



LENTURA

A Circular Economy Business Model Case

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Executive Summary

This report analyses one of the business case studies selected within the R2Pi Project: Lentura, an association of agro-ecological food growers located in Galicia, Spain. This study aims at obtaining a comprehensive knowledge of what an initiative based on a local and natural food supply implies in terms of circular business models.

Lentura, whose origins date back more than a decade, has as its main goal to provide its customers with horticultural products, obtained through organic practices and marketed in proximity. In other words, the business model is based on growing natural food, free of synthetic chemicals, which is sold through proximity schemes that minimise the number of kilometres covered by the food products. For the latter, distribution is based on direct sales, around a geographical area that does not exceed 30 km between producers and consumers.

This association is mainly characterized by organic farming practices. Taking this fact into account and the organic and proximate characteristics of its foodstuffs, Lentura's practices fit in well with a CEBM based on circular sourcing. However, Lentura also carries out activities that may be considered as co-product recovery, such as the utilization of animal excreta for fertilizing or reusing packaging employed in food deliveries.

Concerning Lentura's context, organic farming has been a growing market in Spain and Europe for more than a decade. Although the conventional food sector remains highly competitive, there is a growing demand for a natural and healthy diet, which visibly benefits Lentura's model. Despite these developments, national and regional legislation does not benefit (or even hinder) the emergence and prosperity of organisations and activities like Lentura. They are characterised by very stringent hygiene requirements and production limitations.

The assessment of the circularity of Lentura business model provides remarkable insights. The key aspects are related to the natural farming practices, to the organisation of activities in proximity (reducing the number of kilometres and making it possible for the products to be so natural) and to the take-back and reuse of packaging. These circular activities have given rise to a series of financial and non-financial benefits that range from cost and material savings through the reintegration of packaging, to the improvement of the farmers' income and the sustainability of food products through the maintenance of proximity schemes.

The close and highly relational environment generated by Lentura is the main strength of the organisation, together with the naturalness of its food products. However, the lack of flexibility that they impose on their proximity model leads to relevant problems in aspects such as the volume of supply. With regards to the environment, Lentura may be affected by the increasing competition from organic or eco-friendly products provided by conventional food suppliers. Moreover, this report also shows some potential opportunities for Lentura to go further in circularity and improve its business model, such as relaxing the criteria of proximity, intensifying its production or generating compost from food waste.

Even despite the mentioned aspects, this is a circular model that is not difficult to replicate or transfer, since it is based on simple ideas and does not require large investments for its implementation. The critical point to overcome lies in the ability to coordinate a certain know-how together with the maintenance of customers who today have above-average levels of educational awareness on food-related topics.

In short, the report shows how Lentura manages to create a small alternative food system with a high relational content, which is an interesting business model for a Circular Economy. Information flows simply and farmers are valued, while respecting to a large extent the natural cycles involved in farming processes. The conclusion section recommends to adapt the hygiene and marketing regulations in the



area and to introduce measures to improve consumer's food education in order to support more circular business models similar to Lentura case.



1 Introduction

1.1 Background and context

R2 π – Transition from Linear to Circular is a European Union Horizon 2020 project focused on enabling organisations and their value chains to transition towards a more viable, sustainable and competitive economic model in order to support the European Union’s strategy on sustainability and competitiveness.

R2 π examines the shift from the broad concept of a Circular Economy (CE) to one of Circular Economy Business Models (CEBM) by tackling market opportunities and failures (businesses, consumers) as well as policy opportunities and failures (assumptions, unintended consequences). Its innovation lies in having a strong business-model focus (including designing transition guidelines) as well as in the role of policy development (including designing policy packages).

The ultimate objective of the R2 π project is to accelerate widespread implementation of a circular economy based on successful business models and effective policies:

- to ensure sustained economic development,
- to minimize environmental impact and
- to maximize social welfare.

The mission of the project is therefore to identify and develop sustainable business models and guidelines that will facilitate the circular economy, and to propose policy packages that will support the implementation of these sustainable models.

A core part of this project is to work with organisations who are on the journey towards developing circular economy business models, as well as those who have the ambition to do so but haven’t yet begun. The project has conducted case studies of 18 selected organisations.

The 18 chosen cases covered all five priority areas highlighted in the EU Action Plan on the Circular Economy: plastics, food waste, biomass/bio-based, important raw materials, and construction & demolition. Additionally, the cases were selected to ensure learning in each of the seven business model patterns defined by the R2Pi project: re-make, re-condition, circular sourcing, co-product recovery, access, performance and resource recovery, and these will be discussed in more detail in this report. To gather wide-ranging lessons from differing company sizes and maturities, the following were selected: 7 large corporations, 8 small, medium enterprises, 1 public entity, 1 entire value chain with both public and private organisations and 1 ongoing social project.

This report presents the case study of Lentura. It was chosen due to its role in the agricultural sector and due to its organic, proximity and take back model, based on a social initiative.

1.2 Business overview

Lentura started its activity in Galicia (NW of Spain) 13 years ago based on the Amorodo Project. This project was financed by the provincial administration and was aimed at training farmers in sustainable agriculture, livestock breeding and food safety as well as in the use of ICT in management and developing websites for setting direct relations with final consumers. The project also included consumers-targeted actions, including training and awareness about food production and consumption.

Lentura was officially founded in 2009 but a few farmers had already started to produce and directly commercialise food between 2006 and 2007 in local farmer’s markets, and progressively expand to a distribution centre and new customers (school canteens, consumers’ associations, etc.). Lentura is currently recognized as an association of 18 agricultural farmers whose main objective is to provide



customers with organic food products in proximity. In fact, the association works in a distance area that does not exceed 30 km between farms and consumers, offering products such as fruits, vegetables, meats and eggs, as well as small manufactures such as jams or preserves.

The main types of consumers are school canteens, households, restaurants and consumer cooperatives, which Lentura reaches through three different marketing channels:

- Weekly farmer's markets
- Box schemes: consumers receive boxes in their homes, containing products selected by Lentura or by the consumers themselves
- Direct deliveries from farms to large consumers (mainly public-school canteens).

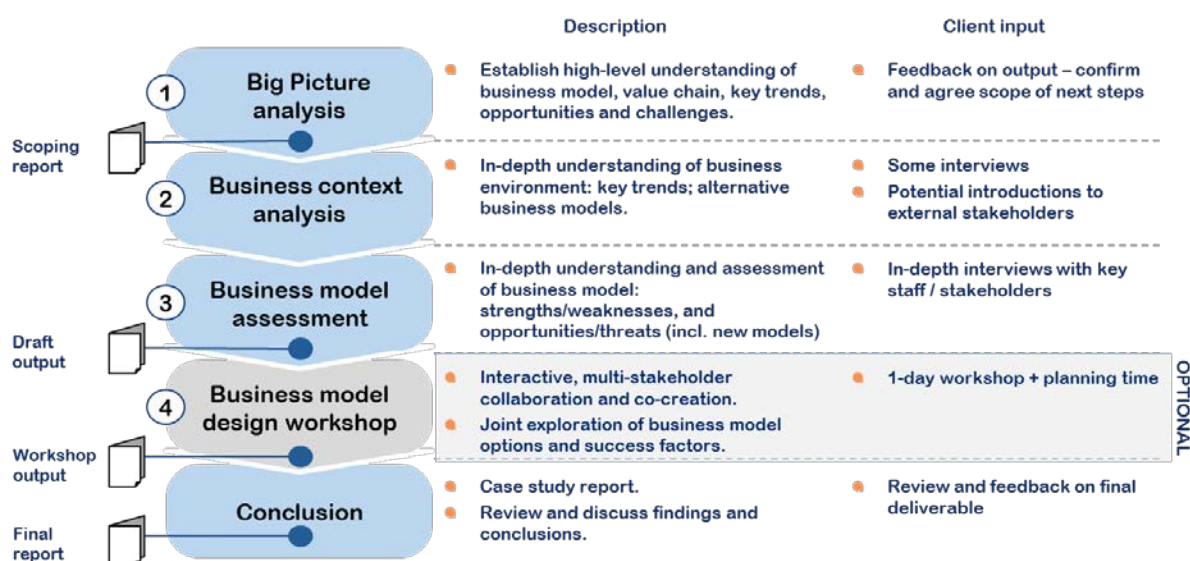
It is important to remark that Lentura association is based on the willingness of farmers to participate and on their shared vision of an alternative food system that allows for close interaction between producers and consumers.

FIGURE 1. LENTURA ASSOCIATION LOGO



1.3 The case study analysis process

The case study process was structured in three main steps and concludes with this document as the final report (see diagram below).



The process followed for the development of the case study of the agro-ecological association Lentura was carried out during the months of March-June 2018. The kick-off meeting took place on March, with the participation of a founding member as the representative of Lentura, and three USC team members. Between the end of March and April, the necessary meetings and communications to start with Step 2 and complete the questionnaire dedicated to the organisation's environment were held. From that step on, a more in-depth analysis of the contextual factors that affect Lentura was based on desktop research. The Step 3 was developed in May, the focus was placed on the association's own business model. Thus, a series of face-to-face meetings and e-mail conversations took place to

complete the analysis of this model using the Business Model Canvas and R2PI methodological tools. The analysis of the Lentura model was performed, including the mapping of physical and value flows around the organisation. Step 3 was finalised with an assessment of the circularity of Lentura's business model, identification of financial and non-financial outcomes and a SWOT analysis. The writing up of the report was completed by the end of July.

1.4 Report outline

This report is comprised of a series of sections and subsections aimed at acquiring a comprehensive knowledge of the circular business model of Lentura. To this end, a series of parts that guide this work have been put together in such a way that the reader can move from a general knowledge of the organisation and its environment to deeper and more complex aspects.

Thus, after a high-level overview of the business model implemented by Lentura association (section 1), it follows the analysis of the contextual factors that are present or relevant to the situation of this farmers' association in section 2. In section 3, Lentura's circular business model is analysed, including circularity assessment and identification of the main strengths and weaknesses. The report concludes in section 4 with a reflection on business model enablers and barriers as well as offering a few key business insights and policy makers recommendations.



2 Lentura's business context analysis

2.1 Scope of the business context analysis

The objective of the context analysis is to identify the main external factors that need to be taken into account in order to explain the success (or failure) of Circular Economy Business Models (CEBM), as well as their potential role in accelerating the transition towards a Circular Economy.

In the first stage, desk research was conducted in order to identify the country and sector-specific factors that may potentially affect the business model. To this aim, the check-list provided in D.3.2. Methodology was used. This overall information was collected from available data and information on websites, sectoral reports at the international level and scientific literature. In the second stage, an in-depth interview with the representative of Lentura was conducted.

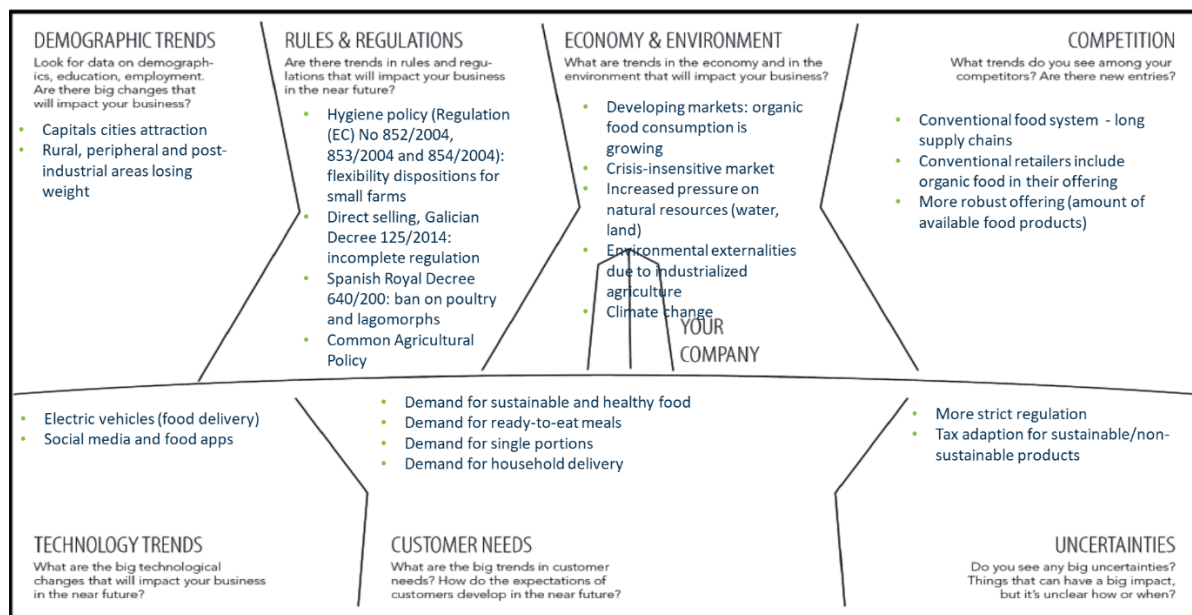
2.2 Contextual factor analysis

In the last few decades, experiences associated to local, proximity or alternative food systems have been increasing their presence in the European context. Several countries and regions (France, Germany, Austria, Italy, etc.) have adopted legislation to facilitate and promote this type of activities (Kneafsey et al., 2013; MAGRAMA, 2013), including the adaptation of the European health and hygiene legislation, definition of activities, products, saleable quantities, etc.

Currently, it is easy to identify across the European Union a number of incipient and, in some countries established initiatives (e.g. France), which offer an alternative and territorialized food production and consumption model. Examples like farmer's markets, on-farm sales, direct sales shops, box schemes, and so on, represent this model and attempt to re-connect producers and consumers and re-localise agricultural and food production. Abundant theoretical and evidence-based literature recognises several (social, environmental and economic) benefits from these initiatives, such as connection between farmers and consumers, sense of community, local jobs creation, adoption of sustainable production methods, reduction of packaging, ... (F. Galli & G. Brunori, 2013; Kneafsey et al., 2013).

This sub-section presents the different factors that may affect the initiatives build upon short food supply chains and organic farming, from a Circular Economy perspective. Information presented is based on desktop research. The different factors represented in Figure 2 will be described below, and are integrated into different categories, namely: demographic factors, rules & regulations, economy & competition, technology trends, customer needs and uncertainties.

FIGURE 2. CONTEXT MAP CANVAS



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Source: own research

2.2.1 Demographic trends

European Union population has grown considerably older in recent times (Eurostat, 2018). The continued decline in the birth rate together with the increase in European life expectancy thus foresee population pyramids that are increasingly long-lived. Alongside this fact other patterns are observed among the main changes experienced in the population of the European Union (Eurostat, 2018b):

- An attraction effect on the capitals cities, which attract more and more people.
- The maintenance of mostly upward trends in urban places, while rural, peripheral and even post-industrial areas tend to lose weight.
- A strong North-South divide in terms of household composition and birth rate; the Mediterranean areas being more likely to form family nuclei than those in the north although paradoxically former experience lower birth rates.

Taking the closer context of Galicia, where Lentura initiative has been implemented, demographic data show, in general, worrying signs of ageing, depopulation in some areas and concentration in others, deterioration of the age structure, including the active population, negative vegetative balances, etc. However, the specific geographical area where Lentura develops its activity and where it could potentially scale up, offers more favourable conditions for its consolidation than other rural areas in Galicia. A demographic situation that is not "optimal", but which implies more positive conditions than the Galician average: higher population growth rates, higher birth rates, reduced mortality rates, negative but less significant balances, more favourable migratory balances, lower ageing rates...

In addition, this rural area is close to the city of Santiago de Compostela, which is the reference university city in Galicia and the administrative capital of the region as well as an important tourist destination. In this sense, this rural area represents a favourable context where the level of knowledge and awareness of the population regarding food products are higher and show a stronger level of commitment in purchase decision.

2.2.2 Rules and regulations

2.2.2.1 Hygiene regulation

The primary legislation that agents must comply with in order to participate in the agri-food industry is related to health and hygiene standards and conditions. This is collected in the first instance in the so-called European "Hygiene Package", which is made up of the Regulations (EC) Nos. 178/2002, 852/2004, 853/2004 and 854/2004 of the European Parliament and the Council.

The Hygiene Package includes some flexibility provisions that Member States can and/or must regulate to adapt it to the national reality. In this way, both Regulation (EC) 852/2004, regarding general hygiene standards for operators of the sector, and 853/2004, complementary to the previous one and with specific rules for foods of animal origin, establish exceptions for direct sales.

Specifically, articles 1.2.c (Regulation (EC) 852/2004) and 1.3.c, d (Regulation (EC) 853/2004) exclude from the application of these regulations¹ direct sales of small quantities of primary products (animal or vegetable origin) and poultry meats or lagomorphs slaughtered on the farm. Therefore, a large part of Lentura's products (horticultural products, fruits, eggs, chicken or rabbit meats) would only be subject to the general health principles of the RCE 178/2002. Small homemade manufactures and other types of meat other than poultry and lagomorphs are subject to the bulk of the Hygiene Package.

However, there is not yet a specific regulation in Spain for the direct sale of these products (flexibility provisions have not been exploited at national level). Nevertheless, it does exist in Galicia. It is the Decree 125/2014, of September 4, which regulates the direct sale of primary products from farms to final consumer in Galicia. It includes important aspects such as the need for farms to establish a system of hygienic-sanitary self-control, the specific products and maximum quantities to be marketed under direct sales, or the marketing channels recognized as direct sales. However, this Decree 125/2014 presents some limitations:

- Restricted consideration of direct marketing. The Decree only considers face to face sales (sale in farms, in markets or in establishments without other intermediaries). Thus, the box scheme, a highly extended direct sale channel (also used by Lentura) is not included among the food delivery models based on proximity.
- It does not contemplate the direct sale of meat products from poultry and lagomorphs slaughtered on farms. This is, as mentioned in the Decree itself, caused by the Spanish Royal Decree 640/2006 (Article 4.1), which establishes that meat from poultry and lagomorphs slaughtered on farms can only be used for domestic consumption (although EU legislation does allow for direct sale of them).

2.2.2.2 Common Agricultural Policy (CAP)

Besides the Hygiene Regulation, it is important to remark the funding framework created by the Common Agricultural Policy (CAP). From 2014 onwards, the CAP is more focused on promoting sustainability and combat climate change. In this sense, it sets that at least 30% of the rural development programmes' budget will have to be allocated to agri-environmental measures, support

¹ In those cases, where Regulation (EC) 853/2004 is not applicable, neither is Regulation (EC) 854/2004.



for organic farming or projects associated with environmentally friendly investment or innovation measures².

In this sense the Rural Development Programme of Galicia 2014-2020 includes a specific measure to subsidise short food supply chains. The requirements are quite strong: subsidies are aimed at groups of at least two partners with a legal recognised form; a short food supply chain is defined as that with not more than just one intermediary between the producer and the consumer; and a local market is that one where distance from farm to the point of sale is less than 20 km (Xunta de Galicia, 2018).

The above mentioned Rural Development Programme of Galicia also includes measures to support training and specialised advice on short food supply chains.

In spite of this supportive framework of short supply chains (Regulation (EC) 1305/2013), the RDP of Galicia 2014-2020 (funded with 977 million euros) provides a minor part of the resources for its promotion: 31 million euros for cooperation measures, where short food supply chains and other types of initiatives are included (Xunta de Galicia, 2018).

2.2.3 Economy and competition

According to the Spanish Ministry of Agriculture and Fisheries, Food and the Environment - MAPAMA³ (2016), the number of organic agents in Spain (producers, processors and traders)⁴ has increased significantly during the last decade (see Figure 3). Despite a period of stagnation between 2011 and 2014, there are 36,207 organic producers now, twice as much as before the crisis. This makes Spain the second country of the European Union in terms of producers, far behind Italy with 64,227 organic producers; but ahead of countries such as France (32,264), Germany (27,132) and Austria (24,213).

² https://ec.europa.eu/agriculture/organic/eu-funding/eu-funding-and-the-new-cap_en

³ Note that the data available from the Ministry of Agriculture and Fisheries, Food and the Environment only refers to certified operators.

⁴ It is important to note that these numbers do not correspond perfectly to the sum of producers, processors and traders (organic operators), since, for example, a producer may also be a trader.



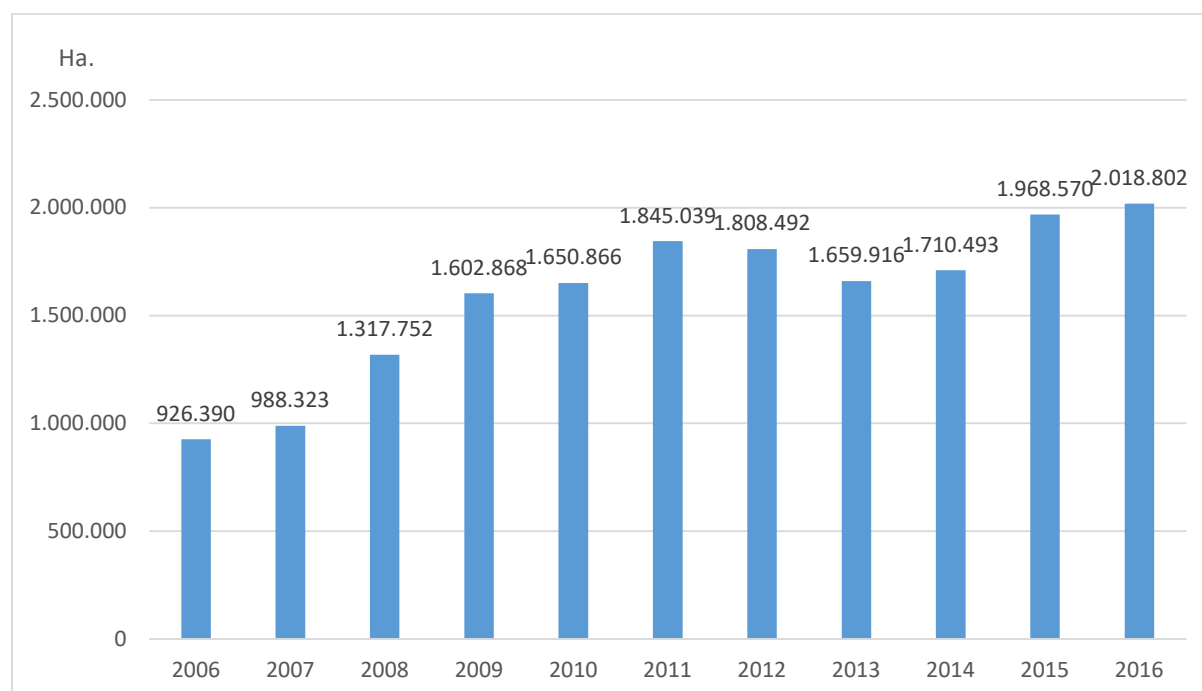
FIGURE 3. NUMBER OF ORGANIC PRODUCERS IN SPAIN: 2006-2016



Source: own elaboration based on MAPAMA data

Accompanied by this increase in the number of operators, the total area devoted to organic farming and livestock has also increased in Spain, doubling in the last decade to reach 2 million hectares (see Figure 4). This factor places Spain as the country with the most area devoted to this type of activity, 16.9% of the entire EU in 2016, followed by Italy and France with 1.8 and 1.5 million hectares, respectively.

FIGURE 4. ORGANIC FARMING IN SPAIN (HA), 2006-2016



Source: own elaboration based on MAPAMA data

Although retail sales have grown considerably in recent times, from 490 million euros in 2006 to 1,686 in 2016, the level of the Spanish organic consumption is very low. According to the report *The World of Organic Agriculture Statistics and Emerging Trends 2018* prepared jointly by FiBL & IFOAM (2018), organic consumption of Spain stands at 36€ per capita in 2016; far below from the European Union average (60.2€/inhabitant).

Finally, it is worth mentioning some aspects related to business models focused on organic products markets. Based on the report *The organic market in Spain 2016* (EcoLogical, 2016) and regarding retail distribution, direct sales in 2013 only accounted for 15 to 20% of sales to consumers of organic products. On the other hand, specialized stores accounted for the majority of sales (42-52%), followed by conventional food retail companies (32-42%). Therefore, direct sales avoiding intermediaries is the minority choice among organic food consumers.

2.2.4 Technology trends

The main technological trends in the agri-food sector have to do with new products (seeds, food products) and machinery developments. However, organic farming and short food supply chains are not so influenced by those technology trends. Some specific aspects potentially affecting them are pointed out below:

- Integrated systems for obtaining seeds. There is a general trend among local agricultural organisations to establish integrated systems for obtaining seeds. This practice makes it possible to eliminate dependence on external organic seed suppliers by creating more close, internal seed banks. This way, it also facilitates the conservation of different seed varieties within organisations acting locally.
- Electric vehicles. Some types of electric vehicles have a much smaller environmental footprint than current cars with a combustion engine. Various organisations from multiple sectors are equipping their fleets with transport vehicles of this type. Food delivery in proximity might benefit from this type of vehicles and thus ensure a reduced impact derived from food transportation.
- Preserved vegetables and new food products. Preserving food ensures a longer lifespan of products, reducing the amount of food that is wasted. This technique is a solution when food cannot be consumed fresh for a relatively short time after harvest. It also allows the consumption of seasonal products out of the corresponding season, providing an alternative for consumers to be served with local and organic products of different varieties available throughout the year.
- Reverse logistics. The implementation of take-back systems, for instance for packaging reuse seems to be taking hold today (e.g. reduction of plastic bags and reuse of other kinds of more durable materials). As far as food is concerned, reuse of packaging involves the technology of sterilization, among others.
- Recent development of apps and online platforms for ordering food delivery directly to households can also be pointed out. This recent technology trend could help reconnect some local and surrounding consumers and primary producers.

2.2.5 Customer needs

Nowadays, the global food industry produces enough food to feed the whole planet. Notwithstanding, there are numerous problems associated to food distribution problems and to the dominant food system -controlled by large global multinational companies, which affect consumers. For instance, nourishing problems, diet-related diseases, food affordability and food security are crucial issues.



The conventional agri-food industry delivers food to consumers with a variety of synthetic chemicals added. The distribution of these products through long supply chains makes food products less respectful of the environment and largely unrelated to the generation of local employment. For all these reasons, customers in developed countries have difficulties in basing their diet on natural, healthy products that have not travelled long distances.

A few European studies state that food consumers are more and more increasingly concerned on environment, health, origin, embeddedness and many other characteristics of food products (Kirwan, 2004; F. Galli & G. Brunori, 2013; Kneafsey et al., 2013). More specifically and according to the latest report commissioned by the MAPAMA (2017) for the characterization of the organic consumer in Spain, the two main reasons to consume organic products are related to health and to the fact that they are not grown with artificial fertilisers and pesticides. Also, consuming foods that respect the environment, coming directly from farms, are among the ten main reasons mentioned by organic consumers.

Opposite to that, there is also a trend which is directly related to contemporary fast live styles, with more consumers attracted by ready-to-eat meals. This trend is clearly conflicting with short supply chains delivering fresh natural food products.

2.2.6 Uncertainties

Firstly, given the weak or inexistent legislation for short food supply chains, there is still a possibility that the authorities will legislate on this matter. This could be negative for initiatives based on local food production and sale if they restrict or toughen the current and small regulatory framework. However, if policymakers recognized the potential of short value chains, it would be possible to obtain a regulation that would adapt satisfactorily to the needs of this type of initiative. This would contribute to the growth of Lentura and the possible emergence of other organisations of similar characteristics.

On the other hand, the potential introduction of environmental taxes in the short term could benefit sustainable food systems comparatively with other conventional initiatives. For example: Taxing emissions, food miles, recyclability, etc.

Finally, it must also be beard in mind that organic food farming initiatives depend directly on the conditions of land, biodiversity and climate conditions. Thus, if climate change continues to affect the environment in the future, agriculture may be endangered, either in an integral way or affecting some essential factor such as water, soils, etc.



3 Business model assessment

This section focuses on the analysis of Lentura business model. The objectives were to gain a deeper understanding of the circular business model and to map out the value chain and interactions in more detail to enable an analysis of the strengths and weaknesses as well as to consider the replicability and transferability of such a model to other entities and sectors.

Firstly, the Business Model Canvas was used to analyse the nine building blocks through structured interviews. Secondly, Lentura's monetary and physical flows were mapped, based on information provided by the organisation. Thirdly, the circularity and SWOT of Lentura business model were made through a combination of publicly available information and interviews with members of the case organisation.

3.1 Lentura business model

3.1.1 Business model overview

Lentura is an association of farmers focused on marketing healthy food products at the local level, based on free agrochemical production and awareness of the importance of local production and consumption, with proximity as a cross-cutting concept.

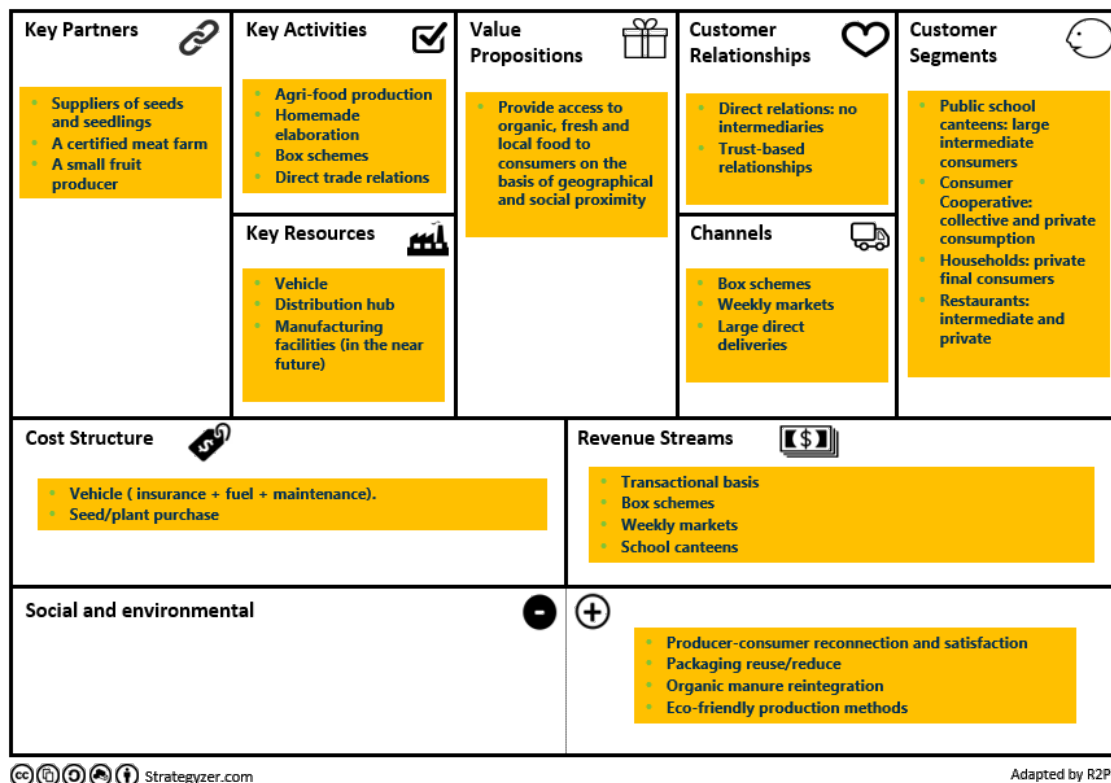
As a business model for the Circular Economy, Lentura offers insights on the implementation of several principles: the principle of reduction is visible in production with non-use of agrochemical inputs and marketing of food in natural and preserved format; also in distribution, as the association has a very strict policy for serving consumers in proximity (no far than 30 km from farms). The principle of reuse is also applied, especially to food packaging (boxes, cartons, jars, bags).

In the next pages the Lentura business model will be analysed in depth, going through the nine Business Model Canvas building blocks.

Depicting the Business Model Canvas

Figure 5 shows the visual representation of Lentura's business model, based on the Business Model Canvas. This is to incorporate the way in which: (i) the value proposition and customer needs assessment and; (ii) circular economy principles, are applied and embedded.

FIGURE 5: BUSINESS MODEL CANVAS



Source: own elaboration

3.1.1.1 Value proposition

Lentura value proposition consists of serving organic and fresh food directly to final consumers. As an association of agroecological farmers, Lentura offers a diversified and seasonal range of vegetable and fruits, products of animal origin (meats, eggs, honey), and small food manufactures (jams, cakes, etc.).

The value proposition relies on a shared vision of farmers and consumers regarding food production and consumption patterns. Farmers belonging to the association believe in chemical-free production, thus they do not aim at increasing their yield, rather they focus on obtaining natural food. Besides that, the value proposition is created around the proximity concept, including both social and geographic dimensions. That means that Lentura farmers give up higher market share in favour of trust and real proximity with food consumers. Consumers also share the vision of an alternative food system, in which they are willing to pay a fair price to farmers to obtain trustful and natural food.

Lentura's value proposition incorporates clear elements of Circular Economy. First, food products are mostly natural, thus clearly differentiated from conventional ones, which are more industrialised. Second, it is noteworthy that among its small manufactures the organisation produces some types of preserves, sauces, jams, etc. from perishable and surplus agricultural products. In this way, Lentura is generating new income for the association and, at the same time, resources that would not find a place in the market are recovered and saved from ending

up as waste. Likewise, containers they use are reusable and reused⁵. Lentura retrieves containers either at the market stalls, or when the association makes the deliveries in vehicles, recovering the containers that they had previously used. So far, they have a simple but effective reverse logistics. In addition, all logistics are planned to minimize the number of trips made. They also promote the closure of material cycles by incorporating organic waste produced at the farms, such as manure, in their farming processes. All these aspects are highly appreciated by Lentura customers.

3.1.1.2 Customer segments

Lentura's customers can be classified according to the following categories: large or small consumers, public or private clients, individual or collective-group, intermediate or final consumers.

Therefore, the following kinds of customer segments are identified:

- Public school canteens: besides their public character, they can be considered as large intermediate consumers.
- A consumers' cooperative: distinguished by a type of collective and private consumption.
- Restaurants: they are intermediate private collective customers.
- Households or individuals: they are private and final consumers.

3.1.1.3 Customer relationships

Lentura is characterized by establishing close relationships with its customers. It works through the so-called "short food supply chains". Following the French school, they work SFSCs with proximity characteristics both in spatial and social aspects. Respecting a limited area of action and maintaining a direct relationship between producer and final consumer (Kebir & Torre, 2013; Gallaud & Laperche, 2016; Mundler & Laughrea, 2016). Therefore, all products are marketed by the farmers integrated in the association and without intermediaries, with the exception of meat products, which need special processing facilities. In summary, farmers themselves weekly organize their buyers' orders, deliver the shipments and sell products in market stalls. All this process allows a more social and sustainable interaction between producers and consumers, holding the vision of Lentura according to the proximity cross-cutting concept.

3.1.1.4 Channels

Lentura has developed different market channels that align with the different customer segments. All the channels support the practical implementation of short food supply chains, including both dimensions, short distance and social proximity:

- Weekly farmer's markets to meet the demand of private customers.
- Box schemes. This is the channel that allows a careful planning of weekly deliveries. Several loyal consumers (private households) receive weekly boxes in their homes,

⁵ Except in the case of glass jar lids, which by law are currently limited to a single use only.



composed of products selected by Lentura (closed boxes), or chosen by customers themselves (open boxes). Through the logistics established around this channel and in order of the minimization and concentration of transports, Lentura also takes care of part of the demand of the school canteens

- Direct shipments by van from farms to large consumers, such as school canteens. This is a channel that is used to serve this customer segment. As demand from this segment is not fully met by using the box scheme, the organisation has established this specific and direct means of serving food.

Regarding reverse logistics, the association has not implemented any formal take-back programme. However, it does recovery for packaging based on customers' collaboration. There are customers who even give containers to Lentura that they keep from shopping in conventional establishments (jars and egg cups). Therefore, Lentura regularly manages to take advantage of its own containers and even those of others.

3.1.1.5 Revenue streams

Revenue streams are based on the direct transaction with customers. Following the three channels, Lentura farmers get revenues from selling food through box schemes, weekly farmers' markets and direct sales to large consumers (school canteens). Customers' payment methods are in cash, in weekly markets and box scheme, and bank transfers for products delivered to public schools and through the box scheme.

In 2017, total revenues of Lentura amounted to €63,517 distributed by marketing channels as follows:

- Box scheme: €39,220
- Weekly markets: €17,420
- Sales to school canteens: €6,877€

It is worth noting that Lentura sets fixed prices for each different type of product. This price, which is kept along the year, tries to reflect the whole costs of production, and guarantees that farmers receive a fair payment for their produce and services.

3.1.1.6 Key partners

One of the keys of Lentura's model is to integrate most parts of the agri-food chain in order to retain most of the added value and establish strong relationships with its customers. However, some partners are also needed in order to provide specific elements. The case of seeds and seedlings stand out; other organic suppliers are needed in those cases where Lentura is not able to obtain their own seeds or sprouts. It is also the case of meat, especially beef and pork. Lentura works with a former member that produces certified organic meat. Finally, the association also operates together with some producer of small fruits.

3.1.1.7 Key activities

The main activities are the following ones:

- Agroecological farming and livestock breeding, as well as small food products manufacture; this also includes the observation of food hygiene norms.



- Implementation of direct marketing channels: elaboration and delivery of box schemes, shop assistance in farmers' markets. This activity involves a capacity to interact with customers and to manage the match between supply and demand.

3.1.1.8 Key resources

The development of Lentura initiative relies on the following key resources:

- Human and intellectual resources: they are referred to the application of agroecological farming practices.
- Physical assets: to efficiently deliver food to consumers, Lentura owns a van and it also has a distribution centre, where boxes are organised and then delivered to customers. The van permits operating through the three types of marketing channels (farmer's markets, box scheme, and large shipments to schools).

The association is planning to invest in a manufacturing centre, which will be among the key resources soon. With it they expect to obtain a qualitative improvement in the development and the circularity of their home-made products.

3.1.1.9 Cost structure

Each farmer belonging to the association has its own costs, derived from agricultural and livestock production, as well as from food manufacture. These costs are individually beard by each farmer, based on the revenues they receive from the sale of food products.

As far as the association is concerned, common costs are supported proportionally by all farmers, depending on sales levels: a 25% from box schemes and a 15% from farmers' markets. The main costs are related to the vehicle maintenance and to the purchase of seed and seedling, as well as containers covers.

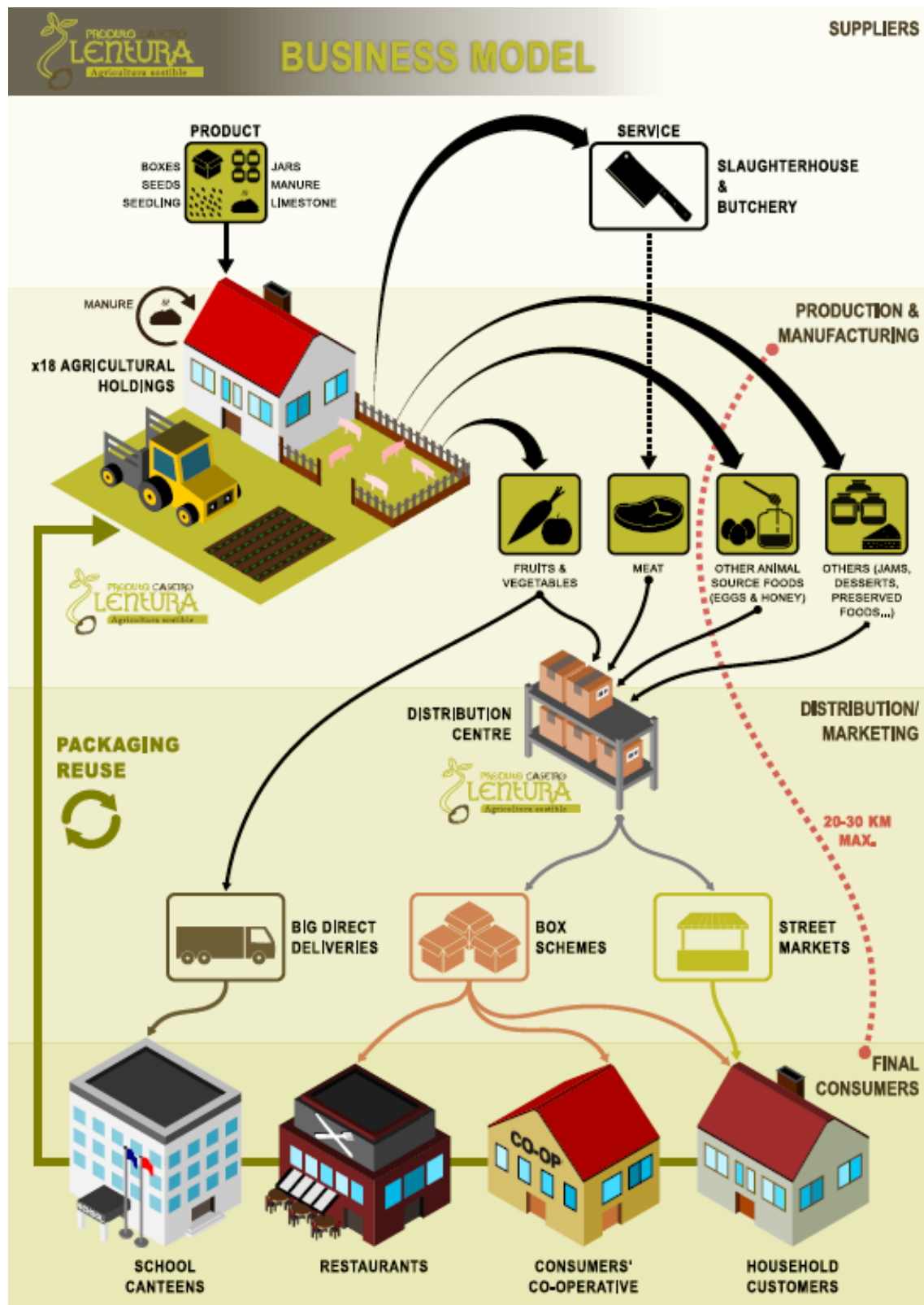
In 2017, the vehicle expenses were €470 for insurance (fixed cost), €360 for maintenance (variable cost), and €540 for fuel (variable cost). Expenses on seed and seedling amounted €2,830.

Lentura also reduces operating costs by using manure as a fertiliser, avoiding food losses while manufacturing small value-added food preserves, making manufactures with food close to expiration date, and recovering food packaging. It means that Circular Economy principles contribute to reduce Lentura costs.

3.1.2 The Value Network

The value network created around the Lentura business model is shown in Figure 6. A detailed description of material and value flows is provided next.

FIGURE 6. LENTURA BUSSINESS MODEL OVERVIEW



Source: own elaboration

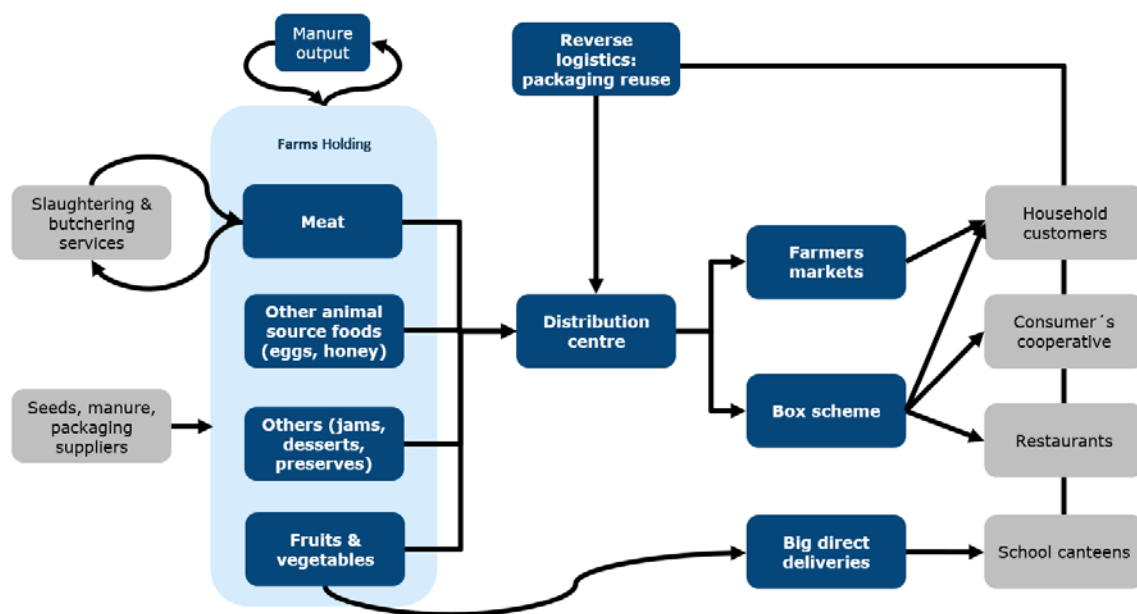
3.1.2.1 Material Flow

As the value proposition of Lentura relies on offering natural food, the material flows are mainly composed of organic matters (Figure 7). The figures for year 2017 are described next. In the first stage, organic fertiliser flows stand out above the rest, reaching more than 140 tonnes, including Lentura own manure generation and 56 tonnes demanded to external suppliers. At this stage, there are also small flows of paper and aluminium.

At the production and manufacturing phase, there are 13.3 tonnes of food sold by Lentura, 11.4 tonnes are vegetables and fruits which are partially sold through direct shipments to schools (3.7 t). The remainder (vegetables, meat products, etc.) is distributed through the box schemes and farmers' markets. According to data provided by Lentura, around 49% of products are distributed through the box scheme, while 22% is sold in weekly farmers' markets. Households are the main customers, concentrating 59% of the total purchases, followed by schools (28%).

Finally, in relation to packaging, Lentura reuses materials in the production cycles that in a conventional model would end up as waste. Those materials are embedded in different types of packaging and sum up 145Kg of glass, 110Kg of paper and 30Kg of cardboard per year.

FIGURE 7. MATERIAL FLOWS



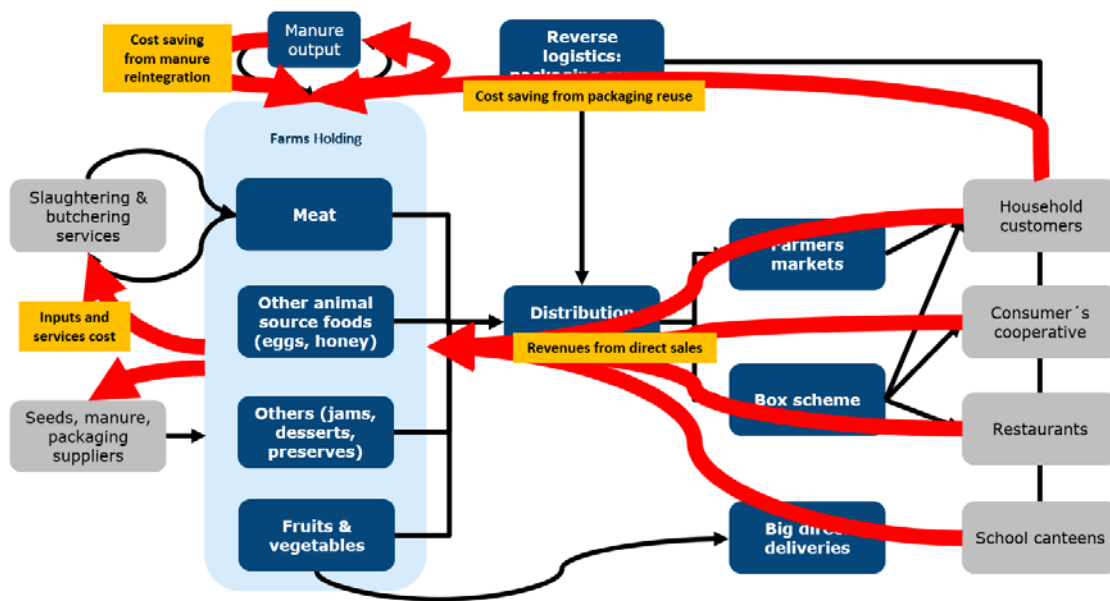
Source: own elaboration

3.1.2.2 Value Flow

The value flow in Lentura business model is shared between farmers and the different customer segments (Figure 8). Value flows also go from Lentura farmers to the main partners, such as the inputs (seeds and seedlings) suppliers and the slaughterhouse. The main outputs are meat, eggs and honey, legumes, fruits, vegetables and homemade manufactures (sauces, jams), which flow as a valuable food offering to customers. Accordingly, monetary value flows come from the different market segments to Lentura farmers. Box schemes represent the most important value flow while big direct deliveries to school canteens generate less income, partly since prices established for the schools are reduced.

Because of packaging recovery and reuse, as well as using manure from own livestock as a fertiliser, value flows are also represented by cost savings.

FIGURE 8. MONETARY FLOWS



Source: own elaboration

3.2 CEBM within the business context

After presenting the main features of Lentura business model that are supportive of a Circular Economy, the aim of this sub-section is to provide inferences and insights on how the contextual factors characterising the food system can be mapped out with CEBM patterns and characteristics. The different contextual aspects were assessed by Lentura representative as factors that affect, either in a positive or negative way, further development of circular business models such as the one Lentura represents.

Starting with obstacles and barriers to Lentura business model, the following political and legal factors were considered extremely important:

- The property rights associated with the patenting of seeds, which currently break with traditional knowledge of agriculture. Remarkably, Lentura tries to use its own seeds and seedlings.
- Measures linked to international trade agreements, which are more focused on food production at large farms than at small farms.
- The regulation of competition which, paradoxically, tends to concentrate economic offers and favour the large multinationals.

Other factors were highlighted by Lentura as barriers to their business model:

- Public subsidies tend to favour the linear economy, opting for the promotion of sectors that do not reduce the carbon footprint—these subsidies are also more difficult to reach by small producers. E.g.: subsidies to fossil fuels, CAP measures aimed at promoting and supporting conventional agriculture, etc.
- Standardization of materials and design. Referred to food, this usually means the necessity to offer products with high aesthetic values, which present standard and uniform features. This way, agroecological and artisanal food products are undervalued,

and often rejected by conventional large food retailers, affecting the consumers view on food.

With regards to economic and market factors, as well as technology and innovation systems factors, Lentura informant did not identify any important barrier. However, it must bear in mind that R & D efforts and funds are usually related to linear initiatives or conventional industry, which although not perceived by Lentura is a comparative disadvantage.

Among the socio-cultural factors, the only notable barrier refers to social attitudes towards water use, remarking the challenge to adopt more responsible measures due to potential water stress scenarios.

On the other hand, Lentura informant also identified a number of contextual factors that could facilitate the implementation of Lentura's model in case they were developed. Among them, political and legal factors are extremely important:

- The existence of a roadmap for the circular economy at the international, national and local levels, which would establish a framework to facilitate initiatives such as Lentura's.
- Green public procurement policies: public administration could use public tenders to support the diffusion of Lentura business model, for instance, prioritising the supply of natural food products produced in proximity to public canteens, hospitals or residences.

Although at a lower level of importance, the following factors were also considered as potential facilitators for the competitiveness and development of Lentura's circular business model:

- The setting of objectives and control of carbon emissions, linked to products transportation, at the national / regional level. This would facilitate a favourable conditions framework for short supply chains.
- A correct regulation aimed at facilitating self-supply.
- The existence of mandatory return food packaging programmes, EPR alike.
- Differentiated VAT taxation for products with lower environmental impact.

An important number of factors within the economic and market realm were also considered as extremely important potential enablers:

- Availability of prices of circular versus non-circular raw materials. That could play a key role in the purchasing decision.
- The existence of a favourable environment towards the circular economy, facilitating access to materials and design adapted to the needs of small production experiences.
- The existence of a relevant and expanding market segment for the circular or sustainable-oriented economy, especially at the local level.
- An adequate infrastructure for recovery and recycling: packaging, recyclable bags, boxes, glass containers, etc.
- The existence of ICT infrastructure and networks: use of instant messaging applications for producers for order management, e-mail for consumers, general communication's blog, etc.

Extensive information on the raw materials used, concerning seedling nurseries. With regards to the technology and the innovation system context, Lentura representative highlighted the importance of two factors:

- The existence of appropriate technologies for the circular economy, such as adapted and reusable packaging.



- To create a two-way training and education in producer/consumer activities related to the circular economy, and to improve the relationship between them.

Finally, socio-cultural factors were considered highly important enablers / drivers by Lentura informant:

- The structure of the habitat of the rural/urban population, which is very dispersed in Galicia, and where urban and rural spaces intertwine, facilitates interaction and close relations between farmers and consumers.
- The existence of an ageing population in the rural areas, far from being a barrier, is considered a facilitator for Lentura. Old farmers usually preserve much of the knowledge on traditional agricultural practices, which could facilitate young people's access to farming based on agroecological principles.
- Social attitudes towards waste and recycling in the countryside, highlighting the sense of reuse that has traditionally been present in rural societies.

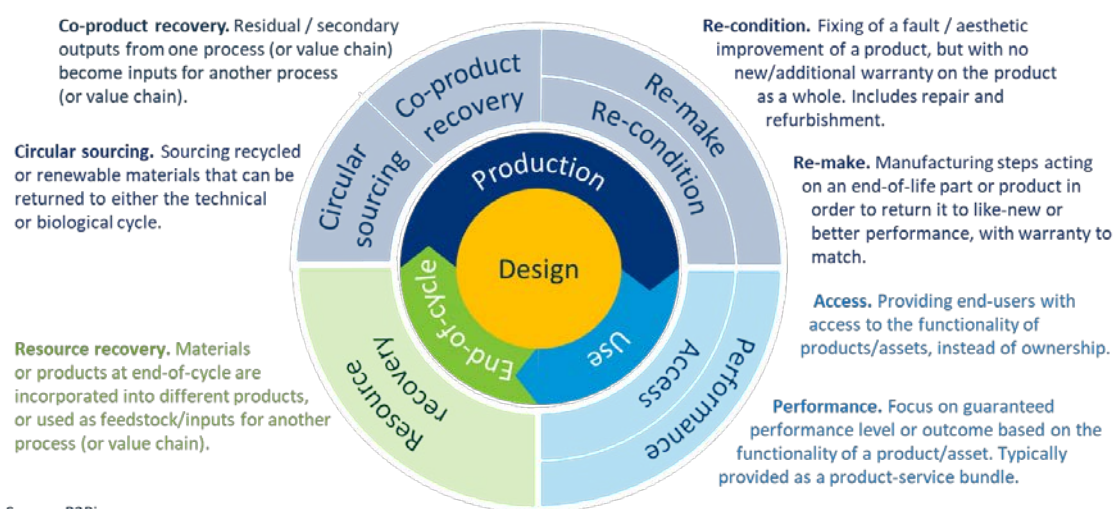
Further development of Lentura's model, would be also supported by sociocultural factors:

- Attitudes towards environmentally responsible production and consumption in the countryside. Those attitudes already assumed by Lentura facilitate trust in food.
- Increased preference for brands/products and green services by the country's consumers, to which the importance of the concept of local product and the concept of proximity should be added.
- Social movements could exert pressures around environmental problems, and try to guide policies in the various centres of global, European and national decision making.

3.3 Business model circularity assessment

This section provides an assessment of Lentura's circular business model. It begins with a description of the 7 Circular Economy Business Model Patterns identified by the R2Pi project (Figure 9) and describes which of these patterns are utilised by the case organisation. The business model assessment was conducted through interviews and e-mail communication with a Lentura representative.

FIGURE 9. CIRCULAR ECONOMY BUSINESS MODEL PATTERNS

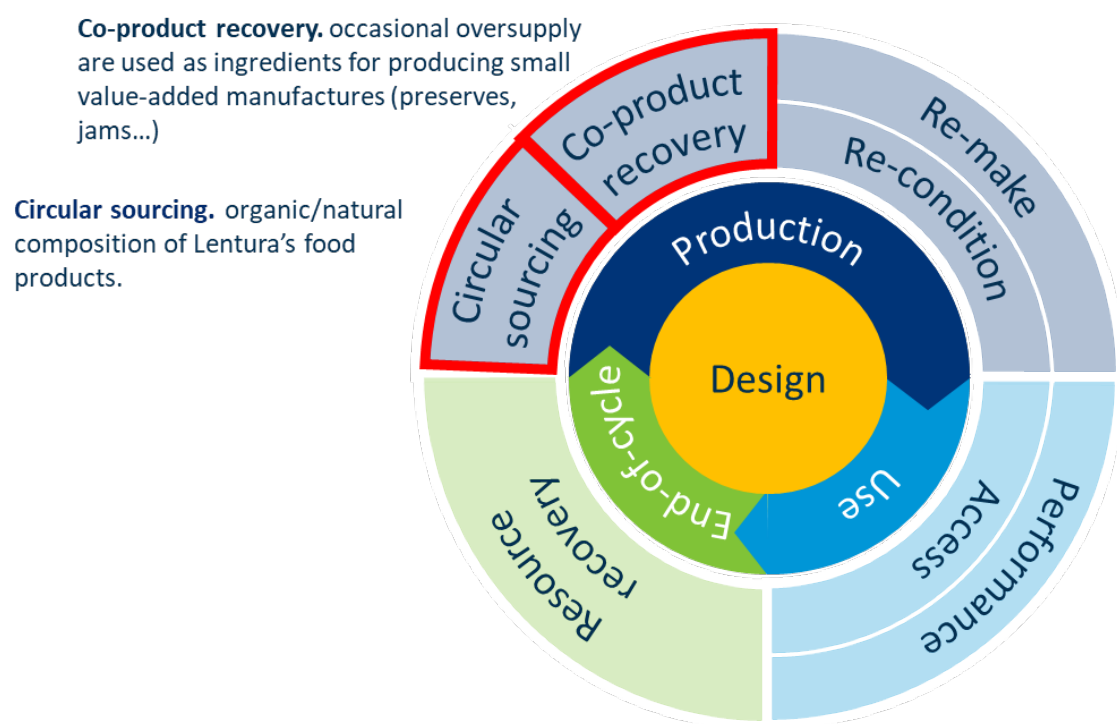


In this section, the circularity of Lentura's business model is evaluated, analysing different aspects related to the organisation's circularity. The assessment goes from a general point of view to more specific aspects such as financial and non-financial outcomes derived from its circularity. Finally, there is an analysis of the strengths, weaknesses, opportunities and threats (SWOT).

3.3.1 Circularity assessment

Following the patterns identified in Figure 9 it is possible to derive that, in general, goods and services offered by Lentura match with two of them:

FIGURE 10. CEBM PATTERNS OF LENTURA



Source: own elaboration

3.3.1.1 Circular sourcing

This pattern can be observed in the organic/natural composition of Lentura's food products as well as in the use of recyclable packaging (paper bags, glass jars, egg cartons, etc.). In the same way, Lentura's organic farming practices and their commercialisation in proximity allow to extend the expiration date in the place of consumption.

3.3.1.2 Co-product recovery

Another circular aspect is related to the use of food for producing preserves. Those food products that are not sold directly as fresh products, and especially in order to avoid food waste, are used as ingredients for producing small value-added manufactures, such as jams and preserves.

Besides that, organic waste and manure produced at the farms are introduced in the farming cycle as fertilisers.

Due to the close relationship with final consumers, Lentura is also able to recover used packages, which would be finish as waste otherwise. After a careful hygiene process, those packages are reused by Lentura and consumers.

3.3.1.3 Overall circularity assessment

Lentura's value proposition is focused on a natural food offering. Therefore, it means that the organisation and the circularity of the business model are mostly related to an organic matter. Therefore, the main features of circularity have to do with use, through consecutive cascades, of food products, while returning to the biological production cycle at the end of life.

As described in previous paragraphs and in sub-section 3.1., Lentura focuses its model on food, Lentura's operational waste streams tend to be reintroduced into its own activity and therefore do not channel them in open cycles, but rather build quasi-closed systems. Notwithstanding, most of the food waste occurs in the consumption phases, and Lentura does not have in place a food waste management service. Due to the decentralised and low scale of food waste generation based on Lentura network, it seems more logical that the public administration continues to be responsible for managing this waste on a local or regional basis, also promoting composting to the extent possible and thus, closing biological cycles. In this sense, although there is a large infrastructure for waste management in Galicia, it is still very limited in its effectiveness for the recycling of waste. This also happens in the case of organic waste; food waste does not reach the end that is conducive to a circular economy within the current ways.

Lentura does not offer economic incentives for packaging recovery; however, the association has a high rate of recovery due to the relationships of trust and closeness that they maintain with their customers. The logistics system allows for taken back empty packages, which are properly clean and then reused.

In short, Lentura's activity is characterized by dealing with organic matters. In this sense, among CEBM's production standards, the one that best suits this organisation is "circular sourcing", since the association offers products with a renewable main material base that is easily reintegrated into biological cycles. Also, the association's dynamics include some characteristics related to "co-product recovery", since both livestock excreta and the packaging they use in their products and activities are reused as inputs for new production cycles.

3.3.2 Financial and non-financial outcomes assessment

In this section, financial and non-financial outcomes obtained by Lentura due to the implementation of the above mentioned circular economy business model patterns are analysed.

Beginning with the financial outcome assessment, there are three main sources of revenues and cost savings:

- Most revenues come from food commercialisation in proximity;
- The recovery of packages allows for cost savings;
- The use of organic fertilisers obtained as co-products of Lentura main activities represent another source of cost savings.

As described in previous sub-section, Lentura recovers the great majority of the packages used. On average, based on the stable relations and on the consumers as well as the organisation efforts, 65% of the paper bags used, 80% of the glass jars, 85% of the cardboard boxes (fruit containers) and more than 100% of egg cartons are recovered. With this process of recovery and



reuse, the farmers' association saves around €4,000 annually, mostly due to cardboard boxes' recovery.

Regarding the use of organic fertiliser, approximately a 60% is obtained by Lentura own processes and a 40% is acquired externally from other farms. Taking into account that organic fertiliser purchased in 2017 amounted to €1,260 in, the avoided cost was approximately of €1,980 (based on using Lentura's own manure from animals and organic waste).

Direct commercialisation without intermediaries in proximity is the most important source of revenues, which highly influences the financial outcome of Lentura farmers. In a conventional food supply chain in Spain, farmers receive an average of 22% of the final sale price, while distribution retailers obtain over 60% (García, 2016). In opposition, Lentura's farmers retain 83.45% of the sale price while the internal structure of Lentura only retains a 16%. In addition, this alternative food model implemented by Lentura allows maintaining higher sale prices than those usually obtained by a farm that works for large distributors (Table 1). Moreover, prices are usually multiplied by 4.5 times from the farm to the consumer (García, 2016). In the case of Lentura the price is only multiplied by 1.2.

TABLE 1. AVERAGE PRICES RECEIVED BY FARMERS

| | Potato (€/Kg) | Lettuce (€/Kg) | Onions (€/Kg) | Oranges (€/Kg) | Lemons (€/Kg) |
|---|------------------|-------------------|------------------|-------------------|------------------|
| Average price received by Spanish farmers (2016) | 0.3201 | 0.3002 | 0.1940 | 0.2201 | 0.6662 |
| Price received by farmers in Lentura (2018) | 0.7837 | 0.6270 | 1.5674 | 1.2539 | 1.5674 |

Source: own research based on MAPAMA and Lentura data

There are numerous non-financial outcomes obtained thanks to the application of the circular economy principles: proximity, close relationships, transportation reduction, reduction of materials consumption, reduction of fuels consumption, etc.

As far as social outcomes are concerned, the following aspects can be highlighted:

Firstly, due to commercialisation in proximity, the relationships between Lentura farmers and the consumers are very close, which favour trust among them. Farmers and consumers know each other and can interact, even beyond the economic exchange. Each consumer knows exactly what farmers have produced the food they are purchasing. Those benefits have been extensively evidenced in the literature (Marsden, Banks, & Bristow, 2000; Kirwan, 2006; Fabbrizzi, Menghini, & Marinelli, 2014).

At the same time, the power relationships in this supply chain are changed and favour farmers and consumers' empowerment. The decision-making capability that farmers and consumers hold is much greater than that which they would have in a long food supply chain. In conventional long supply chains, intermediaries and large food retailers usually have strong power (García, 2016), which makes them able to squeeze farmers according to market oscillations. In opposition, the 83% final price returns to Lentura's farmers in comparison to the 22%, which is perceived by Spanish farmers on average.

In addition to the re-articulation of power in the value chain and the benefits achieved by social proximity, the other great non-financial outcome associated with Lentura business model is the support to a healthier and more natural diet (fresh food and without chemical additives). In addition, farming processes based on organic practices, guarantee that farmers are not exposed to agrochemical products, which highly affect farmers' health in very industrialised and highly intensive agricultural systems. It is important to take into account that agricultural production is the stage where most of environmental impacts along the supply chain are produced. For example, about 10-12% of global GHG emissions are directly related with agri-food primary production while the whole agri-food system concerns over 25-30% (OXFAM, 2014; Weetman, 2016). However, organic agriculture is not only unrelated to global warming, but it is also recognized as having broad potential as a carbon sink (Soil Association, 2009).

Moreover, the proximity practiced by Lentura directly reduces the use of fossil fuels and pollutant emissions generally associated with food miles of conventional and long supply chains (Hill, 2008; Vermeulen et al., 2012). These energy and emissions savings are added to the reduction in the consumption of materials that Lentura achieves with the recovery of its packaging. Annually, this would save over 3,000 paper bags, 1,000 cardboard egg cups (12 units), 1,300 glass jars, and 3,000 cardboard boxes (fruit bowls)—compared to a fictitious Lentura model that followed the "throwaway" model. Therefore, the difference between applying principles of circular economy and those related to the linear model is remarkably clear in the consumption of materials, and more specifically of packaging.

In short, Lentura's circular initiatives, based on the naturalness of its products and the proximity of its activity, bring clear and diverse benefits beyond the purely economic ones: it increases social relations, contributes to improving environmental conditions, brings health benefits, rebalances market power in the supply chain, etc.

3.3.3 SWOT analysis

Lentura's SWOT analysis started by the application of a questionnaire aimed at detecting the key strengths and weaknesses of the organisation. After this, and based on the previous context and circularity analysis, the goal of the next step followed was the identification of opportunities and threats. Key findings are shown in a summary graph (SWOT) at the end of this section.

3.3.3.1 Value proposition

The first strength that stands out from Lentura's value proposition is the high degree of customer's satisfaction regarding the organisational model and the products provided; this is an aspect of great relevance for maintaining a long-term demand. On the other hand, it is still true that Lentura is not able to satisfy part of the needs required by some customers, namely, the full food demand of school canteens (large consumers). Likewise, Lentura's value proposition does not tend to benefit from strong network effects, although this is something that does not tend to occur in sectors such as food.

3.3.3.2 Cost / revenue

The organisation also has comparatively better revenue margins and a beneficial cost structure than other primary producers. This occurs thanks to a model that shortens the value chain, avoiding intermediaries and that is based on fixed annual prices—in relation to the work performed and not to the immediate flows of supply and demand in the market. On the other hand, some weaknesses of Lentura are: the inability to capture economies of scale due to its productive and marketing model (labour-intensive and proximity); a medium level of income predictability due to supply uncertainties; and the lack of a financing model that would allow



them to operate and earn income before meeting the costs of its business model—for instance, as it happens in Community Supported Agriculture (CSA) schemes.

3.3.3.3 Operating model

In terms of Lentura operating model, key strengths are related to its main activities, as well as to relationships with some key partners, which effectively support the circular economy. And this supports the attractive for Lentura's customers. Another advantage is the fact that the essential characteristics of Lentura's model are not easily imitated—producing organic food and selling it through a box scheme, despite being a simple idea, requires significant efforts in order to implement it in our society and maintain it in the long term.

3.3.3.4 Customer interface

Regarding Lentura's customers, it should be noted that it has a group of very loyal consumers. This aspect has its counterpart in Lentura's ability to attract new consumers, a task that is not easy for the organisation. In this sense, it should be noted that they do not carry out any type of marketing campaign. The high loyalty of consumers is influenced by commercialisation channels which clearly show the value proposal that Lentura offers. The effectiveness is evident in the objectively close relationship between the association and its customers, with no intermediaries between them. Lentura's relationships represent precisely this proposal of value in proximity, which aligns with the expectations of the customers themselves.

The mainstream economic model has tended to homogenize food systems and keep away their actors. Opposite to that, Lentura manages to fill with social content food relations (once again). The close and highly relational environment is undoubtedly the main strength of Lentura, together with its organic products.

3.3.3.5 Opportunities and threats

After analysing the internal factors of the farmers' association, and based on previous context analysis, the external factors that affect Lentura in a significant way, both as opportunities and as threats, are remarked next. Regarding threats: firstly, the socioeconomic and demographic factors. This could imply loss of producers and the associated knowledge. Secondly, the high competition of conventional food system. E.g.: growing presence of food products classified as organic or simply with some eco-friendly characteristic.

Among the opportunities offered by the context of Lentura highlights the wiliness of new producers and consumers more distant from the current operating ratio of the association to participate with it. Although to take advantage of this market opportunities Lentura should relax its strict conception of geographical proximity (at the moment 20-30 km).

These opportunities also include recent technological trends in relation to social networks and food applications. This could be used to increase the possibilities of connection between producers and consumers, either commercially or simply through advertising.

Lentura association is in a good position at the moment, given their ambition. However, addressing the mentioned challenges and opportunities would push the association towards a next level, contributing to upscale the business model and expand their beneficial outcomes.

The following table summarises the main Strengths, Weaknesses, Opportunities and Threats identified after the analysis of the organisation.

FIGURE 11. LENTURA SWOT ANALYSIS

| | |
|---|---|
| <p>Strengths</p> <ul style="list-style-type: none"> • Close and highly relational environment with high loyalty customers • Circularity: natural products, reuse of waste, minimization of deliveries... • Upper/cost revenue/cost margins. | <p>Weaknesses</p> <ul style="list-style-type: none"> • Insufficient production vs demand • Strict proximity • Difficulty in attracting new customers • Deficient marketing |
| <p>Opportunities</p> <ul style="list-style-type: none"> • Willingness of new producers and consumers to participate in short food supply chains • Exploitation of the potentialities of social networks and food apps | <p>Threats</p> <ul style="list-style-type: none"> • Socioeconomic/demographic trends • Loss of traditional knowledge • High competition in conventional food system |

Source: own elaboration

3.3.4 Final assessments

Along section 3 the circular business model implemented by Lentura has been assessed through different dimensions: building model components, effects of contextual factors, circularity features as well as SWOT. In this final sub-section, the most outstanding points will be highlighted, discussing the way forward for the organisation and deriving enablers and barriers applicable to the business model.

The analysis of Lentura has allowed analysing the characteristics of an alternative food value chain building upon the values of organic farming practices and marketing in proximity through direct channels and without intermediaries. This social initiative implements the principle of a Circular Economy with regards to biological type resources. That means that food is produced on a natural basis, avoiding the use of external inputs and reducing the consumption of scarce resources as much as possible. In addition, food is marketed in proximity, which means that the minimisation of resources use is also targeted along the supply chain: in food distribution – involving food kilometres and packaging. Due to the biological nature of the resources managed, Lentura also achieves a good circularity performance when waste is returned to natural cycles, closing loops for instance, through the use of manure and food waste produced at the farm level.

The success of the initiative is mainly due to the shared and committed vision of both farmers and consumers, with this alternative model. In this sense, it is fair mentioning that Lentura does not aims at increasing its size, neither the scale of production nor the number of consumers. Notwithstanding the potential up scalability and replicability of the model should take into account different aspects, which have been uncovered through Lentura research.

Other organisations, both for- and not for profit, could replicate the business model, even setting more ambitious objectives. Especially, aspects such as the expansion of production to give greater stability to the local food supply, and also reaching agreements with specific customers segments for obtaining compost from food waste are interesting and feasible possibilities. For instance, large consumers such as school canteens, which generate large quantities of organic waste, could provide organic compost allowing for closing the loop and achieving further savings in fertilisers for farms.

Based on lessons learned from Lentura case study a few factors clearly emerge as enablers of the business model:

- The shared vision and commitment of farmers with natural and local food;
- The apparently increased awareness of a growing part of the population on food-related aspects such as sustainability, healthy eating and local and equitable development needs to be highlighted;
- The proximity between urban centres and rural areas of agricultural production.

On the other hand, the business model built around organic farming and short food supply chains is hindered by the existence of some remarkable factors:

- The general lack of a greater, consistent food education is a significant barrier. This prevents the full potential of local food supply chains from being exploited and also moving to more advanced models based on environmental and social sustainability;
- Another important barrier limiting the spread of circular food value chains is the lack or poor adaptation of the regulation to support short food supply chains and health standards.
- The difficulty of small farmers to gather sufficient land, which allows them to offer a consistent food supply.
- The general bias of research and technology development towards industrial agri-foods, which limit the possibilities of improving organic farming ventures and its diffusion.

It should also be noted that, although the ideas on which Lentura is based are simple, their implementation requires a specific organisational capacity and social education. Its replication or transfer potential is high, given that it does not require large capital outlays to start up and that in principle there are multiple urban environments with peri-urban or rural environments nearby that produce food. However, it is necessary a big effort to coordinate certain forms of production, highly efficient logistics and, finally and essential, the attraction and maintenance of customers with high levels of socio-environmental awareness and food education. Making an innovative, circular and highly social business model out of such simple idea will depend on these aspects.



4 Discussion & Conclusions

This report has offered a deep analysis of Lentura circular business model. Lentura is a farmers' association that produces and delivers natural food products directly to final consumers, with proximity as a cross-cutting concept. This social initiative organised by a farmers' association implements circular principles around a value proposition that stands for an alternative food system with a high relational content. Thus, biological resources are eco-efficiently managed and used on the basis of a close interaction between farmers and food consumers.

The research conducted allows for highlighting the main barriers and enablers that may affect business models organised around organic farming practices and short food supply chains.

As an short food supply chain, the development of Lentura and other similar ventures is clearly constrained by the dominant food system. Economic and market factors, technology and system innovation factors are clearly dominated by the interests of the conventional agri-food. In addition, conventional competitors are including local and organic food supply in their offer. Regarding the policy framework, there are a number of measures included under the second pillar of the CAP that are aimed at promoting organic farming and short food supply chains. Notwithstanding, the framework is still very much focused on conventional medium and large farms. Besides, the adaptation of EU hygiene regulation on the national and / or regional level may restrict the emergence, maintenance and growth of activities of small farmers and food manufacturers via excessively strict hygiene requirements and related commercialisation. Moreover, the general lack of food education among the population, despite certain progress, remains a burden on the prosperity and proliferation of local food systems.

Based on insights gained through Lentura case study, it is fair to state that a strong commitment of producers and consumers with the alternative model emerge as a clear enabler. In the analysed case, also local government administrations have played an important role supporting the development of the initiative, facilitating financial subsidies and infrastructure. Therefore, circular business models based on organic farming practices and local food delivery need to remark the importance of local stakeholders.

The future replication and transfer of a CEBM like Lentura's depends to a large extent on aspects such as these. Although it is based on simple ideas and does not require large capital investments for its implementation, it requires significant organisational skills and the recruitment and maintenance of a consumer which usually has good food education.

Policy recommendations

In short, it is clear that the government administrations (regional, national, and European) still need to take consistent measures to avoid weighing down the evolution of circular and short food supply chains. The analysis conducted in this case study highlights the need to adapt hygiene requirements to the level of development and type of commercialisation of the activities implemented, and to establish clear regulatory frameworks. Some other particular policy recommendations are:

- From a demand-side perspective, to improve food education among the population. This would allow consumers to fully appreciate more sustainable, proximity and healthy foods. In addition, it would allow producers who offer this type of food to see their value proposals fully rewarded.
- To develop education and training programs for farmers to boost the number of agricultural businesses capable of organising and implementing structures and/or procedures for short supply chains.



- Increasing organic farming and short food supply chains among CAP and R&D system priorities of funding.
- Adapting the tax regime aimed to differentiate conventional food products from sustainable ones would support the modification of consumption patterns.
- Regional and local public administration could support supplying food to collective canteens, for instance introducing circular and green criteria in public tenders.
- Promoting compost of organic waste at the source (households, communities) by local administrations would support further circularity.



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Appendix A: Lentura business context analysis tool

| DRIVER | | | | | | Please, rank the following according to how much of a driver / barrier you think they represented for implementing your CEBM (put an X where appropriate) | BARRIER | | | | | |
|----------------------|--------------------|----------------------|----------------|---------------------|-----|---|----------------------|--------------------|----------------------|----------------|---------------------|-----|
| Not at all important | Slightly important | Moderately important | Very important | Extremely important | N/A | | Not at all important | Slightly important | Moderately important | Very important | Extremely important | N/A |
| X | | | | X | | CE roadmap / initiative at the national / regional / local level | | | | | | |
| X | | | | | | Setting of end goals and monitoring (CO ₂ , noise, movements) at the national / regional level | | | | | | |
| | | | | | | Activity permit (license) | | | | | | |
| | | X | | | | Warranties law (e.g. second-hand products) | | | | | | |
| X | | | | | | Intellectual property rights (e.g. components susceptible of being reused) | | | | | | |
| | | | | | | International trade agreements (e.g. requirements in certain markets) | | | | | X | |
| | | | | | | Dramatic change in a target market regulation (e.g. banning the use of plastic bags in China) | | | | X | | |
| | | | | | | Competition regulation (e.g. positive discrimination for CE products is not permitted in public procurement) | X | | | | | |
| X | | | | | | Public subsidies that support linear economy (e.g. subsidies to fossil fuels, car purchase incentives) | | | | | | |
| | | | | X | | Resource efficiency targets, requirements of reusing percentage of components and raw materials in new products | | | | | | |
| | | | | X | | Waste regulation, recycling regulation, water regulation, energy regulation and choice restriction | | | | | | |
| | | | | X | | End of life regulations | | | | | | |
| | | | | X | | Mandatory take-backs | | | | | | |
| | | | | X | | Extended Producer Responsibility | | | | | | |
| | | | | X | | Material and design standards (national and across industries) | | | | | | |
| | | | | X | | Controls and penalties (e.g. controls and sanctions on the use of specific products) | | | | | | |
| | | | | X | | Fiscal measures (green taxes): land-value taxes, value-extracted tax, product levy and recovery rewards | | | | | | |
| | | | | X | | Differentiated VAT rates (e.g. products with high recycled content included among VAT reduced goods) | | | | | | |
| X | | | | | | Green public procurement (e.g. performance procurement by public sector) | | | | | | |
| | X | | | | | Public subsidies for eco-innovation, eco-design | | | | | | |
| | X | | | | | Public support for demonstration and commercialisation of innovation in Circular Economy (technology platforms, pre-commercial procurement, lead markets) | | | | | | |
| | | | | X | | Availability or prices of raw materials that support linear economy (water and energy included) | | | | X | | |
| | | | | X | | Availability or prices of raw materials and products that support CE | | | | | | |
| | | | X | | | General economic "health" of incumbent companies in a sector (crisis, decline, stability, growth) | | | | | | |
| | | | | X | | Competition trends in the market | | | | | | |
| | | | X | | | CE-supportive business environment (technology providers, advanced services, eco-design businesses...) | | | | | | |
| | | | X | | | Relevant and expanding CE / environmentally oriented market segment in the country / region | | | | | | |
| | | | | X | | Market purchase capacity | | | | X | | |
| | | | X | | | Suitable infrastructure for recycling and recovery / other (e.g. supporting shared use) | | | | | | |
| | | | X | | | IT-infrastructure (supporting transparency and information sharing; joint collection systems; match-maker mechanisms) | | | | | | |
| | | | | X | | Extensive raw materials information service | | | | | | |
| | | | X | | | Funding opportunities / venture capital for CE-related investment | | | | | | |
| | | X | | | | (Green) lending programmes from banks | | | | | | |
| | | X | | X | | Apropriated technologies for CE | | | | | | |
| | | X | | | | Major technological trends in the sector; new sectoral developments | | | | | | |
| | | X | | | | R&D capacities and strengths (Innovation agency, university research groups supportive to CE) | | | | | | |
| | X | | | | | R&D capacities and strengths in green energy | | | | | | |
| | | X | | | | Public support for CE-related R&D (new materials, new products/services, supply chain resource tracking) | | | | | | |
| | | X | | | | Training in CE-oriented activities | | | | | | |
| | | | | X | | Rural vs urban distribution of population | | | | | | |
| | | | | X | | Ratio of young vs old population | | | | | | |
| | | | | | | Social attitudes towards waste and recycling in the country | | | | | X | |
| | | | | | | Social attitudes towards eco-friendly production and consumption in the country | | | | | X | |
| | | | | | | Social attitudes towards water use in the country | | | | | X | |
| | | | | | | Social attitudes towards energy use in the country | | | | | X | |
| | | | | X | | Social movements pressure regarding environmental problems (NGOs, civil society) | | | | | | |
| | | | | X | | Preference for green brands / products, services by consumers in the country | | | | | | |
| | | | | X | | Perception of environmental problems by businesses in the sector / country | | | | | | |



Appendix B: Lentura business model circularity

Circular economy status and objectives

| | | | S = Status today O = Objective <u>within 3 yrs</u> | | | | | | | |
|---------|----------------|---|--|-----|---|---|---|---|---|---|
| | | | Tending towards LINEAR model | N/A | 1 | 2 | 3 | 4 | 5 | Tending towards CIRCULAR model |
| PRODUCT | 1 | We have not characterised the identity of our products in terms of generic materials (e.g., aluminum, polyethylene, steel etc.) | | | | | | X | | The product is 100% characterized by its generic materials (e.g., aluminum, polyethylene, steel etc.) and/or product categories and names (e.g., coatings, paints, detergents, seating furniture). |
| | 2 | We have not assessed the chemical composition of materials (recycled materials included) used within our product. | | | | | | X | | We have fully assessed the chemical composition of all materials (recycled materials included) used within our product. |
| | 3 | We do not seek to use recycled materials in our product | | | | | | X | | We maximise the use of recycled materials from pre- or post consumer waste in our product and source these from outside of the manufacturer's facility. |
| | 4 | We do not seek to use third party co-product or waste streams as an input to our own production | | | | | | X | | We maximise the use of third party co-product or waste streams as an input to our own production |
| | 5 | We do not seek to use remanufactured, refurbished, or repaired parts and components within our products | X | | | | | | | We maximise the use of remanufactured, refurbished, or repaired parts and components within our products |
| | 6 | We do not not seek to use rapidly renewable materials in our product | | | | | | X | | We maximise use of rapidly renewable* materials in our product |
| | 7 | We do not not seek to use compostable/biodegradable materials in our product | | | | | | X | | We maximise use of materials in our product that are commonly known to biodegrade or are able to undergo biological decomposition |
| | 8 | We do not consider the 'recyclability' of materials used in our products | | | | | | X | | We only use materials in our products that are proven to be technically and economically recyclable (e.g. non-toxic, separatable into material streams, etc.) |
| | 9 | Planned obsolescence is built into product design | | | | | | X | | Product is designed for durability |
| | 10 | Product technical lifetime is below industry average | X | | | | | | | Product technical lifetime is above industry average |
| | 11 | Product functional lifetime is below industry average | | | | | | X | | Product functional lifetime is above industry average |
| | 12 | Product warranty period is below industry average | X | | | | | | | Product warranty period is above industry average |
| | 13 | Product is not designed for disassembly to enable component/material recovery or reuse; nor is it biodegradable | | | | | | X | | Product is designed to be economically disassembled enabling component/material recovery or reuse; OR is biodegradable with no further intervention needed to reclaim the nutrients |
| | 14 | Product is not designed with the intention to return to a 'technical' or 'biological' cycle, nor is there a defined plan for product recovery and reutilization. | | | | | | X | | Product designed to return to a 'technical' or 'biological' cycle, and a plan for product recovery and reutilization is defined. |
| | 15 | Product is not designed to be repairable | X | | | | | | | Product designed to be economically repairable (by user or third party) |
| | 16 | Product not designed to be upgradable | X | | | | | | | Product designed to be upgradeable, adapting to changing customer needs (e.g. by being modular, via software upgrades, etc.) |
| | BUSINESS MODEL | 17 | Re-manufacturing is not taken into account in product design | X | | | | | | |
| 18 | | Revenue driven mainly by asset sale | | X | | | | | | Revenue driven mainly by monetising usage and/or performance of asset |
| 19 | | Value exchange mainly focused on driving a product sale transaction (e.g. competitive price) | | | | | X | | | Value exchange focuses on customer lifetime benefit (including reducing/controlling cost of ownership; asset performance) |
| 20 | | Value proposition focuses on the product | | | | | X | | | Value proposition is positioned as a service (including product/service bundle) |
| 21 | | Value proposition does not include maintenance or other value-added services | X | | | | | | | Value proposition includes bundled maintenance or other value-added services |
| SYSTEM | 22 | We do not seek to reuse and put back into our production the co-products or waste streams from our operations. | | | | | | X | | We maximise the reuse of co-products or waste streams from our operations, putting them back into our production. |
| | 23 | Repair services and availability of spare parts are not actively established | X | | | | | | | Repair service network and spare parts are actively established in the market |
| | 24 | Re-manufacturing services not actively established in market | X | | | | | | | Re-manufacturing services actively established in market (own, or third party) |
| | 25 | We do not seek to reuse co-products or waste streams from our operations as an input to third party production (e.g. through direct or indirect supply relationships) | | | X | | | | | We maximise the reuse of co-products or waste streams from our operations by supplying them to third parties as an input into their production (e.g. through direct or indirect supply relationships) |
| | 26 | We do not have in place a take-back or recovery scheme for our products at end-of-life (own or via a third party) | X | | | | | | | We have in place a take-back or recovery scheme that fully covers all our products at end-of-life (own or via a third party, e.g. EPR arrangement) |
| | 27 | We do not have in place a take-back or recovery scheme for components our products at end-of-life (own or via a third party) | | | | | X | | | We have in place a take-back or recovery scheme that fully covers all components from our products at end-of-life (own or via a third party) |
| | 28 | We do not have in place a recycling arrangement for materials within our products at end-of-life (own or via a third party) | | | | | | X | | A recycling infrastructure is widely available for this type of product, and the material is already commonly recycled in practice with no special disassembly required |
| | 29 | We do not provide incentives to return our product at end-of-life | | X | | | | | | We provides incentives to return our product at end-of-life (e.g. deposit, exchange, cash) |
| | 30 | We have no visibility on the actual effectiveness of our product take-back at end-of-life | X | | | | | | | We have full visibility on the actual effectiveness of our product take-back at end-of-life |
| | 31 | We have no visibility on the destination of our products taken back at end-of-life | X | | | | | | | We have full visibility on the destination of our products taken back at end-of-life |
| | 32 | We have no visibility on the actual effectiveness of material recycling from our products recovered at end-of-life | | | | | X | | | We have full visibility on the actual effectiveness of material recycling from our products recovered at end-of-life |
| | 33 | We have no visibility on the destination of materials recycled from our products at end-of-life | | | X | | | | | We have full visibility on the destination of materials recycled from our products at end-of-life |

Notes

- 6 'Rapidly renewable' is defined as being harvested in cycles of 10 years or fewer, or from controlled growth forestry plantation such as FSC and PEFC]



Appendix C: Lentura business model strengths & weaknesses

Business model diagnostic

| | | Weaknesses | | | | | Strengths | | | | |
|---------------------------|--|------------|---|---|---|---|-----------|--|--|--|--|
| | | N/A | 1 | 2 | 3 | 4 | 5 | | | | |
| Value Proposition | | | | | | | | | | | |
| | 1 Our value proposition leaves significant customer segments' needs unmet | | | | x | | | Our value proposition fulfils all significant needs of target customer segments Customer satisfaction is high Our value proposition has strong network effects Our charging and pricing models effectively meet customer needs and expectations We fully capture 'sustainability value' created for customers | | | |
| | 2 Customer satisfaction is low | | | | | x | | | | | |
| | 3 Our value proposition has no network effects | | | x | | | | | | | |
| | 4 Our charging and pricing models don't meet customer needs and expectations | | | | | | x | | | | |
| | 5 We do not capture 'sustainability value' created for customers | x | | | | | | | | | |
| Cost/Revenue | | | | | | | | | | | |
| Margins | 6 Our margins are low compared with competitors | | | | | x | | Our margins are high compared with competitors Our revenues are predictable Each sale generates follow-on recurring revenue / repeat purchases We earn revenue before incurring costs of goods/services sold Our costs are predictable | | | |
| | 7 Our revenues are unpredictable | | | | x | | | | | | |
| Revenues | 8 Each sale requires additional effort | | | | | x | | | | | |
| | 9 We earn no revenue before incurring costs of goods/services sold | | x | | | | | | | | |
| Costs | 10 Our costs are unpredictable | | | | | x | | Our product cost structure is substantially lower than that of competitors Our service cost structure is substantially lower than that of competitors Our cost structure has high economies of scale Our cost structure is asset light and costs are mainly variable Our cost to serve customers is aligned with customer segments | | | |
| | 11 Our product cost structure is substantially higher than that of competitors | | | | | | x | | | | |
| | 12 Our service cost structure is substantially higher than that of competitors | | | | | | x | | | | |
| | 13 Our cost structure has low economies of scale | | | | x | | | | | | |
| | 14 Our cost structure is asset-heavy and costs are mainly fixed | | | | | x | | | | | |
| | 15 Our cost to serve customers is misaligned with customer segments | | | | | | x | | | | |
| Operating Model | | | | | | | | | | | |
| Key Activities | 16 Our key activities can be easily copied by competitors | | | | | x | | Our key activities are hard to copy by competitors Our key activities easily scale with growth without needing significant investment Our key activities match the core competencies we need Our key activities fully support circular economy within our business model | | | |
| | 17 Our key activities need significant investment in order to scale with growth | | | | | x | | | | | |
| | 18 Our key activities do not fulfil the core competencies we need | | | | | x | | | | | |
| | 19 Our key activities poorly support circular economy within our business model | | | | | | x | | | | |
| | 20 Our key resources do not meet the needs of our business model | | | | | | x | | | | |
| Key Resources | 21 Our key resources poorly support circular economy in our business model | | | | x | | | Our key resources fully support the needs of our business model Our key resources fully support circular economy in our business model Our key resources are very hard to build or acquire by competitors | | | |
| | 22 Our key resources can be easily built or acquired by competitors | | | | x | | | | | | |
| | 23 Key partners do not provide us with competitive advantage | | | | | x | | | | | |
| Key Partners | 24 Key partners poorly support circular economy within our business model | | | | | x | | Key partners provide us with exclusive competitive advantage Key partners enable circular economy within our business model Key partners contribute value to us for free Customers contribute value to us (for free) | | | |
| | 25 Key partners do not contribute any value to us for free | | | | | x | | | | | |
| | 26 Customers do not contribute any value to us | | | | | x | | | | | |
| Customer interface | | | | | | | | | | | |
| Customer Segments | 27 We do not understand the full potential value that could be created for customers | | | | | x | | We understand the full potential value that could be created for customers Customer loyalty is high Customer churn is low (customer retention is high) New customer acquisition rate is high Our market share is growing | | | |
| | 28 Customer loyalty is low | | | | | x | | | | | |
| | 29 Customer churn is high (customer retention is low) | | | | | x | | | | | |
| | 30 New customer acquisition rate is low | | | | x | | | | | | |
| | 31 Our market share is shrinking | | | | | x | | | | | |
| Customer Channels | 32 Our customer channels do not effectively communicate our value proposition | | | | | x | | Our customer channels effectively communicate our value proposition Our customer channels effectively deliver our value proposition Our customer channels are well aligned to target customer segments Our customer channels effectively reach target customer segments | | | |
| | 33 Our customer channels do not effectively deliver our value proposition | | | | | x | | | | | |
| | 34 Our customer channels are misaligned to target customer segments | | | | | x | | | | | |
| | 35 Our customer channels do not effectively reach target customer segments | | | | | x | | | | | |
| Customer Relationships | 36 Our customer relationships are weak | | | | | x | | Our customer relationships are strong Our customer relationship model(s) are aligned with customer expectations Our customer relationship model(s) enhance our value proposition Our customers are locked into long-term relationships | | | |
| | 37 Our customer relationship model(s) are misaligned with customer expectations | | | | | x | | | | | |
| | 38 Our customer relationship model(s) are misaligned with our value proposition | | | | | x | | | | | |
| | 39 Our customers can switch to a competitor at any time | x | | | | | | | | | |

