil, air and biodiversity management, ensuring an adequate level of income for food growers and understanding their importance, linking and strengthening supply chains, preserving cultivated and densely populated rural areas, technological modernization and generational renewal, promoting complementary activities and green jobs, and research support for the development of agriculture and rural areas (MAFF, 2019). The priority agenda includes, among others, a more efficient marketing approach to organizing agriculture, the strengthening of agro-food chains, and increased visibility of domestic products (MAFF, 2010, 18).

Furthermore, food systems are also the subject of agroecology studies. Gliessman (2007) and Francis et al. (2008) highlight an integrated approach to food systems by linking the production, processing and consumption of food. The components and principles of a sustainable food system, which were established through Slovenian agroecological research, are presented below (Tab.1)

Table 2: List of components and principles of a sustainable food system with Slovenian examples
(Source: Vovk Korže, 2017; Davidovič, 2018).

Component of the FS	Principle of the FS	Example from Slovenia
Production	Provision of nutrients	Green, organic, animal manures, crop rotation, etc.
	Protection of agro-biodiversity	(Bio)diversity, native species, perennials, seed production, animal welfare, etc.
	Conservation of resources	Shallow ploughing, no ploughing, green, organic, soil, artificial mulch, composting, biochar, drip irrigation, terracing, water-retaining trenches, fallow, water collection, alternative production systems, etc.
	Pest and disaster control	Biological control, allelopathy, organic sprays, attraction-repulsion systems, ash, high planting density, greenhouses, etc.
	Increase productivity	Mixed, row planting, mixed systems, adapting to the surface, planting in beds, information technology, etc.
Processing	Processing of crops	Drying, fermentation, gastronomy, commercial foodstuffs, alternative medicine, etc.
	Processing of raw materials	Craftsmanship, civil engineering, etc.
	Energy conversion	Sun, wind, water, biomass, geothermal heat, etc.
Consumption	Shaping landscape recognisability	Brand, quality schemes, extended networks, associations and movements, etc.
	Implementation of short supply chains	Homestead, delivery, public spaces, stores (shops), farm partnership, public procurement, online sales, etc.
	Performing complementary activities	Developing entrepreneurship for crop processing, craftsmanship, energy industry, tourism, education, etc.
	Waste reduction	Biodegradable packaging, fuel consumption, waste water purification, handicraft, etc.
Ethics	Nature conservation	Conservation of wetlands, natural watercourses, stagnant waters, forest areas and hedges; plant growing, reusing materials, adapting to the restrictions of protected areas, etc.
	Social responsibility	Care for the homeless, the elderly, the less wealthy through more affordable prices, donations of surplus goods, charity, equality of age and gender groups, connecting stakeholders, counselling and education, etc.

Table 1:

List of components and principles of a sustainable food system with Slovenian examples (Source: Vovk Korže, 2017; Davidovič, 2018).

In conclusion, local and sustainable food systems include co-natural production, safe processing, fair food trade and community involvement. The entire LSFS evolves dependency on local geography (natural and social resources), traditions (knowledge and skills developed in the long-term and repeatedly validated), available technologies (mechanization, robotization, sensors, remote sensing), and ethics (environmental and social responsibility), which represent the framework within which the individual components of LSFS are developed (Fig.1 from national report) (Vovk Korže, 2017; Vovk Korže and Yao, 2018; Davidovič, 2018).

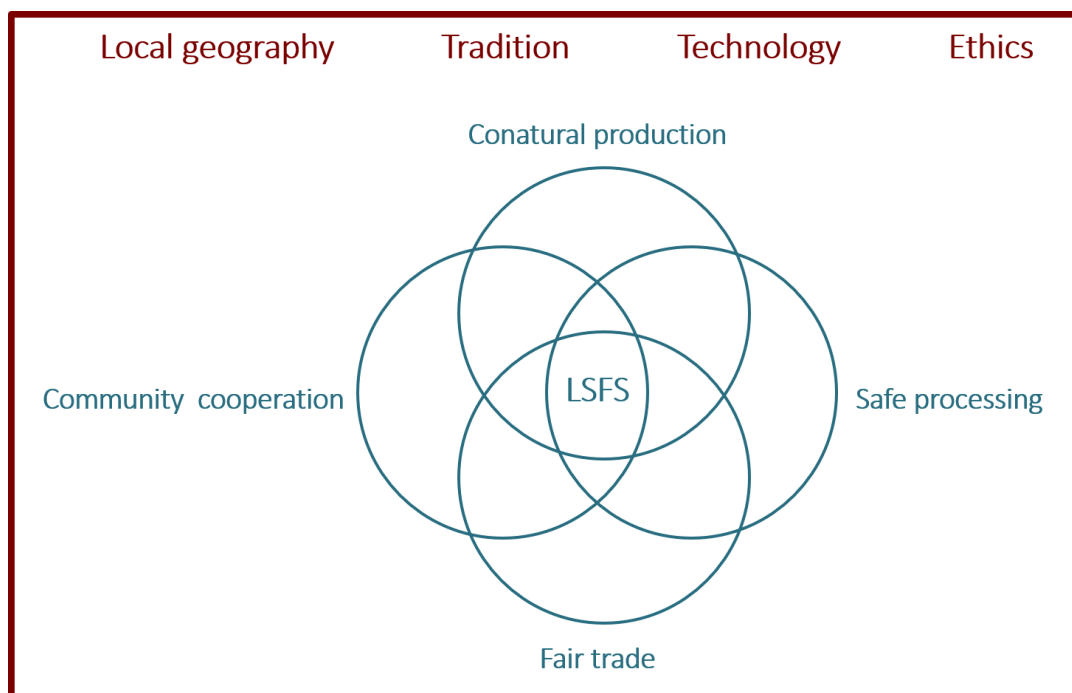


Figure 3: Diagram of a local and sustainable food system.

3. LSFS TYPOLOGY

For the identification of the different types of LSFSs we have used a conceptual framework based on the four-step methodological process to operationalize sustainability within a food system according to Allen and Prosperi (2016). In addition, the sustainability has been taken into account.

3.1 **TYPE 1 – CSA (Community Supported Agriculture)**

Bringing together citizens, small farmers, consumers, activists and concerned political actors through an alternative economic approach called Local Solidarity-based Partnerships. It is a way to maintain and develop **small-scale family farming** and to achieve **local food sovereignty** for each region and community; furthermore, it is **a solution to the problems associated with global intensive agricultural production and distribution**.

CSA experiences are conceived as groups of farmers and citizens–consumers that cooperate in a common project of food production, respecting the organic farming/agroecological principles and the social justice. Normally, consumers share the economic risks with the farmers and give them financial sustenance by paying in advance. In some cases, consumers are not only buyers but they contribute directly by working on farm activities.

The International network for community Supported Agriculture is URGENCI (www.urgenci.net).

3.1.1 **Boundaries of the system**

3.1.1.1 Area: village, city, megalopolis

3.1.1.2 Scale: small

3.1.2 Essential drivers of change: the social categories of people initiating the experiences normally are citizens, small farmers, activists, linked in formal (with a contract) or informal way, in community, associative or cooperative organization, with a participatory governance, and with the common objective to resolve issues such as the global contamination, the paradigm shift, etc.

3.1.3 Essential food systems' outcomes: change of the food patterns, proximity between producers and consumers, with a low impact (few persons) but with a strong involvement of the people in the organization.

3.1.4 Essential interactions between drivers/outcomes: through direct sales, creating close interactions between drivers/outcomes.

3.1.5 Sustainability and resilience of the system: the aims of CSA are sharing of benefits and risks between farmers and the societies that they feed. The main characteristics of the social cohesion and of the food sovereignty, in combination with direct consumer control over the healthy production methods (commonly organic) of the food that they eat, make highly sustainable and resilient these systems. Members pay fixed monthly/seasonal membership fees, and they are able to influence (quality&quantity) the production and get a share (depending on need/contract) the harvest. Products are not sold, but either to be collected from the farm or

from picking points.

3.1.6 Examples of LSFS initiatives corresponding to first type in the 5 partners countries

AUSTRIA

GEMEINSAM LANDWIRTSCHAFTEN OCHSENHERZ – CSA realized in Gänserndorf bei Wien, Nieder- österreich (<http://www.ochsenherz.at>). Gela ('GEmeinsam LAndwirtschaften') is the first Community-Supported Agriculture project in Austria. In this project, consumers can sign up in advance for an annual or a seasonal supply of organic vegetables, grown in local farm. The scheme aims to provide the producers security of income over the year thereby allowing them to optimize their farming practices according to the principles of biodynamic farming. In exchange, consumers enjoy a weekly supply of organic, locally grown vegetables and seeds of good quality, purchased directly from the farmers. The project is co-managed by a group of active consumers and the farmers. The main idea of CSA is to re- interpret the provision of food by establishing strong partnerships within the food system. Producers and consumers jointly – framed by a contract – organise (as members of the respective farm) the production and distribution of the food - the role in the food system changes from producers and consumers to members.

Members are able to influence (quality&quantity) the production and get a share (depending on need/contract) of harvest.

Products are not sold, but either to be collected from the farm or from picking points.

Motivation: to contribute to a life in accordance to nature and to human needs and pleasures with solidarity as the main value instead of following rules of market. Organic principles as a basis for production.

FRANCE

LES INCROYABLES COMESTIBLES (in English the incredible edible) is a global social innovation movement launched in 2008 by a citizens group from Todmorden (England). The objective is to build awareness about food issues through gardening and pedagogy. The concept is to produce free food to share with a research of self-sufficiency of local, healthy, sustainable and active food. From easy and accessible actions, the Incredible Edible aims to promote a participatory urban agriculture inviting all the citizens to grow up vegetables wherever possible and to share the harvest. In France, the movement is present in hundreds of cities and villages (<http://lesincroyablescomestibles.fr/annuaire-ic-france/>).

ITALY

VALLE DELL'IRNO COMMUNITY FOR SUSTAINABLE AGRICULTURAL PRODUCTION –COMMUNITY OF FOOD

The Communiy of Food "Valle dell'Irno" is a group of people starting from the core principle that everyone has a right to good, clean and fair food and. The community is formed for the specific purpose to protect and promote a local food and works in the specific area around Salerno, in dialogue with the rest of the local and regional network.

[EducLocalFOOD]

The network unites food producers, fishers, breeders, chefs, academics, young people, NGOs and representatives of local community who are working to establish a system of good, clean and fair food from the grassroots level.



Figure 2: The Community of Food “Valle dell’Irno”

In Italy there are 100 Community of Food (Slow Food Community) and 10 of them are in Campania Region (November 2019).

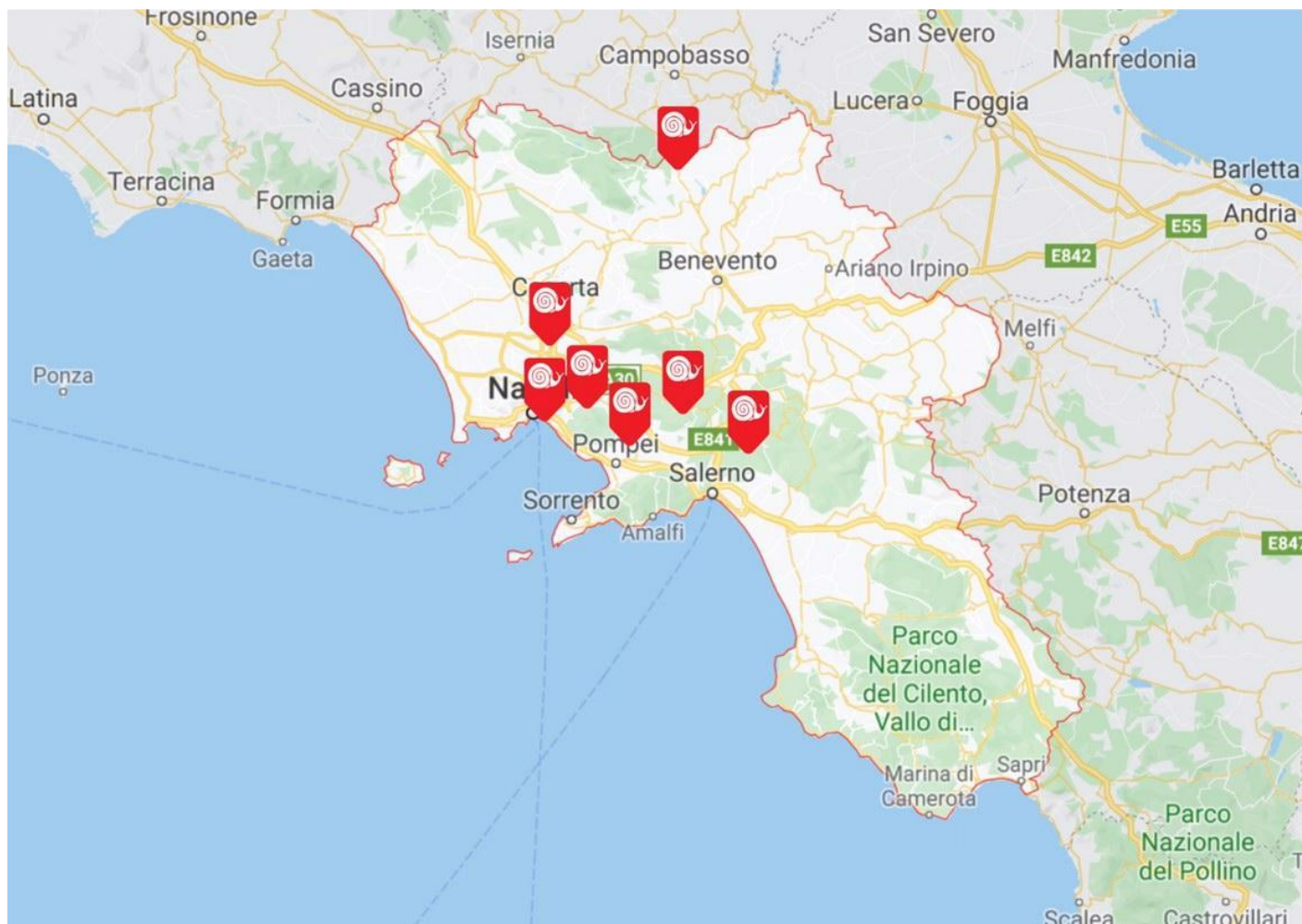


Figure 3.1: Community of Food in Campania Region (October 2019)



Figure 3.2: Community of Food “Orto Vesuviano”

ANCIENT CEREAL AND VEGETABLE VARIETY GROWERS OF CILIENTO AND VALLO DI DIANO - COMMUNITY OF FOOD

The community is made up of farmers and pastors from the area around the National Park of the Cilento and the Vallo di Diano (Salerno). They produce small quantities of antique varieties of grains, vegetables and fruits. The producers answer to the permanent Study Center of the Museum of Antique Cultivations on Vegetable Biodiversity. The products are high altitude wheat, rye and legumes, among which are the bean varieties pettilanculo, sanghellatto, vignarulo, turchisco and the ancient lucan black chickpea, while the lentils boast a particular variety known as meccole and grass peas. The antique varieties of fruit are also numerous: apples, pears, figs, peaches and plums. Each variety is monitored and redistributed among the producers to encourage its diffusion. The producers are in an organizing phase and soon will create either a co-op or a consortium; the aim is to create a stable market by exploiting the small seasonal markets that are already organized by the Museum.

GROWERS OF CAROSELLA WHEAT FROM PRUNO – COMMUNITY OF FOOD

The community is composed of a dozen families who cultivate the land mainly to support themselves and also practice semi-nomadic pastoral farming. An ancient seed of local wheat, Carusedda di Pruno, has been recovered in the valley and plans have been made to revive and

promote the grain together with the culture associated with its cultivation. There are plans to construct a traditional stone-grinding mill to complete a local supply chain. In addition, another five seeds of age-old local grains are being recovered. A shed will be built for donkeys using traditional local materials (wood, stone, straw bales, cocciopesto flooring) to shelter five animals, which will be used for trekking, milk, and onotherapy (pet therapy) for the disabled. The Production Area is the Forest area of Pruno, Province of Salerno (Campania, Italy)

ARVAIA, located in Bologna, is currently the most important experience of CSA in Italy (<http://www.arvaia.it>). It is a cooperative composed by citizens and organic farmers, cultivating public land rented from the Municipality. Its main purpose is to cultivate the land through collective management, mainly for the food consumption by members or to support the activities of the cooperative. The cooperative manages a market and a small shop. The members plan together the annual production activities and, based on the budget, finance them in advance.

The members can visit and see fields and cultivations and are asked to contribute to the work during the year.

PORTUGAL

In Portugal the experiences of CSA are not well known, but there is **AMAP** - *Associação pela Manutenção da Agricultura de Proximidade* (<https://amap.movingcause.org>), that aims to promote direct partnerships, based on the human relationship between a group of consumers and one or more producers, where the risks, responsibilities and rewards inherent in agricultural production are shared, through the establishment of a long-term link.

In Portugal, a great example of LSFS initiative is the organization of the **Herdade do Freixo do Meio**. This organization is located in Alentejo region, it chose the agroecology as ethic of stewardship, recovering the Medieval Agroecosystem Montado, the main traditional Agroforestry system of Portugal, characterized by woodland in low density associated with agricultural or pastoral activities. Such agroforestry model was enriched by the modern scientific knowledges, using permacultura strategies and adopting a food supremacy vision.

The organization of the company is based on “Cooperative of the Consumers”, that become a space of cooperation, inclusion, personal development, work and community building, improving daily the human-resources relationship, making efficient the processes and the use of the natural resources (soil, water, biodiversity...), reducing the wastes and the ecological footprint.

In 500 hectares, a team of around 30 co-producers and collaborators work together to obtain over 200 products from organic agriculture and farm animals, transformed in the farm studios and distributed through a CSA plan. According to this model, producers and co-producers (consumers) assemble a food community, making them really responsible, sharing the risks for all the processes involved in the food production cycle, including nutrition, health, social, environmental, cultural, economic and educational aspects. Voluntary agreements are established for periods of six months, with weekly or bi-weekly deliveries based on food "percentage" (an average quantity of product, which can be higher or lower depending on the

production), such as vegetables, fruit, bread, eggs, milk, meat, soups, for which a fixed amount is agreed. This creates efficiency in the food chain that does not allow "waste" and also it gives to the co-producers/consumers a role in the ecosystem (according to the agroecology concept), in addition to creating community personal relationships. The co-producers/consumers benefit from fresh and uncontaminated food, they pay a fair price for certified organic food, they access agroecology, ecosystem agriculture, they support and facilitate local agriculture, the rural world and the local economy.

SLOVENIA

Also in Slovenia the experience of CSA isn't well known, but there is the interesting case of the **DOBRINA COOPERATIVE** (<http://www.zadruga-dobrina.si>) which has many points in common with the CSA. Dobrina is a cooperative for the development of sustainable local food supply, in operation since 2011. Some of the main objectives of the cooperative are to promote the development of small farms that ensure fair payment for growers, linking rural and urban areas, promoting organic food production and processing, and preserving the natural and cultural heritage in the field of agriculture. Growers and processors or owners of small traditional farms from Slovenske gorice created the cooperative, operating as a social enterprise since 2015. At present, more than 90 members are involved in the cooperative. Their offer includes fresh, seasonal and local foods that are accessible to people living in rural and urban areas. They also cater for several public procurement mass catering food facilities such as kindergartens, primary schools and retirement homes. In addition to seasonal fruits and vegetables, Dobrina's general offer includes juices, syrups, teas, grain coffee, wines, spirits, oils, vinegars, tinctures, spices, pickled foods, marmalades, pasta, bread, biscuits, flour, porridge, flakes, eggs, meat products, sauces, soaps and ointments, as well as other processed products (Cooperative Dobrina, 2019).

COOPERATIVE DAMES

Dame is a cooperative or social enterprise for the development of sustainable tourism and catering. They are located in the heart of the city, and their suppliers are from the surrounding countryside, which means that *Dame* uses mostly locally produced fruit and vegetables. Their traditional recipes are a means of preserving cultural heritage, which is, however, complemented with original modern-day twists. Their dishes are prepared in a safe and healthy way with less added salt, sugar, fat and white flour (Dame, 2019).

What sets them apart from other restaurants in Slovenia is that they offer mostly local and seasonal fresh organic fruit and vegetables and dishes prepared from them (they are the first restaurant in Maribor with certified ecological dishes). They also offer a greater variety of meatless dishes for vegans and vegetarians. *Dame* distinguishes between permanent menus and seasonal specials. Their dishes are suitable for serving at social events, as the offer includes catering, cakes, biscuits and pies. An interesting feature are their so-called 'responsible business gifts' – prepared gift sets that include local syrups, spreads, sauces and spices (Dame, 2019).

3.2 **TYPE 2 – SECTORAL INITIATIVES**

3.2.1 **Boundaries of the system**

3.2.1.1 Area: village, city, megalopolis

3.2.1.2 Scale: small

3.2.2 Essential drivers of change: the people initiating the experience normally are professional (farmers, food processors, distributors, etc.), linked in formal way with a contract (in cooperative or association), with a participatory governance and with the common objective to solve issues, such as the industrial monopoly, or to better share the added value.

3.2.3 Essential food systems' outcomes: supply chains structuring, proximity between producers and consumers, with a low impact (few persons) and a medium involvement of the people in the organization.

3.2.4 Essential interactions between drivers/outcomes: direct and indirect sales and proximity circuit

3.2.5 Sustainability and resilience of the system: the aim of THE SECTORIAL INITIATIVES is the creation of LSFS based on the short food chain.

3.2.6 **Examples of LSFS initiatives corresponding to second type in the 5 partners countries**

FRANCE

LE COURT-CIRCUIT is an initiative developed in 2013 by 3 thirty-year-men and takes place in the north of France. It aims to expand the offer of local and direct sales of good quality products and facilitate the link between consumers and producers. The innovation of Le court-circuit is the web platform. Concretely, the platform's working is simple and implies 4 actors: the producers, the administrator of the collection point, the platform management and the consumer. On the one hand, the producer adds his products and set the selling price on the web platform, then he chooses the collection points where He will leave it. On the other hand, the consumer chooses his command on the web platform, he pays and goes to pick it up to his chosen collection point. The difference with an AMAP is the possibility for the consumer to choose exactly what he wants in his command. In addition, there is no subscription, so the consumers can command when he needs and when he wants. The administrator of the collection point organizes the commands received through the platform. He keeps 5.17 of the final selling price. Today, Le court-circuit numbers 25 collection points. From its side, the platform keeps 11.5% of the selling price.

ITALY

The Slow Food's Earth Markets are farmers' markets developed collectively according to Slow Food guidelines.

Only local and seasonal products are sold, presented only by the farmers, at fair prices, for those who buy and those who produce.

An Earth Market is born when a conscious community - producers, public bodies, citizens, Slow Food convivia and other interested parties such as restaurateurs - creates a new space for facilitate the meeting between consumers and food producers.

A management committee, in which all these subjects are represented, is responsible for selecting producers, promoting the market and respecting its rules. The committee also manages the functioning of the market with a particular attention to the environment: committing itself to producing as little waste as possible, to disposing of it correctly, with attention to energy saving and the use of consumables biodegradable.



Figure 4: “Mercati della Terra” logo

PORTUGAL

PROVE - PROmover e Vender -Promote and Sell- (<http://www.prove.com.pt/www/english.T9.php>) is the first Portuguese representative direct/proximity selling experience, through baskets of fresh vegetables and fruits. This experience started in 2004 under the Community Initiative EQUAL, and was led by the Local Action Group (LAG) ADREPES. Implemented under the Leader programme and with rural development objectives in mind, the experience of PROVE focused on family farmers who, by cultivating small farms, produced small quantities and did not have the capacity to compete on agricultural markets. In this way, through PROVE family farming was socially revalued and rural economies could register some improvements, since the revenues of farmers originated from PROVE were reinvested locally. From 2012 to 2017, the number of producer-consumer hubs scattered across mainland Portugal and increased from 21 to 117, the number of promoters (Local Action Groups) increased from 8 to 17, distributed in 15 districts against the previous 12. In terms of incidence, the districts with the highest number of producer-consumer hubs are Lisboa, Porto, Setúbal and Aveiro, with the districts with the highest number of producers being Porto, Braga and Setúbal. With regard to the universe of consumers, there are currently 4,875 active consumers (Lisboa, Setúbal and Aveiro are the districts with the highest number of active consumers; Viseu, Beja, Viana do Castelo and Santarém the districts with the lowest number of consumers); and 8,470 pending consumers. Since the beginning of PROVE, the total number of consumers is 25,757. Currently, in some PROVE hubs baskets are organic and certified. For instance in the hub located in Loures all the producers are certified organic and one of them also adopts the principles of permaculture. Also the experience of the **cooperative Fruta Feia** (<https://frutafeia.pt>) is interesting.

3.3 TYPE 3 – TERRITORIALIZED AREA (ECO-REGION)

The Eco-Regions or Bio-districts are territories where farmers, consumers, public authorities and other local actors realize an agreement aiming at the sustainable management of local resources, based on organic farming and agro-ecology.

The participatory and inclusive community of a bio-district (eco-region), with all the local actors involved, act on the territory with a virtuous governance that decide from citizen's level to shift towards a real local, sustainable and healthy food system (LSHFSS).

The 5 components of a bio-district (agriculture, environment, economy, culture, society) are interrelated in a complex system, producing the innovative outcome of a virtuous circle, where the 5 dimensions lead towards a local, sustainable and healthy food system.

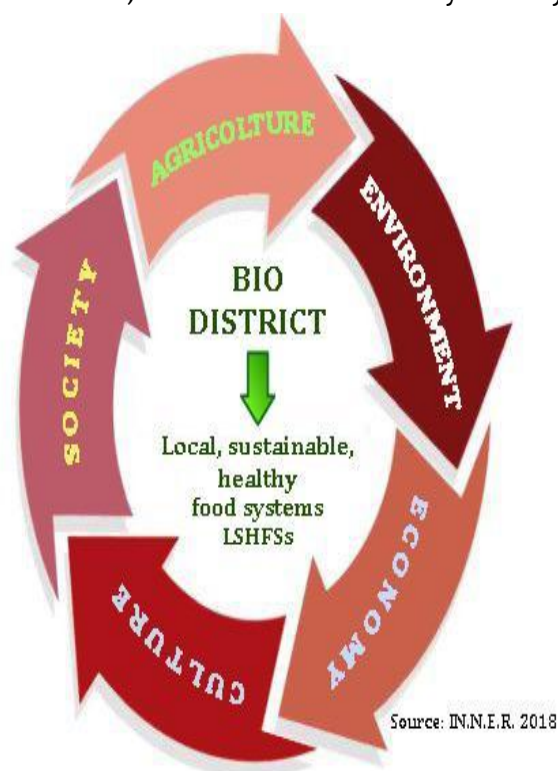


Figure 5: Virtuous Circle

The bio-district approach, aiming to stimulate dialogue between the local players of the food system, the consumers, the local public administrators, the operators of other economic sectors (i.e. tourism), working together in building a better quality of sustainable development, contributes to the major EU global challenge of ensuring food and nutrition security (FNS). It also aims to respond to the international agreements on climate commitments and to the current EU political priorities of growth, secure and competitive economy, a more democratic Union and the circular economy. It is also consistent with the orientations of the UN Agenda for 2030 approved by the General Assembly on September 25th, 2015.

3.3.1 Boundaries of the system

3.3.1.1 Area: rural area, villages, cities

3.3.1.2 Scale: middle

3.3.2 Essential drivers of change: the people initiating the experience normally are farmers, citizens, municipalities, other economic actors of the territories (i.e. touristic operators) linked in formal way with a contract (public/private no-profit association), with a participatory governance, and with the common objective of creating a local, sustainable, healthy food system.

3.3.3 Essential food systems' outcomes: change of food pattern, Agroecological transition, proximity between producers and consumers, with a medium/big impact and a strong involvement of the people in the organization.

3.3.4 Essential interactions between drivers/outcomes: through direct sales, close interactions are created between drivers/outcomes.

3.3.5 Sustainability and resilience of the system: The main characteristics of the social cohesion and of the food sovereignty, in combination with the producers/consumers/public administrators agreement make these systems highly sustainable and resilient.

3.3.6 Examples of LSFS initiatives corresponding to third type in the 5 partners countries

AUSTRIA

BIOREGION MÜHLVIERTEL represents a territorial approach towards regional development based on a strong organic agriculture sector. The Mühlviertel region is located in the province of Upper Austria (yellow) and comprises the four districts (above the blue line in Graphic 4 marking the river Danube) of Freistadt, Perg, Rohrbach and Urfahr-Umgebung (covering 122 municipalities). On 3090 km² the area inhabits 270.000 people with a density of 92 people/km². The agriculturally used area is 2580km², of which again around one quarter gets cultivated organically. Also the proportion of organic farms (≈26%) is higher than the national average of around 17% (BMLFUW, 2014).

The development process of setting up the Bioregion began in 2010. Overall around 1200 people were contributing to the process of establishing the Bioregion. During numerous workshops and events a long-term development concept was elaborated together with stakeholders. Currently 7 Austrian Leader-regions and the Euregio "Bayrischer-Wald/Böhmerwald" are involved.

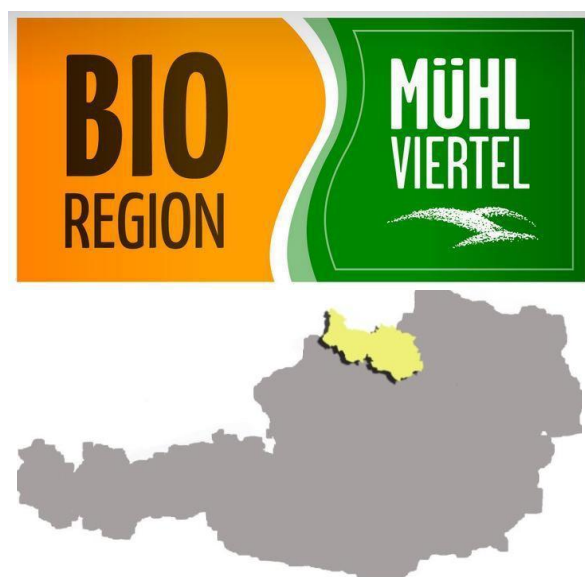


Figure 6: Bioregion MÜHLVIERTEL

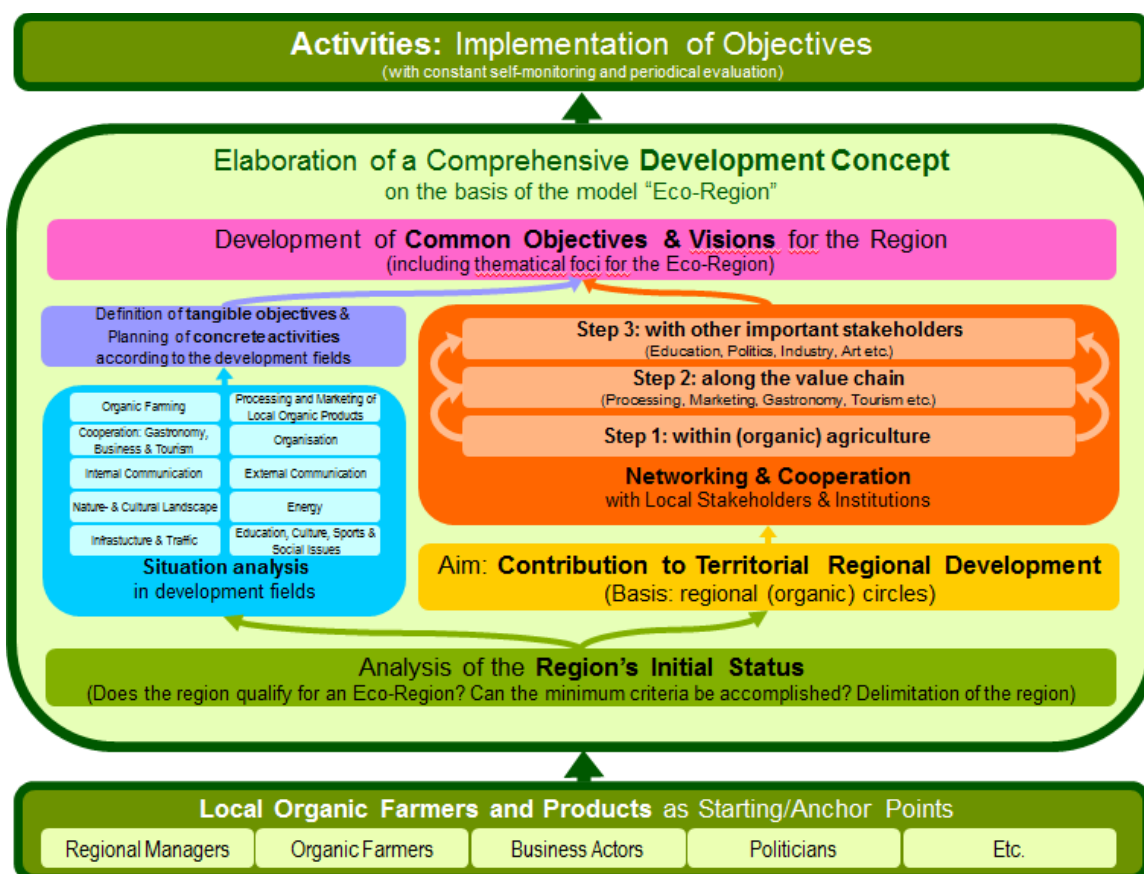


Figure 7: Exemplary development steps towards a 'Bioregion' (Kirchengast, Schermer; 2008)

FRANCE

BIOVALLÉE. The Drôme valley is the most developed area in France with respect to organic agriculture. In this small region (2200 km², 54000 inhabitants), organic production represents 30% of agricultural land, high above the national average of 3%. A public project was launched in 2009 by the 102 municipalities of the valley: the Biovallée project (www.biovallee.fr). The Biovallée project aims at making the Drôme valley a pilot territory in terms of sustainable development. Therefore, it includes operational objectives for 2020 in a diversity of sectors, among which energy (coverage of 100% of household consumption with renewable energies), waste (a 50% reduction), land use (no more destruction of arable land), housing (building 5 eco-neighbourhoods), education and training (developing high-level training programs on sustainable development).



Figure 8: BioVallée logo

VILLE EN TRANSITION – UNGERSHEIM

The commune is shown as the example of ecological transition in France. The food self-sufficiency project is based on the structuring of a local supply chain from production to

consumption called “de la graine à l’assiette” (from the seed to the plate). To reach this objective, difference actions have been launched:

1. 8-hectare-farm has been implemented, employing about thirty organic vegetable growers and called Jardin du trèfle rouge. This farm works with another farm in a neighbor commune to supply 400 vegetables baskets in an AMAP, a farm market and 8 school canteens among which two are in Ungersheim. The 2 school canteens serve 100% organic food since 2009. In addition, every week the school canteens propose a vegetarian meal to the children.
2. a cannery has been created in order to process the garden surplus. There are currently several projects: one for putting vegetables under vacuum, a bulk selling grocery and a malthouse-brassery.
3. a pedagogical area will be built to allow meeting and to share knowledge and know how between commuters.

MEAD - MOUANS SARTOUX

The MEAD takes place in the 4-hectare-farm of Haute-Combe in the south east of France. It is managed by the municipality council to respond to the local needs and to use the food project experience as an example for French and European collectivities.

The MEAD’s goals are to structure food self-sufficiency on the territory and to contribute to reflexions and actions around food policies. Its actions are organized on 5 axes.

To cultivate

In 2012, the city has tripled areas dedicated to agricultural activity. In addition, several areas has been identified as ready for establishment of new farmers to reinforce local and organic agriculture and structuring local supply chain.

To process and preserve food

A collective laboratory of food conservation and processing has been created for the farm of Haute-Combe. This is opened to local farmers in order to support their economical viability. The main role is to store seasonal fresh food surplus in order to supply all year long the mass catering.

To educate

The school canteens serve 100% of organic food since 2012, children sort out waste which has been reduced from 150 grams to 32 grams in 4 years.

To research

The innovative aspect of the food project in Mouans-Sartoux is the support for different research programs, particularly documents about the food project.

To share

Hence, for helping the development of such food project, the MEAD tries to give visibility to the food project taking place in Mouans-Sartoux. The results are disseminated thanks to social network and methodological tools produced by the research programs.

SELF SUFFICIENCY IN GRANDE-SYNTHE (Cerdd, 2014)

Grande-Synthe, in the north of France faces a very important unemployment. In the past, it was a very industrial area thanks to the deep sea port that the city shares with Dunkerque. It one of the first city in France which has begun to enhance biodiversity in the city to offer better quality of life based on green area to people (127 square meters of green area per habitant against 30 square meters in average in France.) The city aims to reinforce the self sufficiency in food and considers all non-urbanized area as area of nature and food for everybody.

A People's university has been implemented to accompany projects with and for the commuters in which people can exchange seeds, have information on fruit trees planted inside the city (500 fruit trees) and a map to know where find it and collect fruits, 600 familial gardens at the bottom of buildings. Also, pedagogical workshops are organized to train to gardening in order to promote relationship and autonomy of the population.

In addition, schools canteens are already 100% supplied with organic food and aim 100% local organic food. To reach this objective, the city council works on several projects:

- a urban farm is creating to grow organic vegetables to supply school canteens and market,
- educative workshop for students and general public
- training and supporting structure on agroecology activities in urban area

ITALY

CILENTO BIO-DISTRICT (www.biodistretto.it) was constituted in 2004 and represents the first eco-region in Italy (up to now there are 32 bio-districts, present in all the 20 Italian regions).

The Cilento Bio-district has founded in 2004, and it is an active member of I.N.N.E.R. network, with which promoted the dissemination of the Bio-district (or Eco-Region) model in other countries: i.e. France, Austria, Switzerland, Portugal, Spain and other territories of Mediterranean Basin.



Figure 9: BIO-distretto Cilento logo

In 2015 representatives of the Cilento Bio-district attended the Universal Exposition Milan 2015, hosting the International Pavilion of the Kip International School, promoting "Attractive territories for the Sustainable Development".

Since 2017, Cilento Bio-district is recognized as a best practice within the FAO Agroecology Knowledge Hub (<http://www.fao.org/agroecology/database/detail/en/c/1027958/>).

The objectives of the Cilento bio-district can be grouped in three main areas.

- **Economic:** making agriculture more remunerative by applying a system approach at the field level and create new market opportunity for producers. At farm level practices, using inputs more efficiently are promoted, while inputs (when needed) are purchased collectively in order to decrease costs. At market level, the bio-districts aim at building up a short supply chain by stimulating local market, public procurement and eco-tourism. Group organic certification schemes are promoted to reduce costs and enhance the supervision within the bio-district.
- **Environmental:** making agriculture more sustainable by applying practices able to reduce the environmental impact of farming.
- **Social:** favoring rural employment and enhancing social capital through facilitating land access to young generations, enhancing aggregations and knowledge exchange between different stakeholders and recognizing the role of farmers as the real ecosystem stewards.

Cilento Bio-district achieves these objectives by the following:

- **Promoting the short value chain** - it's one of the strengths of the bio-district. The agricultural production and related processed products are sold directly by producers or through farmers associations. Direct marketing includes on farm sales, farmer's markets, purchase groups and the e-commerce platform and count for 75% of the bio-district economic flow. The public procurement, restaurants and tourists facilities (HO.RE.CA) represent 15% of the sales while the traditional distribution –which includes local, regional and national organic shops and supermarkets- only accounts for 5%. Export mainly concerns wine and olive oil and is a minor market channel with 5% of the sales. Overall 40% of the production is consumed locally while the tourist sector absorbs 55% of the production. In this short supply chain the different associations involved in the bio-district provide an essential contribution by mediating

economic relationships, provide assistance and technical service to farmers and communicate the importance of sustainable production and local purchase which a single farm would not be able to coordinate. Different types of consumers are valorised and actively participate in the continuous improvement of products, services and production processes.

- **Providing technical support to the farmers** for the transition to organic/agro-ecology practices, able to reduce the environmental impact of farming on natural resources, greenhouse gas (GHG) emissions and build up a diversified landscape. Also well adapted local varieties are enhanced in order to save and make use of the local biodiversity.

- **Encouraging the inclusive approach of the bio-district.**

Firstly: events, workshops, participations in farmer's associations and meetings represent opportunities to strengthen social relationships between the actors of the bio-districts. Those occasions have played a crucial role in linking communities from the coast with those living in the inlands, which in turn also attracted tourists to new places.

Secondly: farmers are recognized to be real ecosystem managers and food provider's thereby enhancing the social role of farmers, their identity and the need to support them through consumption of local food and public procurement.

Thirdly: the rural communities are now much more empowered in dealing the local authorities and institutions due to the series of consultations and participatory landscape planning approach.

Fourthly: the different associations, cooperatives and the involvement of academia represents an important platform for knowledge sharing and consultations for farmers. An *Innovation Service Center* has been recently established in collaboration with several Farmer's associations, the Agricultural Research Centre and University of Salerno, to provide technical assistance, support business management, monitor and enhance the performances of the bio-district.

- **Promoting the multilevel territorial governance**, it allows that political actors (municipalities, regional), other public Institutions (National Parks, Local Action Groups, etc.) and civil society (associations) to transform the area's heritage into resources for innovation and development of rural areas based on organic/agro-ecology model. It leads to a continuous improvement of the agro-food production system as demonstrated by the recent launch of the document "*Building a shared territorial development strategy*" promoted by IN.N.E.R. and Italian Ministry of Agriculture and Forestry and the Agreement "Charter of Padula on the Agro-ecology in the protected areas" signed by OEP, Legambiente and IN.N.E.R. to promote agroecology inside the Italian Parks.
- **Developing the Tool kit for the bio-district implementation and evaluation.** The kit developed by IN.N.E.R. (the International Network of Bio-districts/Eco-regions) includes a disciplinary (with the directions for the license to use the brand "Eco-Region" by the different categories of users), examples of Constitution act and Statute, guidelines for the elaboration of the strategic plan, resolution schemes and a specific analytical framework for the classification and performance monitoring of the bio-districts.

PORTUGAL

The **BIO-REGIÃO OF S. PEDRO DO SUL** (<http://www.ecoregion.info/sao-pedro-do-sul/>) is certainly the one that, in terms of kind of association, organization and promoted activities, is closest to the original model developed in 2004 in Cilento (Italy). There are at present 4 “Bio-Regiões” in Portugal (see illustration).

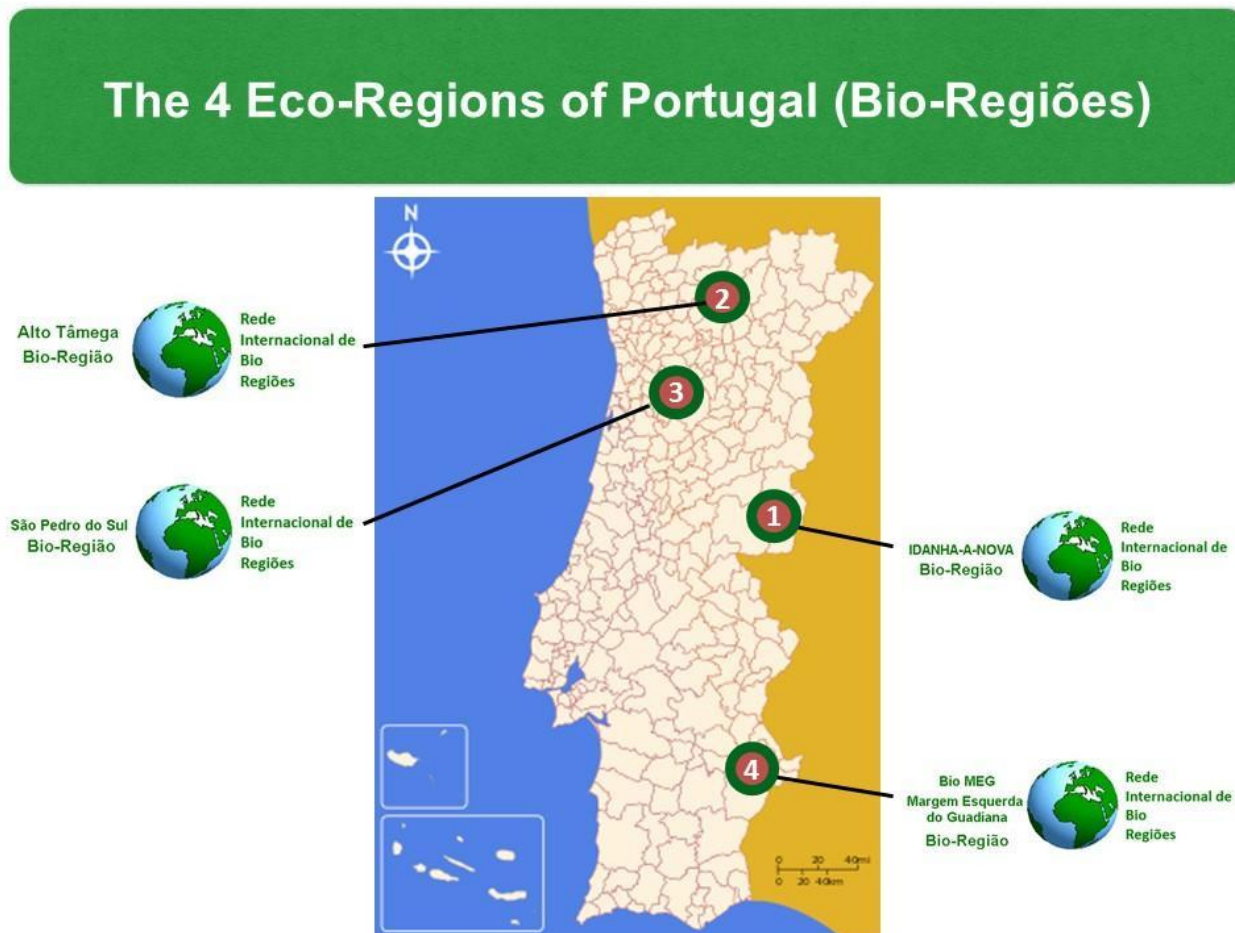


Figure 10: Bio-Regiões in Portugal

The Association of the Eco-Region (ABRE) of S. Pedro do Sul, brings together a group of farmers, consumers, hotels, restaurants, schools, social institutions, associations, municipalities, among others, for the development of organic agriculture from plant production, animal production, processing activity, selling to the final consumer and from the hospitality sector.

It is a "concept" that promotes an agricultural practice that protects the environment and enhances the resources of the Region, and which, through short circuits, favors the local consumption of healthy and diversified foods. Awareness raising and outreach to farmers, consumers, schools, hotels and restaurants will be one of ABRE's main activities.

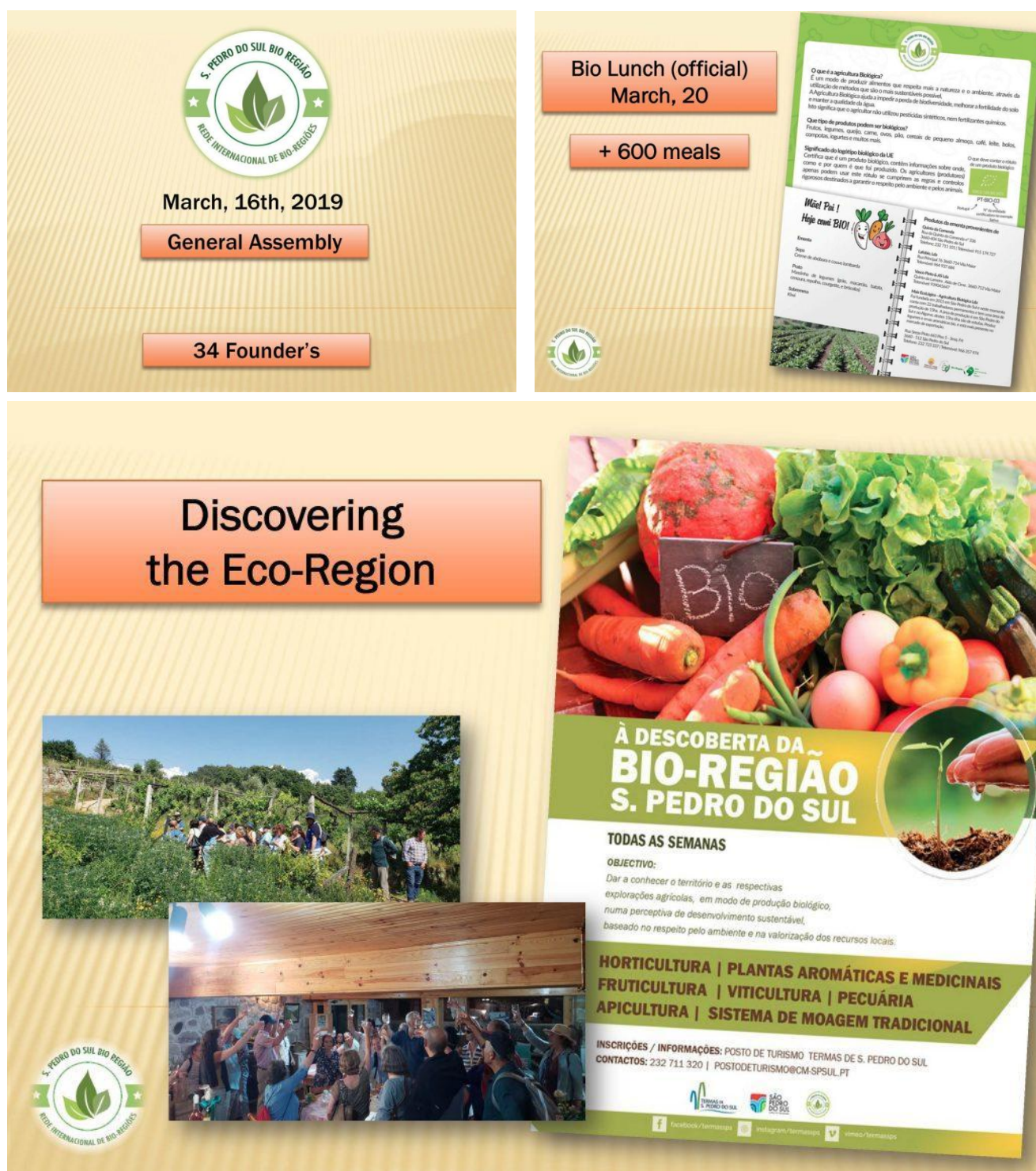


Figure 11: Initiatives by the bio-região of s. pedro do sul

3.4 TYPE 4 – INSTITUTIONAL/TERRITORIALIZED

Cities and their territories are performing a central and growing role in achieving sustainable development. From the distillation into 17 sustainable development goals (SDGs) of the new universal **Agenda 2030**, governments included one broad goal (SDG 11) “to make cities and

human settlements inclusive, safe, resilient and sustainable”. After the adoption of the SDGs, the New Urban Agenda (NUA) was launched in 2016 in Quito, Ecuador, at Habitat III. The NUA is in many ways the fulfillment of SDG 11 and transforms cities interrelationship with the other 16 SDGs.

C40 Cities initiative connects more than 90 of the world’s leading cities to take bold climate action and build a healthier and more sustainable future. Representing 700+ million citizens and one quarter of the global economy, mayors of C40 cities are committed to delivering on the most ambitious goals of the Paris Agreement at the local level. The last C40 World Mayors Summit, taking place in Copenhagen from 9-12 October 2019, will showcase examples of how cities are already delivering on their strong commitments and accelerate the bold climate solutions needed for a sustainable, healthier, resilient and inclusive future. The 2019 Summit aims to build a global coalition of leading cities, businesses and citizens that rallies around the radical and ambitious climate action our planet needs.

The Milan Urban Food Policy Pact (<http://www.milanurbanfoodpolicypact.org>) is the main legacy of the Universal Exhibition “**Expo Milan 2015**” *Feeding the Planet, Energy for Life*. The Milan Pact is a global commitment of mayors from around the world that considers food as an entry point for the sustainable development of growing cities. It represents the main framework for cities and international stakeholders active in innovative urban food policies for the management and governance of local food systems. Nowadays the pact is a new arena of debate and cooperation among cities, metropolitan and regional authorities.

3.4.1 Boundaries of the system

3.4.1.1 Area: city, megalopolis

3.4.1.2 Scale: big

3.4.2 Essential drivers of change: these initiatives are promoted in formal way (with a contract/agreement/declaration) by the Institutional bodies, with a vertical governance, but based on the participatory power of the communities and with the common objective of creating a sustainable food system.

3.4.3 Essential food systems’ outcomes: supply chain structuring, with a big impact but a low involvement of the people in the organization.

3.4.4 Essential interactions between drivers/outcomes: through direct and indirect sales, different types of interactions are created between drivers/outcomes.

3.4.5 Sustainability and resilience of the system: this kind of LSFS is highly sustainable and resilient. Cities and their territories are performing a central and growing role in achieving sustainable development.

3.4.6 Examples of LSFS initiatives corresponding to fourth type in the 5 partners countries

FRANCE

Le Marché d'Intérêt National de Montpellier Méditerranée Métropole (Montpellier 3M)

Montpellier 3 M is the first city to develop an agro-ecological and food public policies in order to respond to:

- the suffering of farmers,
- the food waste,
- the pollution problem.

The MIN of Montpellier, tied to Montpellier 3M since 2003, is largely the bearer of the metropolis policies and concretizes many innovating actions:

- 2011: traceability of the origin and promotion of solidary economy
- 2017: creation of a processing pole labeled organic and local (Label d'OC, Il était un fruit, Agriviva, Le goût du boeuf...).
- 2017 : establishment of an area for organic producers.
- 2018 : publication of a local and seasonal products magazine
- 2019 : online platform

Nowadays, the MIN of Montpellier commercialize 50% of local products (meat, fruits and vegetables) and 220 companies distribute their productions with a strong traceability. The MIN of Montpellier generates revenue of 120 million Euros.

In parallel, several actions have been initiated to develop local products and for a better professional integration:

- Establishment of farm-resources on fields bought by the agglomeration. These mixed-farming farms respect a requirement specification and associated means (first solidary vineyards in France “Vigne de Cocagne”)
- Local supply for mass catering, the MIN plays a dominant role for organic food supply at this level.
- Implementation of partnerships with several associations (CIVAM 34, Semeurs de Jardin, Terre et humanisme...) to develop projects to adapt practices to climatic change.

The food policies have started with the bread as a symbol. Currently, all the canteens received organic bread made of wheat flour from Hérault. From the observation of the loss of pastry laboratories, vegetable processing and cutting rooms very present on the territory in the 1970's, the city developed process workshops and process the 60% of vegetables coming from the metropolis and other raw products. The price is fixed by the producers and products are

commended at least one month earlier. The processing activities imply to hire employees to the distribution of meal which boost the territorial dynamic.

To reduce the food waste, a selective sorting has been introduced and the grammage are adjusted to the age of children.

Lastly, information about local and healthy food reducing GHG emission is realized for children and a project candidacy “Prenez en de la graine” has been launched to offer a vegetal meal once per month.

Nowadays, 14 000 meals are served in integrated management (management integrating social, environmental and economic aspects) on the total of 80 000 meals.

For Montpellier 3M, proximity means to foster raw products supply and process from the metropolis. Then, the proximity from the department and from the region is fostered and lastly in the case of specific products from further areas. The policy leads by Montpellier appears quiet strong and voluntary to preserve the local interests of all the actors of the food system

Sustainable agriculture and proximity circuit in Pays du Mans (Syndicat mixte du Pays du Mans, 2013)

Le Pays du Mans regroups 45 municipalities in the north west of France. From 2010 to 2013, the intercommunality set itself targets for building relationships between city and countryside in order to support sustainable agriculture and promote a large access to local and healthy food products for the commuters.

For reaching these goals, 5 actions have been setting up:

- A diagnosis local supplying for school canteens realized in 2010-2011 setting up in the angle of environmental issues bound to food systems
- The people's education to sustainable agriculture covering the period of 2011 to 2013. This education has been translated by activities in schools around local food, conferences and debates, food markets...
- The school canteens employees training to proximity circuits, public market's legislation, development of set meals with local and seasonal products, qualitative cooking and waste management from 2012 to 2013
- The development in 2011 of a quality-proximity chart opened to all kind of farming (from organic to conventional) in order to touch the maximum of actor in the production and distribution chain. This chart is based on four criteria: the proximity, the traceability, the sustainability and the seasonality of food and distribution.
- A market study in 2013 to structure the local food chain and develop a supplying platform

TERRES DE SOURCES - RENNES

Rennes and fourteen other cities are involved in this project which aims to encourage more sustainability in agriculture by a better valorization of products from farms respectful of water resource. This is the first experimentation in France.

This project aims a strong sustainability of the food system and implies many actors:

- Farmers engaged in a sustainable production system with a progress approach
- Schools serving local and sustainable food
- Water Agency providing the community in water of quality
- SCIC (Cooperative Society of Collective interest) that will be in charge of the governance in the future. A SCIC regroups different kinds of actors including consumers. It is way for participatory governance.
- Local authorities contributing to sustainability on their area
- State for policies, rules, incentive mechanism with subsidies (in this case, with a PAT for Rennes).

The community and the school canteens have introduced sustainability requirements in their buying terms. It is a way to valorize local food in canteens and to increase the quality of the water. The participation of school canteens has been the lever of this project in insuring outlets for farmers protecting water resources. The farmers are encouraged to reduce their environmental impact, helped by a scale of sustainability performance (the method IDEA). Year after year, they have to increase their score. At this moment, 20 farmers are concerned, but it should be more in the future. At the canteens level, the project concerns 20 000 children.

The project's actors want to go further by adapting it to local market (supermarkets...) with a brand, kind of label for products (from farm or processed industry) respecting this sustainability performance. It is a way to local fair-trade.

The final text of the Pact includes a one page protocol signed by mayors and a voluntary Framework for Action with six categories and 37 provisions in the following thematic areas:

- Governance – Ensuring an enabling environment for effective action
- Sustainable Diets and Nutrition
- Social and Economic Equity
- Food Production including urban-rural linkages
- Food Supply and Distribution
- Food Waste

As of June 2018, 167 cities have signed the Milan Pact from 63 countries. One of the most important results of the drafting process for the Milan Pact was the direct exchange and learning between cities, despite being at very different stages of engaging with food policy and practice.

ITALY

LOCAL FOOD SYSTEM OF MILAN. The official Protocol on the food policy of Milan was signed in July 2014 by the mayor of Milan, Giuliano Pisapia and the President of the Cariplo Foundation, Giuseppe Guzzetti, thereby giving birth to an experimental initiative on food.

(<http://mediagallery.comune.milano.it/cdm/objects/changeme:94565/datastreams/dataStream1112173130827997/content?1518607131605>). The Foundation indeed has great experience in the field of

scientific research, especially on food. The Foundation has launched a large variety of actions on the topic of food, involving social, economic, and institutional stakeholders, as well as researchers. Among other important achievements of the Cariplo Foundation related to food policy, on an environmental level for instance, the projects conducted to the creation of the agricultural park 'Sud Milano'. The municipality and the Foundation therefore decided to create a *citizen food policy*.

The priorities of the Milan Food Policy are:

1. **To ensure healthy food and sufficient drinking water as primary nourishment for everybody.** Ensure access to healthy drinking water and sufficient food to all citizens as primary nourishment in order to protect human dignity and improve the quality of life.
2. **To promote the sustainability of the food system.** Facilitate the consolidation of all the components and activities necessary for managing a sustainable food system and promote local production and consumption of fresh and seasonal quality food.
3. **Understanding food.** Promote a culture oriented to consumer awareness of healthy, safe, culturally appropriate, sustainable food, produced and distributed with respect for human rights and the environment.
4. **Fight against waste.** Reduce surpluses and food waste during the different stages of the food chain as a tool for limiting environmental impact and to contrast social and economic inequalities.
5. **To support and promote scientific agri-food research.** Fostering the development of a Milanese agri-food scientific research with connotations of implications related to the urban system, aiming at improving processes and developing cutting-edge technologies.

SLOVENIA

SLOVENIAN FOOD DAY AND TRADITIONAL SLOVENIAN BREAKFAST. Slovenian Food Day is a political measure adopted with the aim of promoting Slovenian or local food. The first Slovenian Food Day was proclaimed by the Slovenian government in 2012. From that year, it is celebrated every third Friday in November. The main purpose of the project is to support local food producers and processors and to promote local self-sufficiency with quality food from the local environment (MAFF, 2018 b).

By proclaiming the Slovenian Food Day, the MAFF formally promotes the consumption of seasonal fruits and vegetables, which have higher nutritional values and fewer additives, helps to preserve the environment, and provides jobs in Slovenia's rural areas. Each year a central theme is chosen, in 2018 the theme was soil and the role it plays in the production of quality and healthy food (MAFF, 2018 b).

The most recognizable event on this day is the Traditional Slovenian Breakfast, which has been taking place since 2011 at the initiative of the Slovenian Beekeepers' Association. The project is mainly performed in kindergartens and schools, but it is also observed by individuals in their private lives. The general purpose of the project is raising awareness about the importance of breakfast and the inclusion of local foods, about agriculture and the food industry, and about the production and processing of food and other agricultural activities. In addition to highlighting the

importance of breakfast containing locally sourced foods, the benefits of physical activity and sports are also emphasized. The MAFF recommends that the traditional Slovenian breakfast be made up of local butter, milk, honey, bread and apples bought from a local supplier (MAFF, 2018 b).

4. COMPARATIVE ANALYSIS OF THE MAIN BARRIERS FOR LSFS

4.1 Similarities

Common problems for the development of LSFSs have emerged in the five countries analysed.

The first one is political. In Italy and in Portugal, there is no precise and specific legislation and not even a strategy. National, regional and local laws overlap between them, creating confusion and difficulties in their application. In France, the most important limitation is at local level with the lack of support to the communities in their sustainable choices and initiatives and absence of a participatory governance.

In Italy, as well as in Slovenia, a considerable barrier is the complex bureaucracy, discouraging the establishing of agricultural business and promoters, blocking often interesting and spontaneous initiatives (resolutions of municipalities, hygienic and sanitary authorizations, taxes to be paid for the occupation of public space, requests to be forwarded to the various offices of the public administration, organic control system, etc.). Here, there is also a thorny social problem. In addition to depopulation trends in rural areas and the negative perception of the agricultural profession among young people, insufficient agricultural training and technical advice emerges with a low level of education and specific skills of producers, that is largely due to the advanced age of the farmers. This can also be seen in Portugal.

Another important limitation, recurring in all the countries, comes from the consolidated conventional industrial food system. It is not easy to change it and to reorientate it towards a new vision of the food production system, far from the massive production and distribution, moving in a global and internationalized market, producing at low cost and causing damage to the environment, health and local economies. Unfortunately, it is still favorite among the consumers due to its cheapness.

4.2 Differences

The main difference in the limitation for LSFSs development comes from Austria, where the OA is strongly established and diversified. The big supermarket chains satisfy the high quality standards of consumers and this impedes the development of alternatives to the current food system. Moreover, current power concentration in organic market retains farmers in high dependencies and pressure them

for high quantity and quality of their produce, but also continuity in their supply. These tendencies do not only influence farmers with contracts (or other business relations) to supermarket chains, but also direct (cooperative) marketing initiatives as the expectation of consumers are high and supermarkets try to keep prices for organic produce low. Therefore critical aspects for the future are: price level and revenues for farmers and especially handling of imported organic produce with lower production costs and thus lower product prices competing with local farmers. In Italy and in Slovenia, instead, a barrier is the lack of financial aid for young people that they want to start a farming business. It's difficult to have access to the credit system. Consequently, there are not resources to invest making sustainable the farmer, *i.e.* from the energetic point of view, with the use of renewable energy sources.

5. CONCLUSIONS

In Europe there is no lack of good LSFs examples. Nevertheless, the present report highlighted the exigence to elaborate a common definition of LSFS that, in most cases, is still confused or even nonexistent. In addition to this, the analysis of the several entities showed common problems between the countries. First of all, the lack of laws that regulate LSFs. It is necessary the introduction of important changes in the national, regional and local legislation, with the integration of new policies and of a new vision of education, research and social commitment, changing the approaches and the practices and enabling pathways for locally embedded and sustainable food systems.

Despite this, many local initiatives, aimed at the sustainability with innovations in the production system (process, packaging, organization, waste management), exist, but, in some cases, there are still difficulties to involve the citizens and consumers in these processes, due to the lack of a participative governance. For this, it's important to start diffusion and educational actions, designed to clarify and to attract the interests of the recipients (producers, consumers, politicians...) at national, regional and local level, about the several environmental, social and economic advantages of LSFs. In fact, to facilitate their diffusion, it is necessary to portray clearly and schematically all the several existent typologies, in order to support the comprehension from all the stakeholders, starting with the students from schools with specialization in agricultural studies. It is no coincidence that a strong push of change arrives from young people contrasting the climate changes and other environmental emergencies. The education is an important lever to aware and to empower people, in order to make clear that the healthy, fair and sustainable food is a primary exigence. The school cannot escape this role of the younger generations awareness / education for sustainability and healthy diet. A starting point at a didactic level could be the knowledge of the territory and of the local food system, creating an increasingly closer link with it and local farms. From this point of view, agro-ecology and organic farming have proved to be the experiences from which start to build LSFs, representing the best response to the emerging and increasingly widespread demand for environmental and food quality; recovery of traditions, knowledge and local arts; reduction of inefficiencies and waste, reduction of the distances between the city and the countryside.

This report provides a didactic tool that, together with the other outputs of EducLocalFood project, can contribute to develop knowledge and skills in the future protagonists of the rural world, useful to realize the territorial and sustainable transition of the food systems. The next intellectual output of the project (O2) will question in a first part (O2-A1) how innovative pedagogical practices aim to accompany



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the students learning and empowerment and how it becomes concrete in the pedagogical practices in VET school. Then in a second part, we will study on the basis several interviews the knowledge of teachers about LSFS and the pedagogical practices set in to teach the thematic to lastly understand lack to teach LSFS. This work should lead us to propose several innovating pedagogical practices useful for teachers from different teaching areas in order to make the students an author of his learning and his act.

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SUS+ Innovative Education towards Sustainable Food Systems, Erasmus+ EU Project, <http://susplus.eu>

TEFSI Innovative teaching for Sustainable Food Systems, Erasmus+ EU Project, <http://tefsi.tefsi-project.org/com.pl>

FAO – AGROECOLOGY KNOWLEDGE HUB, <http://ao.org/agroecology>

ECO-REGIONS Portal developed by the International Network of Eco-Regions (IN.N.E.R.), <http://www.ecoregion.info>