

# Sustainability

## Food Chain

### Granada



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## Layman's Summary

De voedingsindustrie veroorzaakt 25 tot 37% van de totale broeikasgas uitstoot. Europa produceert veel voedsel, waarvan een groot deel in Spanje wordt verbouwd (Xu et al., 2021; Vicario-Modroño et al., 2022). De agricultuur sector van Spanje is een van de grootste vervuilers van de EU en produceert 10% van de totale agriculturele uitstoot (CAP, 2021). Verduurzaming van deze sector kan een positieve impact hebben op het milieu. Binnen Spanje zit de meeste landbouw in de regio Andalucia (Zuid-Spanje), waaronder de provincie Granada een van de grootste landbouw producties bevat. Hierom is het een belangrijke provincie om naar te kijken voor het verminderen van de uitstoot in de voedingsindustrie.

Voor de voedingsindustrie van Granada zijn de verschillende sectoren gedefinieerd, deze zijn: producenten, processoren, distributeurs, service, en consumenten. Door middel van diepte interviews zijn de bedrijven in deze verschillende sectoren een voor een onderzocht. Deze interviews brengen in kaart hoe de sectoren werken en wat de normale bedrijfsvoering is. Hierbij was het doel om erachter te komen wat de dagelijkse problemen zijn waar de bedrijven tegenaan lopen. Daarnaast lag er een focus op wat de sectoren op dit moment doen op het gebied van duurzaamheid en wat de drempels hierbij zijn.

Uit het onderzoek kwam dat elke sector zich ergens anders op focust op het gebied van duurzaamheid, hierom moet dan ook per sector een andere strategie worden toegepast om verandering te weeg te brengen. De belangrijkste duurzaamheidspunten per sector zijn: 1) producenten focussen zich op een gezond ecosysteem; 2) processoren op de impact van de verpakkingen, 3) distributeurs op het verminderen van organisch afval, 4) de service sector op het vervangen van plastic, en 5) de consumenten op het kopen van lokaal voedsel. Daarnaast is per sector geanalyseerd wat de grootste problemen waren in de dagelijkse bedrijfsvoering. Als eerst de producenten, dit is een oude sector die op het gebied van duurzaamheid nog niet goed lijkt te weten welke processen milieu onvriendelijk zijn. Ten tweede, voor processoren is de verpakking erg belangrijk om zichtbaar te zijn voor de klanten, dit vertraagd verandering van de verpakkingen. Daarnaast kost het verwerken van voedsel erg veel energie. Als derde, de distributeurs lijken zich niet verantwoordelijk te voelen voor duurzame veranderingen. Verder heeft deze sector moeite met het vinden van hoog opgeleid personeel. Ten vierde, zijn er twee groepen te onderscheiden in de service sector: 1) milieu vriendelijk, en 2) niet bewust van verduurzaming. De eerste groep heeft als grootste probleem het aantrekken van klanten, terwijl de tweede groep vooral zelf eerst nog bewust moet worden van duurzaamheid en dat ze een bijdrage kunnen leveren. Als laatste, consumenten vinden ecologische voeding erg duur en hebben het belang van het milieu onderaan hun prioriteiten lijstje staan.

Met al deze informatie is er een brainstorm georganiseerd met het Biomimicry Team om duurzame oplossingen te bedenken voor de huidige problemen van de bedrijven. De concepten die zijn bedacht door het Team zijn gericht op educatie, consultancy en marketing. Met educatie wordt er gekeken naar het veranderen van de intrinsieke motivatie van de consument. Hierbij richt het Team zich vooral op kinderen van basisschool leeftijd. Jonge kinderen kunnen nog gevormd worden om milieu bewuster na te denken, dit kan hun koopgedrag beïnvloeden in de toekomst. Door duurzamere keuzes te maken, kunnen ze de gehele voedselketen beïnvloeden. Het tweede waar het Team naar keek is het informeren van producenten en processoren om hun bedrijven milieu vriendelijker te maken. Doormiddel van een gericht onderzoek naar de meest milieu onvriendelijke praktijken van het bedrijf, kan het Team een advies schrijven om negatieve impact te verminderen. Als laatste keek het Team naar marketing strategieën, zoals het opzetten van campagnes. Op dit moment heeft Biomimicry Granada alle kwaliteiten in huis om zich te profileren als educatie bedrijf of consultancy bureau, echter vallen marketing competenties niet in hun arsenaal. Daarom is het advies om te focussen op de eerste twee strategieën om de voedselketen van Granada te verduurzamen en een stap te zetten richting een duurzamere wereld.

## Abstract

The food industry is accountable for between 25-37% of global greenhouse gas emissions. One of the biggest regions for food production in Europe is Spain. Food production in Spain is responsible for having 10% of total global GHG emissions for the entire of Europe. To be more specific, the main food production is originated from south of Spain, Andalusia. As Granada being an important province in Andalusia for food production, it is a critical region to focus on for reduction of GHG emissions by the food industry. Therefore, this research is conducted in Granada to research where individual nodes of the food chain can become more sustainable. This research is executed by in-depth interviews with individual companies within each sector about the current sustainability strategies, as well as understanding daily business processes and problems. These interviews give insight into; first, the value processes in the food chain, second, current roadblocks and third, possible solutions that could reinforce sustainable strategies for the company. Together with the problem owner, Biomimicry Granada, we used these insights to generate concept strategies in which the Biomimicry Team could help improve the food value chain. The outcomes of the conclusion focused on education and consultancy. First solution is developing primary school lesson programs about sustainable food to reach young people that could easily be influenced to change their future consumption habits. The second solution is to begin a consultancy company that advices producers and processors about organic farming, reduction of energy and packaging impact, the latter two by means of a materiality assessment.

## Executive summary

In general, the food industry could have a harmful effect on the environment. Granada is one of the biggest producers of food in Spain, and together with the rest of the south of Spain causes 10% of the total greenhouse gas emissions in the EU. Besides that, the service industry, that presents and sells the food to end-consumers, accounts for the biggest economy in Granada. We investigated the entire food value chain of Granada to see where sustainable change can be made. The food chain is divided into: 1) producers; 2) processors; 3) distributors; 4) service, and 5) consumers. With in-depth interviews to companies in every node, we identified the current sustainability strategies, the key issues and roadblocks to sustainability. After that, a brainstorming was organized to search for solutions for problems that Biomimicry Granada could solve while improving sustainability in the sector.

There is a different focus on sustainability per sector, with different daily key issues and roadblocks to sustainability that they encounter:

**Producers** have a focus on ecosystem health as they need that to sustain their business. They come across problems with finding educated personnel, competition from offshore investors, and inefficient use of subsidies. Their main roadblocks to become sustainable is that it is an old and individual sector that is not very open to change, there is a lack of materiality assessment, and it seems highly influenced by the market and consumers.

**Processors** have a focus on packaging as the appearance of the product is their selling point. Packaging in general has a negative impact on the environment. However, changing this to more environmental friendly strategies would change the design of the product, which is a risk for losing clients. Another sustainability focus for processors is reduction of energy consumption.

**Distributors** focus on reducing organic waste, as this is a one on one sales loss. The distribution sector has difficulty finding educated personnel and has a lack of ownership towards the sustainability quest.

**Service** companies mainly focus on using bio-degradable coffee cups and buying local. The service sector can be divided into two groups. The first group is intrinsically involved in sustainability and uses a lot of strategies to improve their shop, and their main problem is attracting clients. The second group has a low awareness of the problem, which is the biggest problem concerning the environment.

**Consumers** there is a big variety of consumers in Granada, but they mainly focus on buying local and reducing plastic use. The main problem to become more sustainable is the idea that organic food products and organic shops are more expensive and they are not ready to pay for it yet. Another important thing to mention is that in general people in Spain don't think they are affected by climate change.

After brainstorming about these key issues in the food chain, there were multiple solutions that could improve sustainability. The concepts were subjected to a set of criteria to analyze if they have potential to succeed within the Biomimicry Team. The points of criteria were: useability of the concept, matching with competences of the Team, readiness for players in value chain of Granada, and possibility to expand to (inter)national level.

The recommendation for Biomimicry Granada is to focus on profiling itself as Educational Company or as Consultancy Company.

*Educational company:* make an education package for primary school about the origin of food and when food is in-season. This package would include fieldtrips and workshops for children to obtain a deeper understanding about how to make environmental friendly choices as a consumer. The focus here lies on primary school children, because they still have the potential to form this knowledge into habits (*see 4.5.1 – 1*).

*Consultancy company:* this company could have a primary focus either on producers or on processors. For producers they could make a materiality assessment of the business and use this information to change their practice to increase sustainability. In this process they could guide and provide the knowledge for producers to qualify for the new greening subsidies of the EU, which would be a financial trigger to take a next step towards sustainability (*see 4.1.1 – 1*).

For processors they can make a materiality assessment to reduce energy consumption and impact of packaging. The reduction of energy also includes a financial trigger as it reduces the energy bill, therefore, there should be an emphasis on this part of the benefits for the processors (*see 4.2.1 – 1; 4.2.1 – 2*).

Based on this we would advise these first general steps that Biomimicry Granada takes to successfully accomplish its goals and add value in making the food chain of Granada more sustainable:

- Make a 3 year plan to achieve one goal that Biomimicry Granada wants to achieve.
  - Prioritize projects to accomplish that goal – no distractions from other projects.
  - Describe the primary tasks and time investments per person.
  - Create a financial earning plan – stick to that in order to be able to invest your time wisely.
- Describe the network that you currently have and the network you need to achieve the goals described above.
  - Discuss the plans you have with your network and ask them for help or collaboration.
- Start creating links with economic and political leads in Granada that are influential for the service you want to provide.
  - Think about going to (in)formal events to get in contact, use indirect contacts for a first introduction, or advertise yourself by organizing your own big event.
- Try to work towards a team that is fluent in Spanish to develop relationships and execute tasks that belong to a consultancy firm.
  - Try to unite this goal with others – such as networking.

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# CHAPTER 1. INTRODUCTION



## 1.1 Introduction

One of the biggest concerns for countries nowadays is the accelerated course of human induced climate change. Fossil fuel emissions, forest destruction and farming affect the climate and influence earth's temperature. Over the course of the past 10 years, the warmest decade was recorded with an average temperature rising of 1.1 °C (EU, *Causes of Climate Change*, 2021). Moreover, predictions show an increase of 0.2 °C a decade (EU, *Causes of Climate Change*, 2021). This endangers flora and fauna from tropical forests to coral reefs, including human life itself. In Spain, the 'Agencia Estatal de Meteorología (AE-MET)' stated that already 32 million inhabitants suffer the direct consequences of climate change (*Plan Nacional de Adaptación al Cambio Climático*, 2020). However, the socio-economic status and the main working sectors, such as agriculture and tourism, make the south of Spain especially vulnerable for the consequences of climate change. Consequences include visible effects such as expansion of semi-desert areas, enlarging summer time, and increasing temperatures and sunny days. This is especially seen in the southern Spain, with city temperatures out-rising 40 degrees and increasing drought risks in the countryside. The latter one in particular is a threat for the southern region, Andalusia, which houses a large amount of the (European) agriculture, therefore, plays an important role in food security. Moreover, agriculture is one of the biggest working sectors in south of Spain and on the frontline of climate change. Therefore, there is an urgency to protect this region by mitigating climate change effects by inducing sustainability strategies. These changes should not only be directed solely to agriculture, as agriculture is interwoven with different business operations in the food sector.

Sustainability in the food industry is considered to be one of the main drivers to realize sustainable development globally. At the moment, between 25 and 37 percent of global greenhouse gas emissions originate from food production (Xu *et al.*, 2021; Vicario-Modroño *et al.*, 2022). The food industry has great potential to improve efficiency and sustainability by improving resource handling, reduction of damage done to nature and decreasing waste (Gracia & Gómez, 2018). In general, it is known that governments have an important influence on regulation and trade within the food industry. However, the involvement of stakeholders of the food industry value chain is considered to have most potential in transforming the food industry towards a more sustainable view (Aschemann-Witzel *et al.*, 2017).

The province of Granada is one of the biggest agriculture producers in Andalusia and is, thus, an important player in the food industry of Spain. Moreover, the problem owner, *Biomimicry Granada*, is positioned in the city Granada, and tries to remain bound to the province (Box 1). Therefore, the research question will be: what is the current perception of sustainability of different stakeholders in the food value chain in Granada? And how can *Biomimicry Granada* use these insights to create opportunities for sustainable change?

By answering these questions, we aim to find potential work strategies to enhance sustainability in the entire food chain of Granada by studying the business practices of stakeholders. In order to do so, an overview is made of the current socio-economic and sustainability status of Spain, and specifically Granada. In addition, an assessment is made of the current strategies, issues and roadblocks of sustainability of different stakeholders in the value food chain of Granada.

In this report, we have provided an introduction about the severeness of the issue, where as follows a theoretical method will be provided (chapter 1). The second chapter (chapter 2) describes the background of Spain and Granada in terms of sociology, economics, and environmental status and policy. Moreover, in this chapter the operation processes of the sectors are discussed, including their current sustainability strategies. After that, the findings and analysis of the research are presented (chapter 3). Lastly, the conclusion and recommendations for *Biomimicry Granada* are described in the last chapter (chapter 4).

### Box 1. Biomimicry Granada

Biomimicry Granada is an association that searches to incorporate nature and natural process for innovations in our daily life. They provide workshops, consultancy, and ideas to motivate biomimicry to create sustainable solutions for improving the current climate situation.

#### BOX 1. BRIEF DESCRIPTION PROBLEM OWNER: BIOMIMICRY GRANADA.

## 1.2 Method

This is a qualitative research with an inductive approach (Azungah, 2018). During the research the questions were tailored to the research field and parallel to that a literature study is conducted. Upfront a clear research outcome was stated, namely: **to identify the sustainability perception and business issues in sectors or individual companies in the food chain of Granada.**

This information is used for Biomimicry Granada to brainstorm for business opportunities for Biomimicry Granada to help companies in this food chain to become more sustainable.

### 1.2.1 Research methods

I've used a number of methods to investigate the research questions, making use of literature scan and human observations through interviews.

### 1.2.2 Literature scan

A literature background scan of the surrounding and citizens of Granada is done to obtain an understanding of the behavior of citizens and policies of the Spanish government in the food industry. Here fore, public reports of the Spanish government and the European Commission are used. In addition to that, reports of Spanish public organizations, consultancy firms, and articles in google scholar are studied (reference list).

### 1.2.3 Interview theory

The interviews are a theoretical stratified sample (Robinson, 2013). The respondents are selected in collaboration with my problem owner, with the criteria that they could deliver qualitative information to answer the research question. Interviews lasted on average between 50 and 90 minutes (Appendix 1).

In-depth interviews are done to research the food industry in Granada. The food chain is divided into five nodes to distinguish the major players. The number of people is indicated with n. Starting with the producers (n=4), which are the companies at the start of this food chain that grow, farm, or catch food. Producers in this report include crop growers, fisherman, and an external party that is closely related to farmers. The next node in the chain are the processors (n=2); these companies convert and process raw food products from the producers into their final product. Here fore, companies that make olive oil and rum are included. As the third node in the chain, we identify the distributors (n=2). The distributors are the companies from the whole sales market that distribute the products from the producers and processors to the service sector. To continue, included in the service sector (n=6) are the small supermarkets, fruiterias and restaurants that buy food, convert or display it, and serve it to the consumers. Finally, the consumers (n=3) are at the end of the food chain and consume the food handed by the service sector (Appendix 2). In addition, an expert interview is done with professor Montoro Rios, expert in marketing and market research to sustainability behavior amongst Spanish consumers.

Different sources were consulted to obtain the interviews, by means of social media (linked-in), web-pages, personal contacts, contacts through Biomimicry Granada, and direct contact. However, due to time- and resource restrictions, land fires, and a limited number of respondents, the number of interviews is not equally spread over the nodes.

Prior to the interviews an interview structure was made to guide the interview without guiding the interviewee to specific thoughts and answers (Appendix 1). The interviews are conducted in real life and recorded via a telephone app called 'Voice Recorder' and transcribed in Microsoft Word. In the transcription the interviewee, function, interviewers, place, date and time are included. The interviewee and interviewers are indicated with a capital letter of their first name which is placed at the front end of their spoken text. As the scope of the research is

The main goal of the interviews is to assess per node the daily practices, continuous challenges in business operations, interpretation of sustainability, and actors that influence their normal and sustainable business operations. With the interviews we try to give a small representation of a part of the sector, however, as the sample size is rather small this could not be seen as a one-on-one representation of the nodes (Appendix 2).

#### 1.2.4 Analysis theory

Each of the interviews is analyzed and sentences are divided into different subcategories in an online computer program called Air Table (*Appendix 4*). The categories are made and used according to an exclusion system. In the general analysis, the categories are made by premeditated theories from the literature and codes are included accordingly. Added to these *a priori*-categories are the noteworthy comments and experiences in the interviews.

The primary *a priori*-categories that were selected are: recycle, reduce, reuse, and other sustainable strategies in the business. In addition, categories were used to obtain a full understanding of their (sustainable) business practices, these were: ‘reasons for sustainability’, ‘incentive for sustainability’, ‘sustainability challenges in business’, ‘challenges in general for business practices,’ and ‘outside influences’. On first instance, the codes are set by in-vivo coding, however occasionally some theoretical codes are included (*Table 1*).

Below there is an overview of the categories and corresponding codes that were used to analyze the interviews (*Table 1*).

**TABLE 1. CATEGORIES WITH CORRESPONDING CODES USED TO ANALYZE THE INTERVIEWS.**

Recycle	Reduce	Reuse	Other	Reasons sust.	Incentive sust.	Challenges sust.	Challenges general	Outside influences
Glass	Pollution	Biomass	Organic	No awareness	Human health	Behavior consumer	Behavior consumers	Suppliers
Water	Water use	Water	Local	Awareness through shop/employers	Human life	Behavior business owner	Bureaucratic government	Government
Carton	Energy by insulation	Energy	No plastic	Awareness through life	Quality of food	Market	Taxes	Weather
Plastic	Plastic	Plastic	Education	Awareness through governmental rules	Esthetics	Government	Space restriction	Clients
Organic	Waste	Waste	Vegan/no animal harm		Intrinsic	Suppliers	Business strategies	Market
Material shop	Energy		No chemical or fertilizers		Healthy soil	Investments	Client education	End-consumers
Material cups	Contamination		No chemical insecticides		Obligation government		Attracting personnel	
			Sustainable packaging					

			SDG goals					
			In-Season					
			Healthy population					

This research is theoretically validated research, that is closely monitored and specified during its course. An important component of this research is the description of a mental image of the overall players in the food chain. This table is structured in a way that I could make a mental image of the overall players in the food chain. This was a necessary step to prepare a brainstorm as a final part of my minor project, where I showed the data to my problem owner. Based on this date we brainstormed over a list of possibilities for Biomimicry Granada.

### 1.2.5 Brainstorm

A brainstorm is conducted in a session with the Biomimicry Team. The aim of the brainstorm is to use the knowledge of the Biomimicry Group to find opportunities for sustainable change in my research. Moreover, this way I can assess what is important for Biomimicry Granada and match that with the outcomes of my research. In order to do so, a funnel technique is used to head of side issues for the brainstorm. Therefore, a selection of important information is made to hand to the Biomimicry Team beforehand. The brainstorm is conducted in the Biomimicry office in Granada in a session of 1h and 45 minutes. Everybody is asked to follow four main rules for brainstorming of Osborn (*Zack Hiwiler, 2015*):

1. Reduce negative feedback;
2. Focus on producing lots of ideas, rather than that those ideas have to be perfect;
3. Work together, by adding to others' ideas;
4. Try to think big.

Three rounds of brainstorming were prepared as follows:

- Round 1. Expanding knowledge and finding opportunities
- Round 2. Solutions
- Round 3. Specifying

#### Round 1.

After the presentation of the background and research outcome, each participant has to write down 3 main concerns. This is to obtain a deeper understanding of the problem in order to work for a solution. The problem statements were categorized and a selection is made to focus on for this brainstorm.

#### Round 2.

The participants were challenged to think outside their own bubble by using a 6-3-2 brainwriting technique (Michinov, 2012; Sari & Fitrawati, 2018). This technique allows 6 participants to write down 3 solutions for the problems in 2 minutes. The original technique uses 5 minutes of writing, but due to time issues the writing time will be reduced to 2 minutes. After that, the paper is handed to the person on their left, who continues to write three solutions in the theme of the previous person.

The solutions that come out of this session are categorized by using the How-Now-Wow technique (*Team Asana, 2021*).

- How: original idea, but difficult to implement.
- Now: not an original idea, but easy to implement.
- Wow: original idea and easy to implement.

To continue to specify certain solutions, there is a vote amongst the participants to rate the solutions. Everyone can give a top three of solutions, where the number 1 receives 3 points, number 2 gets 2 points, and number 3 receives 1 point. The three solutions with the highest points continue to the last round of brainstorming.

Round 3.

The last round consists of an open discussion about the 3 best solutions that have been found so far. Theoretical and practical ideas can be added to this round. To help the strain of thoughts of the participants, two brainstorming techniques were used. The first is the gap-filling technique (*Team Asana, 2021*). With this technique the participants had to envision the current situation (ready state) and the situation as they wish it would be (target state). Then the question was raised: how can we get from the ready state to the target state?

After that, the *star bursting* technique was used to specify the idea (*Morteza Hosseini et al., 2021*). With this technique the following questions are answered:

- Who is the idea for?
- What does it do?
- Where do you want to implement the idea?
- When do you want to implement it?
- Why would people want this?
- How do we determine the process?

In the process of execution we changed the gap-filling technique and the star bursting technique into a more basic method, in which solutions were generated for the three major outcomes of session 2.

Now that the methods are discussed, the next chapter will provide more information about the background of Granada, including its geography, population, economy and environmental status. Moreover, in the next chapter the problem owner, Biomimicry Granada, will be introduced.

# CHAPTER 2. INFORMATION CASE STUDY



## 2.1 Geography and origin



**FIGURE 1. GEOGRAPHY OF GRANADA PROVINCE IN SPAIN.**

Granada is a town positioned in the south of Spain in the region of Andalusia. The region of Andalusia consists of 8 provinces, one of them is Granada, equal to the name of its capital city. The province includes mountainous regions and reaches the Mediterranean coastline (Figure 1). The city lies at the foot of the Sierra Nevada Mountain. The origin of the name 'Granada' has turned out to be uncertain in history. The name is either copied from the *Granada* (English: pomegranate), which is a fruit that is widespread amongst the city, or the name originates from the Moorish rulers, meaning *hill of strangers*. The territories of Andalusia, derived from the Arabic name 'Al-Andalus', were ruled by the Moorish kingdom between 711 and 1492 (Massot A. et al., 2016) was the last Moorish kingdom in Spain before it was taken over by the Catholics. The palace that the Moors built, the Alhambra, is now the most famous heritage site in

Granada, attracting tourists from all over the world.

## 2.2 Population

In 2021, the city of Granada hosted 231.775 citizens (INE, 2021) and it is projected that the population in 2022 will be approximately 237,540 citizens of which 60.000 citizens are students (URBACT, 2022). The province of Granada had a total population of 921.338 inhabitants in 2021 (Instituto de Estadística y Cartografía de Andalucía, 2021). However, there has been a decrease in population of 4.4% since 2000 (The Circular Economy in Granada, Spain, 2021a) (Figure 2).

Even though Granada houses a lot of young students (Box 2), the average population is aging and shrinking on a higher rate than the rest of Spain (+65 of total population: Granada 21.5%; Andalusia 17.1%; Spain 19.4%).



**FIGURE 2. POPULATION TREND IN GRANADA, SPAIN, 2000-20 (THE CIRCULAR ECONOMY IN GRANADA, SPAIN, 2021)**

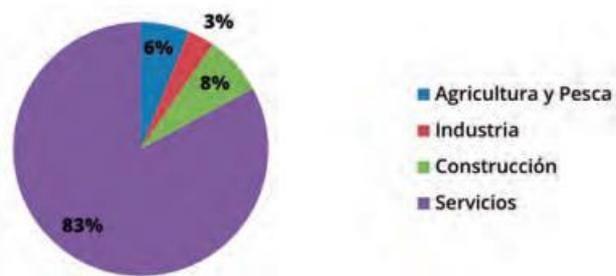
### Box 2. Students

Students from all over Europe are coming to Granada to study at the fourth largest university in Spain. The Erasmus exchange rate of students in Granada is one of the highest in Europe (University of Granada, Generales, 2021). The most popular research fields for exchange studies are artificial intelligence, information and communication technology (ICT), and food and health sciences. However, most students don't continue to work in Granada after graduation (The Circular Economy in Granada, Spain, 2021a).

**BOX 2. DESCRIPTION ERASMUS STUDENTS IN GRANADA.**

## 2.3 Economy

The economy of Granada is primarily defined by the service sector which represented 77.6% of the GDP of Granada province, which is higher than average in Spain (74.7%) and Andalusia (73.9%) (Figure 3). Within the service sector, tourism plays an important role. The Granada City Council Report of 2003-2020 showed that in 2013 almost 85% of the 22.363 companies in Granada are based in the service sector and are mainly related to tourism. Hereby, covering 83% of the employment in Granada in the tourism sector (Estrategia Granada, 2020).



Granada is the third biggest agricultural producing province in Andalusia. Andalusia accounts for about 60% of agriculture areas in Spain (*Estadísticas de Producción Integrada en Andalucía, 2019*). Whereas employment in the agriculture sector in Granada is even higher (8.6%) than in the rest of Andalusia (8.3%), and double compared to rest of Spain (4.2%) (*Spanish Public Employment Service, 2021*).

**FIGURE 3. PERCENTAGE OF TOTAL PRODUCTION AGRICULTURE SECTOR IN GRANADA (EL SECTOR AGRARIO EN ANDALUCÍA, 2021)**

Unemployment in Granada (23.2%) in 2019 is measured almost equal to Andalusian rates (22.3%), but higher compared to the rest of Spain (14.2%) (*OECD Employment, 2021*). A decreasing trend of unemployment was seen since 2012, unfortunately the COVID-19 pandemic increased the unemployment rates again to 28.4% (*Spanish Public Employment Service, 2021*).

Most of the labor market of Granada is positioned in its capital, with an average income of about €21.710, - a year, which is about the same as in Andalusia, but below the Spanish average (€25.950, - (*Spanish Public Employment Service, 2020*).

## 2.4 Recent environmental policy and status in Spain

It is important to know the environmental status in Spain and their current environmental policy to assess the focus, willingness and budget for sustainable change. Currently, there are two main focus points in the environmental policy of Spain; improving agriculture and reduction of overall carbon emissions.

According to the Spanish country report of 2018, the Spanish government was lacking a vision regarding sustainability, and protection and preservation of natural habitats. Nonetheless, a shift was made in 2019, when the Spanish government proposed a strategic plan called the 'Energy and Climate Framework' outlining a vision for a climate plan from 2021 to 2030. This plan aligns with the EU goals that are set to reduce greenhouse gas emissions and to be carbon neutral by 2050. Within this framework, there is a strategy per region to support the transition. The Framework Plan invests €235 billion between 2021 and 2030 in projects that reduce carbon with 20-21% against a 1990 baseline, and increase renewable energy consumption by 42% with a total amount of 74% of the energy generation being renewable. The International Institute of Law and Environment has stated that Spain is heading in the right direction with this Framework, but more ambitious and concrete measures still have to be taken (*Kölling et al., 2020*)

The Institute for European Environmental Policy (IEEP) assessed the environmental status of Spain and was especially alarmed by the agricultural status. Spain is one of the four biggest polluters on agriculture emissions within the EU. The agricultural emissions of Spain accounts for 10% of the entire EU agriculture emissions. The IEEP stated in December 2021 that the climate objectives for reducing emissions are not on track for the goal to reduce carbon in 2030. Another alarming assessment is the decline in biodiversity of birds in farming areas. Over the time-span of 2000-2017 a reduction of 33% is measured. This is why the IEEP currently redesigned the strategy of Spain (*CAP, 2021*).

With the current agricultural strategies, Spain will spend 32 billion euro between 2021 and 2027 on the sector. This is a great amount of money that could make a real difference to achieve climate and biodiversity goals. Therefore, redesigning the strategies was essential in order to have clear directions and action points for Spain (*CAP, 2021*).

## 2.5 Rural development program Andalusia

*To explain the rural development program of Andalusia, mainly the Program explanation itself (The rural development program for Andalusia, European Commission, 2022) and its factsheet are used (Factsheet on 2014-2020 Rural Development Programme for the Region of Andalusia, 2014-2020).*

The European Union and the Spanish government stated goals and constructed a plan to reduce the impact of agriculture on the environment. The overall goals of the EU for 2030 are to reduce chemical pesticides by 50% and fertilizers by 20%, as well as expanding organic agricultural land by 25% (*Organic Action Plan | European Commission, 2022*). In order to achieve this goal, the EU wants to develop the farming industry in Europe by helping to improve agricultural strategies and providing extra money for agricultural regions. Together with the Spanish government, they developed the 'Rural Development Program (RDP)'. The RDP for Andalusia describes a plan to use €3.213 million of public money (of which €2.454 million of EU) to spend on developing the farming industry in southern Spain. There are multiple strategies that are included in the plan to sustainably develop the region:

*# Direct payments to farmers for sustainable improvements according to Common Agricultural Policy (CAP).*

Direct payments (value of 0.8 million) will be made to farmers to enhance the CAP, which is a strategic plan between 2023 and 2027 to increase sustainable agriculture and ensure food security.

*# Support 5000 farmers to modernize existing farms and 5300 young entrepreneurs to start a farm.*

Almost 5000 farmers will get the opportunity to restructure and modernize their farms and 5300 new farmers will get support to open their farming business. Money will also be available to train 160.000 participants in the agricultural business (*European Commission Endorses Spain's Plan, 2022*).

*# 20% of agricultural land under protection to improve biodiversity, water, and soil quality.*

The RDP will also support conservation and protection of the environment by ensuring that 20% of the agricultural land in Andalusia will be under management to enhance biodiversity, water or soil management and prevention of soil erosion. Their goal is to convert 50.000 hectares of normal farmland into organic farmland and ensure preservation of the 1.2 million existing hectares of organic farmland. Altogether this would make 31,25% of all the 4 million hectares of utilized farmland in Andalusia organic (*Allagnat et al, 2018*). Furthermore, a plan was developed to support over 90.000 hectares of farmland to improve water efficiency.

*# 25% of existing forest under risk management.*

Besides the farmland measurements, the RDP also involves forests by putting 25% of them under risk management. This measure could reduce the occurrence of forest fires and natural disasters.

*# Increase employment in agricultural sector.*

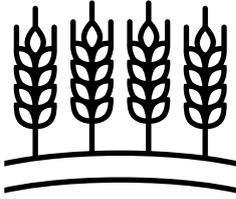
Lastly, it is estimated that 900 new jobs will be created for the rural population as a result of the investment of the RDP. This could contribute to decrease the unemployment in the agriculture sector of Andalusia, which currently counts 5.461 unemployed workers (*Jiménez et al., 2022*)

## 2.6 Biomimicry Granada

The current active Biomimicry Team consists of four members of which two of them live in Granada and one will soon move to Granada. The origin of the members of the Team is American, British and Spanish. The competences of the group lie within education by providing workshops, management and consultancy. Their previous work focuses on giving workshops about biomimicry, summer schools and aid with conferences. The association is part of a network of other Biomimicry Teams in Spain and globally. It started off as an organization for biomimicry enthusiasts, in close collaboration with Biomimicry Iberia, to spread knowledge on Biomimicry. Now, Biomimicry Granada separated to follow a path to become an individual company.

## 2.7 Operation processes of the sectors

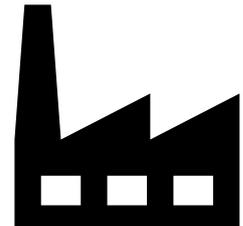
### 2.7.1 Producers



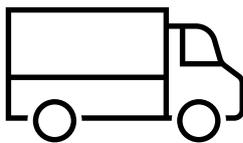
The producers need to buy seeds, fertilizers, pesticides, and machinery in order to have equipment and sources to grow crops from. Most of the farmers inherit their land, but nowadays young first-generation farmers are supported by the government to start a farm too. In general, there are different forms of subsidy that a farmer can rely on to sow and collect the crops. To sell their crops, most farmers have price negotiations with distributors each growing season or agreements with cooperatives (Figure 4). Some farmers have contracts with big supermarket chains that have established a fixed price.

### 2.7.2 Processors

In general, processors have their own price negotiations with the producers to buy the products in order to make their final product (Figure 4). The use of machinery and ownership of the building is dependent on the kind of production. After the processing, the product has to be packaged and labeled. Marketing strategies are important to reach the end-consumer and prices are determined to sell the product to the distributors (Figure 4). It could also be that the producer is the processor at the same time. For example, when the olive farmer also owns and uses the olive mill that converts olives into olive oil.



### 2.7.3 Distributors



Distributors start with price negotiations with the farmers to obtain a fair price per kilo (Figure 4). The market has grown and consumers expect year-round availability of all products, therefore the distributors have a big range of producers and suppliers, in- and outside of Granada, to collect all the products. The distributors we assessed in Granada rent their building space at MercaGranada (Box 3). The distributors open at 4 A.M. in order to display their food to retailers and restaurants before they open their shops (Figure 4).

#### **Box 4. Description Spanish consumer - according to research of Prof. Behavior at Granada University**

'We found that in Spain, the people don't think the environment is a threat for their lives. They don't have a real perception of the risk. They think it is something far from here, out of this country.' Despite the visible climate change effects such as increasing heat in summer, the people don't perceive it as a threat for their lives of loved ones.

**BOX 4. DESCRIPTION SENTIMENT FOR CLIMATE CHANGE OF AVERAGE SPANISH CONSUMER ACCORDING TO PROF. MONTORO RIOS.**



#### **Box 3. MercaGranada**

MercaGranada is a public company located all over Spain, that rents logistic centers for food distribution. Their tasks are to guard and control the centers and maintain the buildings. Moreover, as a public company they work on the SDG goals, which include environmental policies.

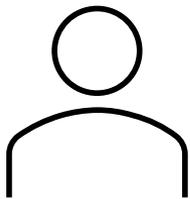
**BOX 3. DESCRIPTION MERCAGRANADA.**

## 2.7.4 Services

Services such as retailers and restaurant owners purchase the products that they need in their store. This could be found by the distributors from MercaGranada, local fruiterias, other small supermarkets, eco-farmers or door-to-door salesman (Figure 4). Depending on the kind of service they process the purchased products before presenting it to the consumer (restaurants) or they could immediately display it in their shops (retailers) (Figure 4). Most restaurants want to present a certain image; therefore, it is important for them to think about their branding strategy to attract their consumers.



## 2.7.5 Consumers



The range of consumers in Granada is fairly broad. Different age groups and nationalities should be included. However, the stimulus to consume remains the same, consumers still their hunger by going to a supermarket or restaurant (Figure 4). Consumers are influenced by salary, nationality, surrounding opinion, and marketing. Mainly, consumers purchase a product by price and commodity, and some add the drive of their own beliefs (Box 4). An important thing to mention is that their purchasing behavior influence the entire food chain (Figure 4). In Granada, lots of restaurant-consumers go out for (free) tapas and an inexpensive coffee with a tostada. In general, Granadian people are family orientated.

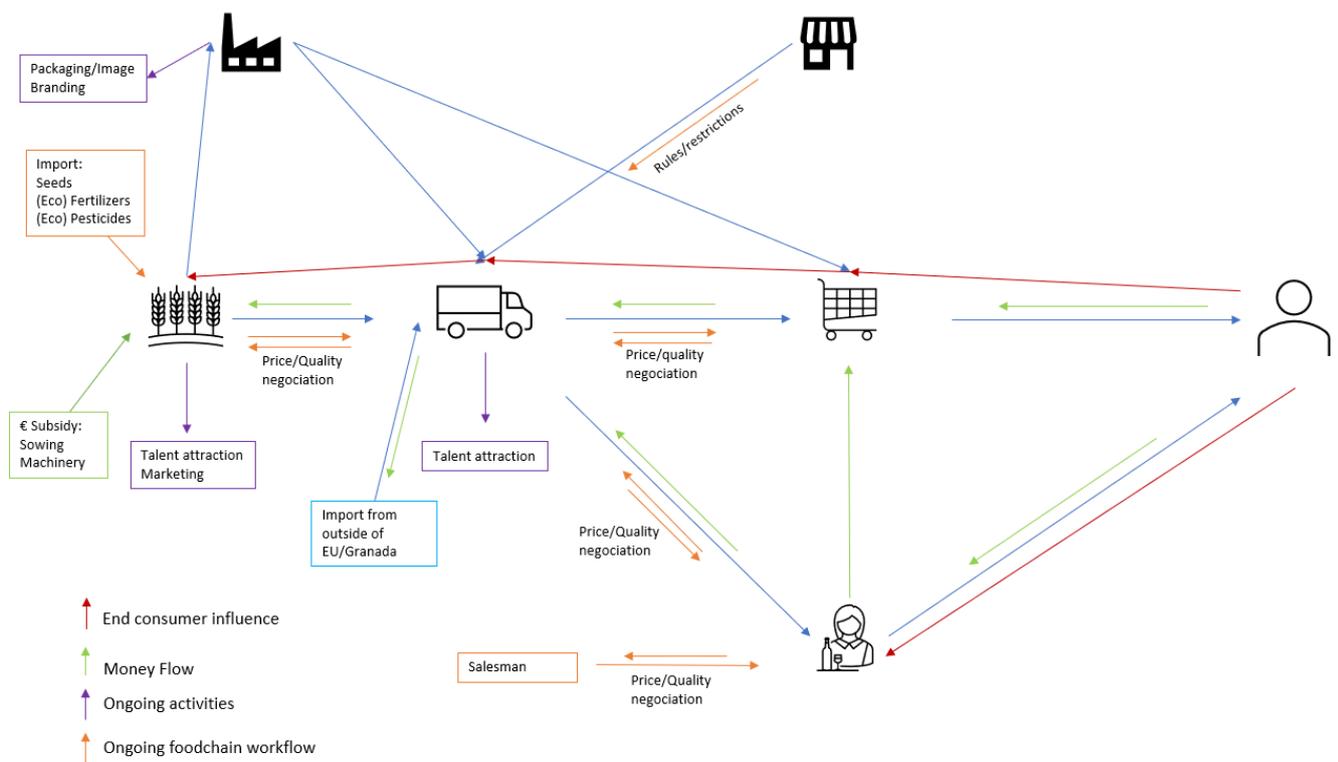


FIGURE 4. FOOD VALUE WEB OF FOOD INDUSTRY IN GRANADA. INFLUENCES OF COMPANIES AND SECTORS ON EACH OTHER.

## 2.8 Current sustainability strategies per sector

The current sustainability strategies in the sector are explicitly assessed in individual companies. The main sustainability strategies are divided into recycling, reduce and reuse. The other sustainability strategies are described apart from that, with as main recurring topics local, organic, and vegan.

### 2.8.1 Producers

TABLE 2. CURRENT SUSTAINABILITY STRATEGIES PER PRODUCER.

	PRODUCER 1	PRODUCER 2	PRODUCER 3
<b>RECYCLE</b>	Water		Plastic, glass, carton boxes, other material
<b>REDUCE</b>	Waste Contamination – filter oil residue Water use Energy – Solar Panels and 100% LED light Pollution	Energy – solar panels boats [upcoming]	Pollution – change to olive pit pellets Energy – solar panels and hydraulic cars
<b>REUSE</b>	Water – rainwater		
<b>LOCAL</b>	Local processor	Mostly sold to local markets	
<b>ORGANIC/ECOSYSTEM MAINTENANCE</b>	Eco-fertilizers No pesticides	Minimum size per fish sort Fish nursery Boat control fishing illegal water Check fish habitats	Reduction pesticides
<b>SOCIAL</b>	Sustainable tourism	Woman collective	

The most important part of the current sustainability strategies of the producers focus on maintaining the ecosystem. ‘It is better to maintain the natural balance of the ecosystem in order to prevent plagues and to grow my crops than to use insecticides and fertilizers. Only natural balance could prevent plagues.’ – Producer 1. ‘A healthy fish population creates fish to be caught and sold.’ – Producer 2. In the fishing sector there are regulations to balance fish populations, such as minimum fish size and prohibited fishing areas. Besides that, the OPP started a collaboration with WWF to use machines that detect the environment of the boat to measure the health of the fish population. Next to that, they started a fishing nursery for lost fishing eggs on board. One of the biggest drives for the tomato farmer to reduce pesticides is for the love of the tomato and the safety of eating it. ‘I am a person that is accustomed to walking around the greenhouse and eat a tomato. My 3 year old grandchild comes in and grabs a tomato and I feel safe with him eating it.’ - Producer 3 (Figure 5). While most of the producers solely look at the product for sustainability strategies,



Producer 1 also considers the rest of his business process. An important side note to this is that he uses sustainability as branding of its product (Table 2).

Two of the producers mentioned electric vehicles (boats or cars) as one of the next steps for sustainability.

FIGURE 5. TOMATOES IN GREEN HOUSE.

### 2.8.2 Processors

TABLE 3. CURRENT SUSTAINABILITY STRATEGIES PER PROCESSOR.

	PROCESSOR 1	PROCESSOR 2
<b>RECYCLE</b>	Glass Paper Carton	Water Material boxes Label
<b>REDUCE</b>	Plastic Energy – traditional fabrication practices	Waste Contamination – filter oil residue Water use Energy – Solar Panels, 100% LED light, biomass machine Pollution
<b>REUSE</b>	Metal caps	Biomass machine – olive pit for heat
<b>LOCAL</b>		Packaging
<b>ORGANIC/ECOSYSTEM MAINTENANCE</b>		Organic olives
<b>SOCIAL</b>		Sustainable tourism

In the process industry the main strategies in sustainability are on packaging and energy use (Table 3). Firstly, packaging is the brand and the image of the product, but it can have a lot of negative impact on the environment. Both of the processors look into impact reduction in that part by changing plastic for recycled material, often paper or cardboard. Secondly, both of the processors think about their energy use, however, the level on which they think about it is different. The processor that uses sustainability as a brand goes as far as thinking about the impact of energy on the environment. ‘The CO2 release we have made a natural cycle as we burn olive pit for heat and the CO2 of that will be obtained by the olive trees when they grow.’ – Processor 2. While, the other processor solely thinks about the direct reduction of energy by using a traditional passive distillation system. ‘We are going to keep respecting our traditional fabrication process.’ – Processor 1. Moreover, both of the processors work with, or think about implementing, solar panels. ‘It is possible that our next investment will be in solar panels, to replace humans in automated systems.’ – Processor 1.

Interestingly, even though a processor is closely involved with a producer to obtain its input, the processors do not seem to be concerned with the ecosystem to focus on for a sustainability strategy.

### 2.8.3 Distributors

TABLE 4. CURRENT SUSTAINABILITY STRATEGIES PER DISTRIBUTOR.

	DISTRIBUTOR 1	DISTRIBUTOR 2
<b>RECYCLE</b>	Material boxes	Carton

	Carton	Plastic
	Plastic	Organic material
	Organic material	
<b>REDUCE</b>	Organic waste	Organic waste
	Plastic	
<b>REUSE</b>	Plastic	
<b>LOCAL</b>	Partly local growers	Partly local growers

The main concern for distributors is to reduce waste within their part of the food chain. In order to accomplish this, they try to buy high-quality food. This drive is partly due to the fact that the income for distributors is directly related to the food products that they sell. Waste of food is equal to waste of money. Most whole sale market companies collaborate with the food bank to share food excesses. Moreover, the food that distributors share is for a great part locally produced, as a large number of farmers are positioned in the province of Granada. However, everything that is not produced in Granada is obtained from the port of Madrid, where food from all over the world is collected. Besides that, recycling of carton, plastic and organic material in the whole sale sector is obligated by the government (Table 4) (Figure 6).



FIGURE 6. RECYCLE BOXES FOR CARTON (LEFT), ORGANIC (MIDDLE) AND PLASTIC (RIGHT) AT THE DISTRIBUTION CENTER OF MERCAGRANADA.

## 2.8.4 Services

TABLE 5. CURRENT SUSTAINABILITY STRATEGIES PER SERVICE COMPANY. GREEN: COMPANIES IN THE SERVICE SECTOR THAT ACTIVELY WORK ON BEING SUSTAINABLE. YELLOW: COMPANIES IN THE SERVICE SECTOR THAT ARE NOT OR PARTLY THINKING ABOUT SUSTAINABILITY.

	SERVICE 1	SERVICE 2	SERVICE 5	SERVICE 3	SERVICE 4	SERVICE 6
<b>RECYCLE</b>	Shop material Carton Plastic	Carton Plastic	Material coffee cups Shop material Carton	Material coffee cups		Material coffee cups

			Plastic			
<b>REDUCE</b>	Plastic Waste Pollution Energy	Plastic Waste Pollution Energy	Plastic Waste Pollution Energy	Plastic Waste Pollution	Plastic	Plastic
<b>REUSE</b>	Energy Plastic Water	Plastic	Energy Plastic			
<b>LOCAL</b>	Fruits and vegetables		Fruits and vegetables	Fruits and vegetables	Milk Fruiteria	Milk
<b>ORGANIC</b>	Fruits and vegetables		Fruits and vegetables			
<b>VEGAN</b>			All food and drinks	Milk option Food options	Milk options	Milk options

There is a large variety of sustainability strategies that are currently used by the service sector. Depending on the concept of the shop the sustainability strategies are driven by governmental rules, such as reducing plastic by substituting plastic straws with carton, or by own incentive. It is seen that companies in the service sector with an intrinsic incentive for sustainable business operations are fairly complete with their environmental strategies. For example, Tienda de las Unicornios and Tienda la Talega buy organic and local fruits and vegetables, where the latter even produces from its own field. Moreover, they think further in terms of sustainability by using second hand or recycled material to build their shop (*Figure 7 a & b*). Moreover, together with Col&Flower they reduce plastic by buying macro packages and selling it in proportion to people who bring their own boxes is their business model (*Table 5*) (*Figure 7c*).

In general, most food services buy their food local from small fruiteries or local salesman. This could be because of convenience, solidarity with another small shop or out of intrinsic sustainable knowledge. ‘I want to help the small fruit store around the corner, so therefore I buy my fruits and vegetables there.’ – Service 4. ‘Our cow-milk is not from a macro farmer. It is a small place, with only milk from here from Granada, with only 100 cows: Los Pastoreros.’ - Service 6. ‘I try to buy things that are closer to me to try to reduce my pollution.’ - Service 3.

Remarkable is that almost all restaurants focus on recyclable material for coffee cups and plant-based milk options. Some restaurants go a step further by using bio-degradable coffee lids and substituting more food and beverage options into vegan (*Table 5*). This was especially important during the COVID-19 pandemic, when take away was the norm.

Also waste reduction is seen in some of the services. This could be by giving away food that becomes outdated (Service 1), by customizing the proportion (Service 5), or by making everything as fresh with highest possible quality as possible (Service 3).

Interestingly, reducing energy consumption in the service sector means buying a green label for energy company, while the processors mention solar panels for clean energy (Table 5 and 2).



FIGURE 7. THE ECOLOGICAL SHOPS SELLING FRUIT IN RECYCLED BOXES (A, LEFT); USING RECYCLED MATERIAL FOR SHOP (B, MIDDLE); WORKING WITH MACRO PACKAGING (C, RIGHT).

2.8.5 Consumers

TABLE 6. CURRENT SUSTAINABILITY STRATEGIES PER CONSUMER REFER TO THE FOOD INDUSTRY.

	CONSUMER 1	CONSUMER 2	CONSUMER 3
<b>RECYCLE</b>		Paper and carton	Glass, paper, plastic
<b>REDUCE</b>	Plastic Pollution – car pooling	Waste	Waste, eating food outside the season, packaging
<b>REUSE</b>			
<b>LOCAL</b>	Fruits and vegetables	Fruits and vegetables	Fruits and vegetables
<b>ORGANIC</b>	From village		From eco-shop
<b>DIET PREFERENCES</b>	Reduces meat consumption		

The main strategy for consumers that is perceived as sustainable is buying locally produced food or from local stores (Table 6). However, the consumer sector consists of lots of different individuals, that altogether have a large variety of sustainability strategies. Therefore, for one person it is important to reduce plastic or waste,

while the other has a focus on meat reduction. Besides the food industry, one of the participants also mentioned reduction of pollution by using a carpool system. In general, consumers in Spain focus on recycling of paper, plastic and glass.

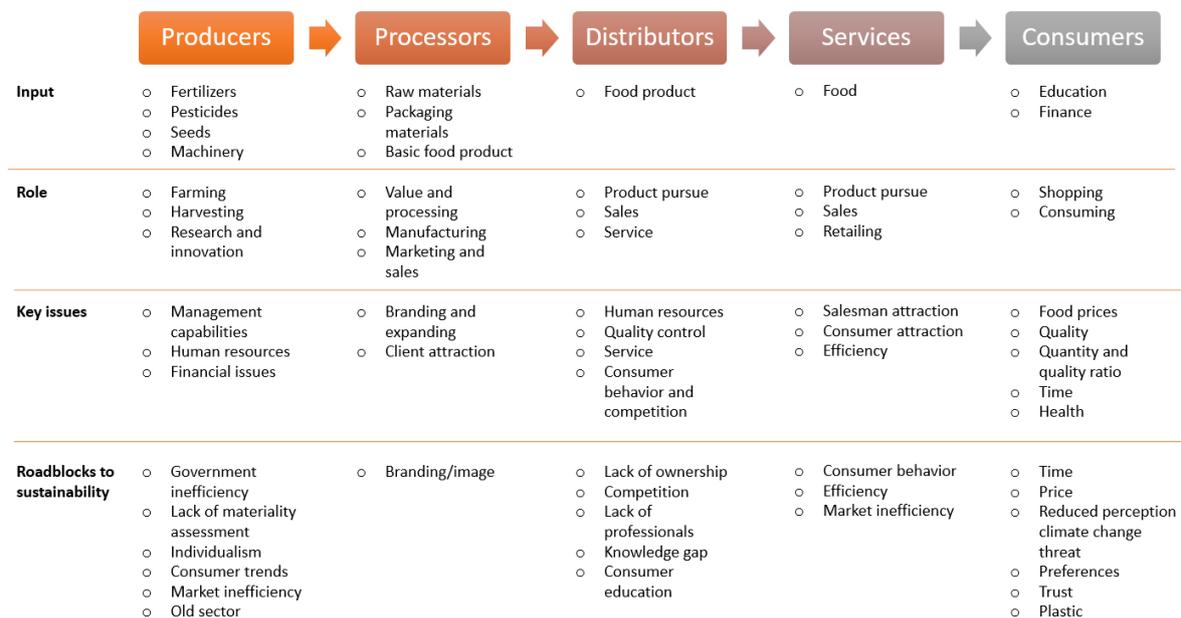
I have just described the background of the food chain of Granada, including the understanding of the problem owner, geography, economy, population, environment and current practices and sustainability strategies. In order to be able to analyze the information of the interviews (*Appendix 3*) about the key issues and roadblocks per sector in the next section, which could then be used for the solution finding brainstorm.

## CHAPTER 3. RESULTS & ANALYSIS



## 3.1 Food value chain

**TABLE 7. FOOD VALUE CHAIN OF GRANADA, INCLUDING THE INPUT, ROLE, KEY ISSUES AND ROADBLOCKS TO SUSTAINABILITY PER SECTOR.**



The food value chain displays a network of nodes that are involved in the process from growing food till it reaches the consumers (*Table 7*). The chain includes five different nodes that communicate and collaborate with each other. Starting with the producers (node 1) that have as their main goal to grow crops, research opportunities and negotiate sales prices. Continuing with the processors (node 2) that process and manufacture food products. The food products are presented to the distributors (node 3) such as the wholesale market and large retailers that present and sell the food to the service sector (node 4) that includes small retailers and restaurants. The food product will end up in the hands of the consumer (node 5) to purchase the product. In the entire food chain, there are several overall regulators that influence and monitor the value chain such as the Spanish government, EU-regulations, and non-governmental organizations.

The sections below elaborate further on the role of the different players in the food chain, their general key issues and leading practices that shed light on opportunities for change within the nodes and collaborations and influences across the food chain. Besides that, in most value chain constructions there is a unilateral focus on the business and management side. However, the necessity of incorporating sustainability into the business environment has been made clear. Moreover, the city of Granada has also taken steps in expressing their concern and involvement in the transition to circularity and sustainability in companies in the city (*OECD, 2021*). Therefore, in this value chain not only the general key issue will be assessed, but also key issues concerning the conversion to more environmentally friendly business operations, here referred to as roadblocks to sustainability.

### 3.1.1 Producers

The producers in the food value chain are the farmers that dedicate their lives to the production of crops (*Table 7*). Often these farms are small businesses, owned by a family for hundreds of years, and taken over by the next generation (*Figure 8*) (*Allagnat et al., 2018*). At the front end, these small-scale farms often have to deal with big corporate businesses for the input supply of seeds, fertilizers, machinery and pesticides. At the back end, the farmers sell their products and negotiate over the prices with small- or large-scale distributors. In between these players, the farmers have an important task to provide the world with an ongoing supply of food. In this perspective, the main role of the farmers is to do land work (e.g., sowing seeds, growing crops, harvesting, preparing land) and work on research and innovation to improve the food supply. However, the role of the

producers goes far beyond farming itself and most general key issues that farmers deal with lie in strategies for management and marketing.



FIGURE 8. AGRICULTURE IN PROVINCE OF GRANADA, (A, LEFT) PLANTS, AND (B, RIGHT) OLIVES.

### 3.1.1a General key issues

#### Issue 1. Management capabilities

##### *# Need for capable management strategies for risk management.*

Management strategies are particularly difficult in the farming industry due to insecurity on weather changes and yield production (Claire Schaffnit-Chatterjee, 2010). Year-round investments are placed in yields that take a full year cycle before capital can be obtained. This requires extensive consideration of price and interest rates before and after planting season (Claire Schaffnit-Chatterjee, 2010). An essential element for the producers is risk assessments. Risk management includes offering variation in crops and weighing the advantages and disadvantages of using long-term client contracts with large retailers. Long-term contracts are often seen as a safe haven for gaining financial stability and reducing risks. However, these long-term collaborations are not always exclusively beneficial. Farmers are often seen to bow to the enormous influence of large retailers that are extremely skilled in firm price negotiations. This requires an assessment between year-round financial security and fair pricing.

#### Issue 2. Human resources

##### *# Challenge to attract young, educated personnel and land workers*

One of the more practical issues that producers face is problems with attracting higher educated and land working personnel. There are two main issues that influence this challenge:

1. The time schedule of the labor hours in the farming industry are other than regular business hours, starting early in the morning and finishing at noon. Young, freshly graduated starters on the labor market who are searching for a 9 till 5 jobs are not attracted to this.
2. Working on the land or in a greenhouse is tough work. 'It is physically hard work. You are under the sun; it is very hot. But they tell me that they are sweating, that that's the problem.' - producer 3.

#### Issue 3. Financial issues

##### *# Competition from offshore farm investors.*

The competition for local farmers is being driven up by interference in the market due to offshore investments. Prior to production, the farming industry requires an extensive number of investments. In general, farmers do not have the capital to come up with these investments independently. Therefore, loans are provided by banks and governmental subsidies are assigned for farming machinery. However, often the middle eastern, wealthy community store their wealth in farm property (The Food Value Chain, 2010) and consequently, influence the

local prices. ‘The investors from Qatar, they have a lot of petrol money and they can invest with state cash, so they can drive down the prices.’ – Producer 1. These investments make it difficult for smaller farms to compete and negotiate a fair price for their products. ‘The oil is sold in Carrefour for prices below cost, I don’t understand how they are not sinking the market.’ – Producer 1.

*# Fish is not sold for a certain price per kilo, but through a bidding system.*

One of the biggest issues in the fishing industry is the price of fish, which is determined by a bidding system instead of a price per kilo. ‘So a kilo fish of a sort is presented to an audience and they decide in form of bidding what they pay.’ – Producer 2. The amount per fish will drop down until someone in the audience, a retailer or restaurant owner, takes it. This bidding system lays ground for uncertainty in income for the fisherman.

3.1.1b Roadblocks to sustainability

Issue 1. Government/subsidy inefficiency

*# Profit of subsidy on sowing is higher than actually collecting the crops.*

In some dry regions of Spain, the subsidies for sowing are more profitable than actually collecting the crops. ‘It is more profitable to put seeds in the ground and get the subsidy, but not collect the grain from the land because it is more expensive to put man/machine hours in there.’ – Producer 4. Producers rely for a great part of their income and management strategies on subsidies from the government. These subsidies sustain the farmers and ensure food availability by backing the existence of producers. However, this could work counterproductively, as their profitability could work as an impulse to increase food waste and, thus, reduce food availability.

However, if these subsidies could be an (unintentional) motive for unsustainable farming, then they could also be a push for sustainability. Governmental or EU subsidies on green initiatives could increase the ambition of producers to change their farming practices. Interestingly, there are a lot of green initiatives supported by the EU and Spanish government (Box 5), however, apparently this is not something that is seen as such by the farmers themselves (Box 6) (Allagnat et al., 2018).

**Box 5. Greening initiatives from EU**

The EU has set up a plan to stimulate farmers to transition to an environmentally friendly agricultural practice. This stimulant is shaped in the form of so called ‘greening payments. Farmers have the right to receive money from the EU after transitioning their current agricultural practice to practices that are beneficial for soil and biodiversity. In order to receive money, farmers need to have a proof of crop diversification to improve soil and ecosystem resilience (this means at least two crops per 10 ha land, however, at least three crops per 30 ha), maintenance of permanent grassland to enhance carbon sequestration and biodiversity, and dedicate 5% of their land for improvement of biodiversity habitats (including trees and hedges). Organic farmers automatically receive the greening payments (Sustainable Land Use (Greening) | European Commission, 2022).

**BOX 5. EXPLANATION GREENING INITIATIVES EU.**

**Box 6. Explanation skepticism amongst farmers**

The green incentive behind the goal of the Spanish government to increase the number of organic farms seems promising. However, in practice it is often seen that most of these organic productions occur in greenhouses with crops that are produced to export to European countries. Lately, there has been critique from Andalusian farmers and workers organizations that question the lack of local and social content in organic farms and their focus on export (Allagnat et al, 2018). That being said, the market in Spain for organic consumption is small. There is only a small market for organic producers that could directly sell to Andalusian consumers. It is a market that is developing, also with the help of the Andalusian Federation of Organic Consumers and Producers (FACPE), but it remains a slow process (Allagnat et al, 2018). There is skeptics on the current Andalusian market whether it is possible to honestly achieve socially and environmentally friendly development in the farming production.

**BOX 6. SKEPTICISM AMONGST FARMERS FOR GREENING INITIATIVES.**

## Issue 2. Lack of materiality assessment

# Fisherman corporation explicitly focus on ecosystem maintenance without obtaining a broader view.

- Speculation: driven by governmental requests

The fisherman corporation has a strong focus on maintaining ecosystem balance, without looking further to other harmful practices that could be managed. Some ideas were proposed about using electrical boats and solar panels on boats. However, this idea is at its starting point as only a few use solar panels and the implementation of electric boats seems far away. A reason for this could be that their sustainability quest is partly driven by governmental help and subsidy stops if they don't think about fish population, but keeps them from thinking further.

## Issue 3. Individualism

*# In general, farmers could be quite individual without seeing the advantages of collaboration amongst each other.*

For multiple generations, farmers have established their own way of working on their farm, separated from surrounding farms in order to obtain an advantage on the market. *'Here in Spain, farmers can individually get subsidized for their machinery, even if it is a tractor that is used once a year.'* – Producer 4.

## Issue 4. Consumer trends

*# Consumer trends and budget influence the opportunities for farmers.*

There are two ways the Spanish consumer can influence producers. On one hand the Spanish consumer market seems to be unready for higher price classes on high quality or organically-grown food products. Which is not very surprising, taking into account the financial status of people in Andalusia. On the other hand, organic and sustainable labels are used as a selling point for producers. *'My olive oil is already sold before I harvest it from the land, because my organic product sells itself.'* – Producer 1. It seems to depend on the niche of the product whether the consumer is ready to pay for it yes or no.

## Issue 5. Market inefficiency

*# The organic farming chain is sometimes seen to have some gaps; therefor organic standards could not be maintained over the entire chain of the food process.*

One of the difficulties that a producer could come across in pursuing an organic or sustainable business is that continuous steps along the food chain cannot be taken in a sustainable manner. While this is necessary, in order for the food product to enter the market with a sustainability label that justifies the price class of the product. *'For example, there are livestock farmers that raise their livestock biologically and sustainably, but there is no 'bio' processor. Therefore, the meat will be processed and sold as normal meat. Which prevents the livestock farmer to collect a fair price for their meat.'* - Producer 4. At this point, the higher price class covers the costs for a sustainable business strategy. In order to set up an ongoing organic/biological business market, the end-product must be fully biologically processed and a fair price should be handed to the producers.

Not only is the processing market not ready for change, the mindset of the financial sector is not adjusting to sustainable farming practices as well. As stated before, farming requires a certain amount of starting capital to invest in products and machinery. This starting capital could originate from subsidies, but also from loans from the bank. However, it seems to be that the knowledge of the banking world on sustainable farming could be improved, as requests for loans for green practices could not be integrated in the financing system of the banks. *'Farmers go to the bank to request a loan for a 'green' practice, but the bank doesn't understand this way of practice and suggests to the farmer that they could better get a loan for a new tractor.'* – Producer 4. The market being unready for sustainable processing, potentially forms a roadblock to sustainability for producers.

## Issue 5. Old sector

# Old sector, in general not open for change

*'Remember, some of these farms around here, already produce olive oil for 300 years' – Producer 1. 'I didn't have any experience, I was open to learn, while farmers who do this for 20 years are not eager to change. It is really difficult when someone has some guidelines, developed over 12 years, to get them to change.'* - Producer 3. Also, research shows that strong habits form a dominance over motivational tendencies (Gardner & Rebar, 2019) making it difficult to implement change.

### 3.1.2 Processors

The processors in the food chain of Granada are businesses that are involved in the production of food products prepared for the market. This could be directly by packaging fresh food products from the producers, or by food preparation into a final product. Businesses that are seen as processors are external fruit and vegetable packagers, preservation of fruits and vegetables, milling of oil, preservation and preparation of fish, and conversion of food products.

#### 3.1.2a Key issues

##### Issue 1. Branding and expanding

Processors are in between grower and seller and put their own brand on the product. Defining the target group and understanding their taste and attraction points of the product helps the sales rate. *'My target group are mainly people above 30, because the taste of my rum is quite specialized' – Processor 1. Defining the wishes of a new target group is important to expand to a new market. 'We know that the young people like their rum a bit sweeter, just to mix it. So, we need to look into that.'* – Processor 1.

##### Issue 2. Client attraction

Client attraction is time consuming, however a strong marketing strategy could improve the sales rate. *'I would like to have a marketing specialist. In average it takes six months to attract and make a new client.'* – Processor 2. An important aspect of that is the education of the clients and consumers. *'I had to educate my consumers that there is a normal oil for cooking and a special oil for salad. The last one is more expensive, but also you use only little bits of it.'* – Processor 2.

#### 3.1.2b Roadblocks to sustainability

##### Issue 1. Branding/image

*# Transition of sustainable packaging/labelling induces a risk of consumer loss due to loss of recognizability.*

The appearance of a product is important to attract the eye of a consumer and to recognize the product. Changing the look of a product by using sustainable friendly materials might confuse consumers and reduce recognizability of the product. *'However, we touch the current image of the product, our regular clients would kill me personally, because they are romantics of the product.'* – Processor 1. The risk of losing consumers is a drive to continue practice as usual.

### 3.1.3 Distributors

The distributors researched here are positioned in the whole sale market of MercaGranada. The whole sale market is a distribution place to sell food products on a large scale to clients, such as (small) supermarkets, fruiterias and restaurants. The companies in the whole sale market buy directly from the farmers or processors. In the last 20 years, a big change has been seen in the whole sales market. Whereas before, they only used to have little variety in products and were offered solely from local farmers. While nowadays, distributors are connected to the port in Madrid, where goods are imported from all over the world. This way the whole sale market can sell almost all fruits and vegetables all year round. A distinction could be made between independent whole sale marketeers and contracted whole sale marketeers. The first group simply sell their products as independent retailers (this is the whole sale market of MercaGranada), whereas the latter has fixed contracts with growers and big supermarket chains.

#### 3.1.3a Key issues

##### Issue 1. Human resources

*# Working hours of whole sale market are not attractive for young professionals.*

The whole sales market has to open at 4 AM as clients purchase fresh products before opening the shops at 9 AM. These working hours are not particularly attractive to young, high educated professionals. *'Educated people don't want to work here, they want to work from 9 till 5.'* - Distributor 1. *'We actually have arguments amongst our older generation with the new generation, that does not want to work at these hours.'* – Distributor 2.

Moreover, the whole sale market is not seen as the most sexy, innovative sector, therefore higher educated people tend to pass on a career in this path. *'From all of the whole sale markets here at MercaGranada, I am the only person with a higher education degree.'* – Distributor 1. While educated people are important for management and efficiency in the market.

#### Issue 2. Quality control

*# Increasing number of producers complicates quality control.*

Increasing number of producers has complicated the task of quality control. *'We used to have only 2 or 3 growers, now we work with 150 suppliers and 40 growers to have everything for our clients.'* – Distributor 1. The distributors need to increase the number of producers in order to satisfy the growing demand of consumers for year-round product availability. However, this makes the task of quality control more time consuming. *'I actually don't have time to check all the boxes that are delivered to me.'* – Distributor 1.

#### Issue 3. Service

*# There is a grey area in quality control, which provides a sales risk along the food chain.*

Distributors check for quality and choose the products they want to sell. However, as stated before, quality check for all boxes is impossible. There is a grey area around responsibility for the quality of food that is sold. *'The producers give me an opportunity to sell, so if I don't sell due to quality issues, I could have conversation with them over price. Same with the fruiterias that buy from me, when it is not a good batch, they can come back to me and also negotiate over price.'* – Distributor 1. Therefore, it is important to have mutual understanding between seller and buyer in order to spread the risk of selling amongst the different companies in the food chain. *'So we need good relations with the growers and my clients.'* – Distributor 1.

#### Issue 4. Consumer behavior and competition

*# Consumers tend to choose large supermarkets over small retailers, which influences distributors in the whole sale market as they mainly serve small retailers.*

Retail channels have expanded to meet global demand of convenience for purchasing goods. The whole sale market in MercaGranada distributes fresh food and food products to small supermarkets, fruiterias, and restaurants. A shift is seen from people that go from small supermarkets and fruiterias to big supermarkets. *'Less and less people go to the fruiterias ... Mercadona is everywhere, also in city centers, and it is super easy, they have parking spaces and all products in one place.'* – Distributor 2; *'Customers easily go to big supermarkets where they buy all-in once, instead of going to the fruiterias.'* – Distributor 1.

Distributors are indirectly influenced by the choices of end-consumers in the direct retail branch. Large supermarkets have their own contracts with individual growers and distributors; therefore, they bypass the whole sale market and indirectly form a competition. *'Now people eat fast and care less, so it is changing. The young people buy fast and eat fast. And do not take lots of time to see where they buy it.'* - Distributor 2. This consumer behavior forms a challenge for the whole sale market to survive. Innovative distributors continue to search for new retail channels to meet the needs of local consumers. *'During covid I set up a home delivery service, this is something I want to continue now, to expand my business.'* – Distributor 1.

### 3.1.3b Roadblock to sustainability

#### Issue 1. Lack of ownership

*# Lack of ownership on the product and building reduces the awareness to pursue sustainable opportunities.*

Companies in the whole sale market distribute food from growers to the service sector without producing anything themselves. Moreover, they rent their distributing places from MercaGranada, thus, they don't own or control the building (Figure 9). *'Well, we are in a wholesale market, so if it was my own business, I could install solar panels or do something with water. But we cannot do that because we belong to the whole sale market.'* – Distributor 1. This influences the sustainability sentiment of the whole sales market. There seems to be a lack of ownership as it comes to sustainable change as the responsibility is not in their hands.

#### Issue 2. Competition

*# Competition between distributors reduces opportunity for collective sustainable strategies*

Distribution and retailing are one of the most competitive industries with enormous amounts of choices for clients and end-consumers. In order to keep up, retailers and distributors need to distinguish themselves. *'They are all my competition, so what is good for my company cannot be good for the others.'* – Distributor 1. There is a high demand from the consumer, that drives the competition and the wish for distinguishment. However, this reduces the openness for collaboration, while that could be the only way forward to a sustainable path, especially, in a closed of market as MercaGranada. *'If we want to work on a sustainable project, all the wholesale markets should work together to do this.'* – Distributor 1. Nevertheless, the willingness to work together is far off.

#### Issue 3. Lack of professionals

*# Lack of professionals throughout the whole sale market, reduce the possibility for collective sustainable strategies.*

As stated before, the whole sales market has a problem with attracting educated talent. A lack of professionals could make it more difficult to align and create ideas that bring the whole sales market forward. *'If we want to work on a sustainable project, all the wholesale markets should work together to do this. But it is difficult because in other companies there are no professionals that think about sustainability, so it is difficult to set it up.'* – Distributor 1.

#### Issue 4. Knowledge gap

*# Missing knowledge on implementation of sustainable strategies.*

There seems to be a lack of understanding on sustainability strategies in the whole sale market. *'In terms of sustainability, I don't know how to implement that.'* – Distributor 1. The sustainability quest seems to be seen as too big and could therefore not be managed properly at once. The gap in knowledge and lack of practical handles to take the first steps to apply a sustainable strategy seems too difficult to overcome. This reduces the ability and willingness to change.

#### Issue 5. Consumer education

*# Consumers seem to have a lack of understanding on the origin of food.*

The behavior of end-consumers determines the way of working of all the nodes in the food industry. However, in general, most end-consumers do not have a relation to the food industry despite purchasing its goods. Therefore, an important task is providing education and information to the end-consumer. This aspect could be

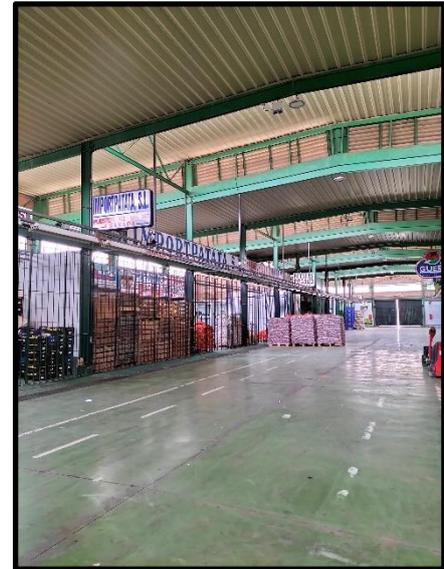


FIGURE 9. HALL OF DISTRIBUTOR AT MERCAGRANADA.

crucial for distributors in order to keep their business going. *'Now consumers don't always know the origin of the fruits, so consumers can't compare to what is better. I would like to educate consumers on this.'* – Distributor 1. Consumers' choices could be directed by handing information about the origin and labor that has been put into the product. As well as providing the opportunity for consumers to become aware of the food chain prior to the purchased goods. Directing the end-consumer by means of education provides chances for independent distributors.

### 3.1.4 Services

Service nodes in the food chain directly offer fresh or processed products to the end-consumer. The service node includes retailers and restaurants. The service sector purchases fresh food products from distributors or other retailers depending on the size of the service company and consumer niche. Products from the service sector could be purchased as direct consumables by consumers through presentation of the products in sheds or after processing of the food products by the service industry. The service industry provides a broad range of sections and themes to attract the consumer and to distinguish and establish their consumer base. Nonetheless, all strive for the same goal to optimize consumer satisfaction.

#### 3.1.4a Key issues

##### Issue 1. Salesman attraction

*# Difficulty for small restaurant(s) to attract salesman to be able to buy products for the restaurant.*

Small service business owners can come across the problem to attract salesman from large brands to sell their products to them. Business owners need those salesmen to be able to sell food and drinks to their consumers. *'My main problem is that my restaurant is too small to attract salesman to actually come to me to sell me stuff.'* – Service 6.

##### Issue 2. Consumer attraction

*# Especially small, (eco-) service businesses are always searching for consumers.*

Especially in Granada, consumer attraction is a challenge that is seen in services that prioritize organic and sustainability in their business operations. *'I am always searching for new consumers.'* – Service 1, *'Having enough consumers is continuous problem, I have Erasmus students and foreigners, but not regular (Granadian) consumers.'* – Service 5. According to them, this is dependent on the perception of price, familiarity, and openness of consumers in Granada towards a different view.

*# Consumers prefer large supermarkets over small supermarkets/fruiterias.*

The convenience of a large supermarket is a big attraction for consumers and makes it difficult for small supermarkets or fruiterias to maintain their consumer base. The age of consumers at small retailers and fruiterias is rising. *'A big part of my consumers are older people, because well, here in Albaicin my small shop is more convenient for elderly.'* – Service 1 (Box 7).

**Box 7. Albaicin** is an area in Granada that is situated on a hill, therefore, it is easier for older people who live in Albaicin, to get their groceries at a supermarket nearby.

#### BOX 7. EXPLANATION ALBAICIN.

##### Issue 3. Efficiency

*# Finding high quality and organic products is time consuming.*

It is a time-consuming task to find the right high quality and organically grown food. Especially for small shop owners, who have criteria for organic or locally grown food. *'It takes a lot of time finding the right products and talking to different suppliers'* – Service 1, *'I have my standards shops where I get my products, but I have to be critical on the quality, when this is insufficient, I go to another place'* – Service 5, *'I am always searching for high quality in order for it to last'* – Service 3. The quality of the food is a great attraction for customers and important to maintain a certain sustainability level in terms of local, organic, and reduction of waste. To provide this, time and time again a selection between suppliers and distributors must be made to find the best products.

### 3.1.4b Roadblocks to sustainability

#### Issue 1. Consumer behavior

*# Consumers in Granada are not initiating that change, as they are used to their own ways and not always ready to adjust and appreciate organic, sustainable or plant-based food.*

Consumers are an important part to open up a successful sustainably (aware) business. However, they could be a burden when they are not ready to adjust to organic and plant-based standards that restaurants or small supermarkets want to provide. This could counteract the sustainability drive from entrepreneurs. Especially in Granada people tend to be very closed minded towards change and it seems that Granadian people don't want to pay more for fair, organic and good food products in restaurants. *'People in Granada do not appreciate a good and fair coffee yet.'* – Service 6, *'People just want a cheap coffee with free food, instead of fair and organic food and drinks, which is healthier for people and planet. They don't want something they don't know, stubborn people in Granada.'* - Service 5. This seems to be frustrating for sustainably aware entrepreneurs to proceed business in Granada.

#### Issue 2. Lack of awareness

*# For some entrepreneurs climate change is not something that concerns them.*

For some entrepreneurs there is a lack of awareness towards the opportunities for sustainability in their own business. The idea that every company and person could contribute to reduce the effects of climate change is not a general thing. *'Oh yes, sustainability, that is not really something for me'* – Service 4.

#### Issue 3. Market inefficiency

*# Sustainable products are not always available.*

Market inefficiency is one of the blocks that could make it difficult for companies in the service sector to continue taking steps in a sustainable direction. One example of a coffee bar owner: *'I want to use biodegradable plastic bags, but are not always available, because as small company owner it is not obligatory for me to use them. So, the availability of this product is not consent and this makes it more difficult for me'*- Service 6. It is easier for a business to become more sustainable when the practice of the strategy can become a habit. When products are not continuously available, the process of becoming it a habit is disrupted. Moreover, some products that are sustainable at one end of the line are not sustainable at the other end. For example, substitute milk options have a casing that is difficult to recycle.

### 3.1.5 Consumers

End-consumers are exposed to an abundance of different channels of consumption. There are multiple forms of restaurants and big or small supermarkets that can supply their search for food. Within this market there are various themes addressed with social, economic, or environmental intentions to distinguish one business from another. The offers of the food market to the consumer are endless. However, consumers themselves are shaped by their education, social, economic, or commodity. Consumers are at the final point of the food chain and the food searching behavior of consumers could directly influence the market.

There is a list of categories that a consumer thinks are important before purchasing a product. This list starts in this order with price, quality, appearance, and health of the product, whereas an environmental assessment is the last priority (Dawar & Parker, 2018).

#### 3.1.5a Key issues

##### Issue 1. Food prices

*# People in Granada are not very wealthy and prices of food are an important daily life consideration.*

**Box 8.** AlCampo is a big supermarket chain.

**BOX 8. EXPLANATION OF ALCAMPO.**

One of the main issues consumers consider while pursuing food is the price. 'Of course, I look at the price.' - Consumer 3. Every day, consumers have to make an economic decision depending on their earnings and the importance of the purchased goods. 'And gazpacho, I buy there at AlCampo. [Researcher M: but you can buy gazpacho in fruiterias?]. That is true, but the price is better in AlCampo, and they are good as well.' – Consumer 2 (Box 8). This price angle is a major drive for consumers where, especially in Andalusia, consumers do not always have the broadest choice. As described before, Southern-Spain is not one of the most prosperous regions in Spain and people have to think economically about their daily purchases of food. Furthermore, consumers nowadays are accustomed to certain (low) prices of food, whether this food is derived from bio-industry is not important.

#### Issue 2. Quality

Quality is often mentioned as the most important component to purchasing fresh food products in either supermarkets or restaurants. 'But I buy my fresh food in the fish-shops or fruiterias. Those things I don't want to buy in supermarket, because the quality is super bad.' – Consumer 2. 'Food is very important when I choose the place. If I want to eat fish, I go to a place where fish is good, not for a meat place where they also sell fish.' – Consumer 1.

#### Issue 3. Time

##### # Purchasing food in different markets is time consuming

Large supermarkets have everything in one place, provide commodities and save time to purchase products. 'You can go to Mercadona, and you buy everything, it is less quality but you need less time.' – Consumer 1.

#### Issue 4. Health

In Spain a lot of chemicals are used to protect the fresh food products in the growing process. Consumers take this into consideration while purchasing a product as it has consequences for their own health. However, this characteristic does not give top priority over other considerations.

### 3.1.5b Roadblocks to sustainability

#### Issue 1. Time

##### # Pursuing organic/sustainable products could be time consuming.

In Granada, it takes time to pursue food that is completely sustainably grown. Consumers need to do research on different restaurants and shops to understand the origin and process of a product. Furthermore, after all this research, consumers have to refrain from the commodity of one commercial supermarket and invest time in pursuing specific goods in specific shops.

##### # Opening hours of the specific shops

Specific shops, such as fruiterias, fish and meat markets, have limited opening hours in Granada. 'For local markets, the schedule, the time where they open and close is a problem. The fish shops, for example, they are only open in the mornings. I cannot go to the shop in the morning, so I cannot buy there, so I have to buy it in the big shops like Mercadona.' - Consumer 1. In order to be able to buy at local shops, consumers need to be flexible to go to the shops with different time schedules. This could be impossible to combine with work schedules, and could therefore be a drive to purchase goods at big supermarkets.

#### Issue 2. Price

##### # Some people cannot afford organic food

It seems that younger people are more concerned about the environment according to the research of prof. Rios, however, they struggle with the price tag. 'Younger once look more to organic food than old people. But the problem is that young people have less money to buy organic food products. Some young people really want to buy environmentally friendly or organic products, but they don't have the money.' – Prof. This was also mentioned by a younger participant as the main reason. 'Organic products are way more expensive than they should be.' - Consumer 3.

# There is a perception that Mercadona (*supermarket chain*) is cheaper

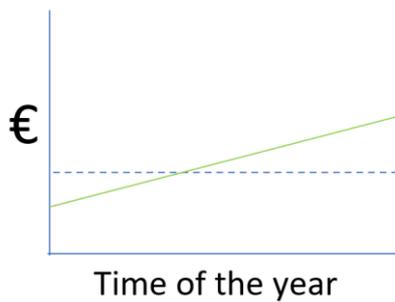


FIGURE 10. PRICE OF A PRODUCT OVER THE TIME-SPAN OF THE YEAR. (DOTTED LINE) PRICE MERCADONA; (GREEN LINE) PRICE FRUITERIAS.

There is a perception that large supermarket chains such as Mercadona are cheaper. 'I do think Mercadona is cheaper.' – Consumer 1. However, according to Distributor 2 of the whole sale market, this is not always true. 'Mercadona agrees on a price for the fruits and vegetables at the beginning of the year, and keeps it at a constant price for the entire year.' – Distributor 2 (Figure 10). Over the year this creates a steady, low price without taking into account in-season products. However, an increase in product availability during a specific fruit or vegetable season decreases the price. Since Mercadona works with fixed prices, they won't have a reduction and are actually more expensive for these products.

#### Issue 3. Reduced perception of climate change threat

People in Spain, in general, don't see climate change as a threat for themselves or for their loved ones. Professor Rios told me that 'But they think that it is not a risk for the Spanish people. They don't have a real perception of the risk. They think it is something far from here, out of this country.' – Prof. Montoro Rios. If the threat is not seen by the Spanish citizens, it is really difficult move them into making sustainable choices.

#### Issue 4. Preferences

# *Organic products look ugly, so consumers in Granada don't buy them.*

According to distributors, who come across the opinion of consumers quite often, consumers in Granada give a high value to the esthetics of their fruits and vegetables. 'People in Granada don't like organic products, because they look ugly.' – Distributor 2. 'The organic food that is produced here in Spain doesn't look that good, in the eco-stores.' – Consumer 3. Which means that pursuing a product seems to be mainly based on the appearance of the food and not on the quality. In general, organic products that are produced or end up in the Granadian eco-supermarkets don't look as pretty and shiny as the fruits and vegetables produced by regular farmers. A shiny and pretty appearance of a product could give the idea that the product is better and more tasteful than a product that does look a bit pale like an organic product.

#### Issue 5. Distrust in eco-labels

One of the consumers pointed out that in general he thinks fruits and vegetables grown in his village are organic without using the label. 'I think, it is more marketing than other things in the supermarket. It is different when you buy in a village, when you buy locally. Then you are sure it is organic. But when in the supermarket it is organic with the certificate of organic, it is good and it is marketing.' – Consumer 1. 'Sometimes for me organic food is equal to food I can find in a normal fruiteria. But just because they use the organic label, they can make the price higher.' – Consumer 3.

#### Issue 6. Plastic

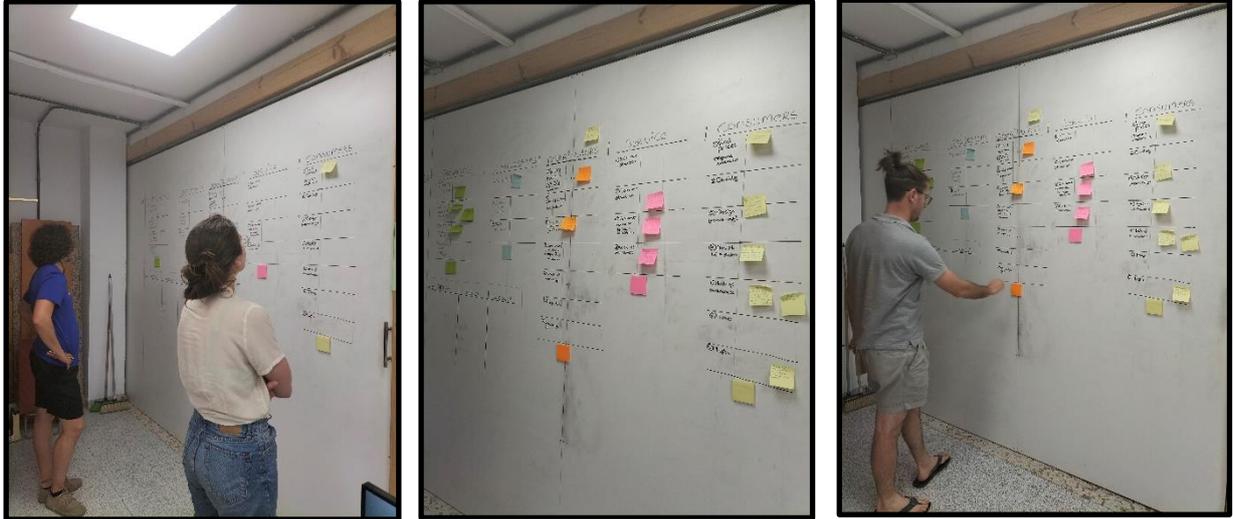
'Everything is in plastic.' – Consumer 2. In the supermarkets and fruiterias, fruits and vegetables are put in plastic bags per amount and at the cash desk all the purchases are placed in another plastic bag. 'I prefer to use my own bag and put my food in there.' – Consumer 2. 'I try to buy things that are not wrapped into how many layers of packaging and plastic. It's ridiculous.' - Consumer 3.

Now that the information from the interviews is analyzed and categorized into key issues and roadblocks to sustainability, I collected enough insides to conduct a brainstorm with the Team to come up with solutions for the problems.

## 3.2 Brainstorm

### 3.2.1 Part 1

Part 1 of the brainstorm was about expanding knowledge and finding gaps. All participants wrote down at least three concerns from all the key issues and roadblocks in the food value chain that had been presented (*Figure 11*). The main concerns that were perceived by the participants could be brought into three bigger themes: education, government and marketing.



**FIGURE 11. BRAINSTORM PART 1, PARTICIPANTS WRITE DOWN MAIN CONCERNS AT KEY ISSUES AND ROADBLOCKS WRITTEN ON THE WALL.**

### 3.2.2 Part 2

Part 2a of the brainstorm was about finding solutions for the main concerns that arose during the first round (*Figure 12*). The solutions that arose can be divided into multiple sub-categories (*Appendix 5*):

- Education (health; organic food);
- Government (lobby laws; funds & subsidies);
- Optimize supply chain organic food;
- Marketing (social media; video; famous people);
- Reduction (plastic; waste);
- Certificate (eco-label);
- Raise awareness of social problems.



**FIGURE 12. PART 2 OF THE BRAINSTORM, PARTICIPANTS WRITE DOWN SOLUTIONS FOR THE MAIN CONCERNS OF PART 1.**

### 3.2.3 Part 3

The solution findings of the Biomimicry Team are mainly orientated on consumers, producers and services. Of the 15 separate idea ideations, 9 focused on consumers, 5 focused on producers and 1 focused on the service sector (*Appendix 5*).

The sub-categories were divided into 21 divisions of how, wow and now. After voting, the three subcategories that were most interesting were marketing, education on organic food and materiality assessment (*Table 8*).

**TABLE 8. OUTCOME OF PART 3 OF THE BRAINSTORM: ACTIONS FOR BIOMIMICRY TEAM.**

<b>Marketing</b>	<b>Education on organic food</b>	<b>Materiality assessment</b>
Poster campaign <ul style="list-style-type: none"> <li>- To get out of: change the world not your neighborhood</li> <li>- Define one goal</li> </ul>	Series of modules about sustainability in the food sector for primary school or high school children <ul style="list-style-type: none"> <li>- A package that can be bought.</li> <li>- Biomimicry Granada Team comes in to give lessons</li> </ul>	Define impact generators for sector <ul style="list-style-type: none"> <li>- Report on where impact can be made</li> <li>- As consultancy for company</li> </ul>
Green label for restaurants; Biomimicry Granada approved. And built marketing around that.	Fact section on website of Biomimicry Granada about organic food <ul style="list-style-type: none"> <li>- Impact on environment</li> <li>- Advantages for Health</li> <li>- Meaning of eco-labels: clarify how they work, talk to experts, read the research</li> </ul>	Collaboration with government to assess where individuals can make an impact. <ul style="list-style-type: none"> <li>- To provide a package with tips to adjust life style or ways of buying.</li> </ul>
How do we make sustainability cool again? <ul style="list-style-type: none"> <li>- Difficulty: sustainability has a grayish image</li> </ul>	Develop an experience <ul style="list-style-type: none"> <li>- Demonstrate difference between organic and non-organic</li> <li>- Or show what food-waste is</li> </ul>	
Use famous people <ul style="list-style-type: none"> <li>- Make a football team sustainable</li> </ul>		
Become social media influencers <ul style="list-style-type: none"> <li>- Use TikTok</li> </ul>		

# CHAPTER 4. CONCLUSION & RECOMMENDATIONS



First a description of the total value chain is made with opportunities and shortcomings to increase sustainability in each sector and over the entire value chain. Within this section, explicit action points are described for Biomimicry Granada to undertake. After that, the outcomes of the brainstorm are assessed and converted into more action points. Altogether, we integrate the outcomes of the literature study, brainstorming and interviews to come up with clear advice for what Biomimicry Granada can do for sustainability in the food value chain of Granada.

## 4.1 Producers

At this point in time, the EU and the Spanish government plan to invest a lot of money to enhance sustainability in this sector (*Rural development plan, 2021-2027*). Moreover, quite recently in 2021, the agriculture plans have changed and plans are made to also modernize small producers and support young entrepreneurs to start organic farms (*CAP Strategic Plans, 2021*). Nonetheless, there still seems to be an overall perception that greening subsidies don't exist (*Box 6*). Therefore, it seems to be exactly the right time for Biomimicry Granada to step aboard and change this sector.

In order to do so, they have to overcome one general problem that we have seen in our research, namely the unwillingness of producers to change. To overcome this problem, there are two things that are crucial for creating an opportunity to work with them: 1) understanding what is important for the production of producers; 2) offering a financial business plan. Firstly, we found that producers have understood that a healthy ecosystem is necessary for their business to continue (*Box 9*). However, lots of producers still work with practices that are not beneficial for the ecosystem. There seems to be a gap between understanding and action. Thus, there needs to be an emphasis on improving ecosystem health to guide the producing sector towards sustainable practices. Secondly, greening subsidies mainly focus on sustainable modernization of farms and expanding organic land, aka improving healthy ecosystems. The Team has to design a business plan to facilitate producers in using organic practices with the requirements to qualify for the greening subsidies. This start, with financial stimulus, simplifies the introduction of the next step, namely conducting a materiality assessment to reduce the impact throughout the entire business plan. To conclude, Biomimicry Granada could supply the knowledge and tools to guide producers to meet the funding requests of the government, and accordingly, provide a next step towards sustainability in this sector.

Another way Biomimicry could aid farmers is through initiating collaborations between farms. It could help to push green initiatives forward, even when the government is coming short on financial support. Combining temporary/seasonal usable machinery amongst farmers could induce a reduction in financial demand for machinery. In the United States, Faith Gilbert wrote a 'guide to sharing farm equipment' to the request of farmers who were inspired by his view on collaboration frameworks between farms. Pursuing co-ownership may encourage collective actions to global insecurities for farmers in the following decades, such as climate change, financial gaps, and globalization of the market (*Gilbert et al., 2017*). Collaboration through equipment sharing could unlock a budget for green sustainable innovation. Which, together with the sharing of knowledge and inventions, can boost sustainable innovations in this sector. This innovative culture could attract young, talented employees and altogether give an enormous lift to the sector.

### 4.1.1 Action points

Below I will provide action points for Biomimicry Granada of the ideas described above. I would advise focusing on the first action point rather than on the second. The two concepts can complement each other.

1. Sustainability consultant for producers.
  - a. Understand business problems of producers - use their language.

#### **Box 9. Story – Ecosystem focus**

The focus on a healthy fish population was so strong, that after forty-six minutes of conversation about sustainability *producer 2* specifically needed to be asked about other sustainability strategies, such as plastic reduction or energy consumption, in order to tell us about some other sustainability ideas in the corporation.

#### **BOX 9. STORY FROM AN EXPERIENCE IN AN INTERVIEW WITH PRODUCER 2.**

- i. Work sustainability plan around it.
  - b. Use practical examples of how materiality assessment would improve the business.
    - i. Demonstrate an increase in income by obtaining a more sustainable practice, for example: reduction in use of pesticides.
  - c. Use the materiality assessment as a lever to access EU grant proposals/subsidies to obtain money.
  - d. Design financial plan for Biomimicry Granada.
    - i. For example: an agreement to be paid 10% of the revenue from the subsidy.
- 2. Facilitate collaboration between producers.
  - a. Build relationships with producers.
  - b. Analyze the cost-benefit of collaboration of equipment.
  - c. Organize meetings where producers can meet each other and discuss collaboration through equipment sharing.

## 4.2 Processors

The task of processors is to convert food into a final product, for which I will discuss two large problems in terms of sustainability: 1) packaging, and 2) energy consumption.

What we have seen so far is that processors are focused on what the client sees, which is the packaging of their brand. The main function of food packaging is to preserve quality and safety against diseases, but nowadays it is also important to define the brand (*Guillard et al., 2018*). There is a high environmental concern involved when packages convert into waste (*Williams & Wikström, 2011*). Especially, the impact of plastic compared to paper or bio-degradable options (*Guillard et al., 2018; Ncube et al., 2020*). Producers in this research seem to understand the impact of packaging, and take steps toward environmentally friendly packaging. As it is important for them, it might also be important for others. However, eco-friendly packaging is not as easy to correctly implement as it sounds. In order to do it right, a full assessment of the food product and the packaging material should be made, to prevent food waste or unintended green-washing (*Guillard et al., 2018*). Another important thing to mention is the importance of visibility of a brand by use of its packaging (*Gede et al., 2021; Reverdy et al., 2010*). This is a shortcoming for rapid changes as there is a chance of losing clients by reduction of recognizability or substitution of the original feeling of the product. Biomimicry Granada could play an asset in these two obstacles by using their expertise to assess the correct packaging methods while educating clients about the upcoming adjustments. Hereby, proper communication and explanation is essential, which is something the Biomimicry Team has experienced over the years of providing workshops.

Another important feature that has been mentioned by the processors is that food production requires a lot of energy consumption (*Legorburu & Smith, 2018*). Manufacturing and converting fresh foods into a final product are priorly fossil fuel induced. One of the challenges to reduce fossil fuel emission and thereby also reducing cost, is the use of alternative energy sources. Especially nowadays, with increasing gas prices, a reduction of energy consumption could be a drive for processors. Right now, some of the processors are thinking about solar panels as the next step towards sustainability. Though, there are other strategies to reduce energy use. Biomimicry Granada could provide advice on easy steps for processors to undertake to cut down their energy bill. This could be in two forms: 1) reduction through process optimalization, and 2) own energy generation. Firstly, the Team could perform an energy analysis in the business and assess which part of the process should be optimized to gain the most energy reduction. A method that could be applied is 'Business Process Re-engineering' to improve productivity while at the same time ameliorating efficiency (*Gunasekaran et al., 2010*). Secondly, they could provide advice about which strategies for energy generation would be most suitable for the business.

### 4.2.1 Action points

The first action point below can be used as an entry strategy for Biomimicry Granada. It will show the benefits to the processors to continue to work together.

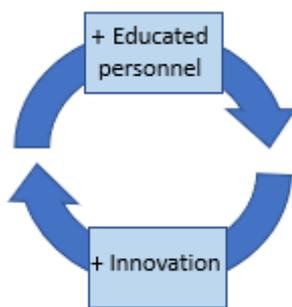
1. Energy analysis and advice; to reduce energy bill for processors.
  - a. Analyze energy use of processing industry.
  - b. Provide advice on energy reduction strategies. Examples:

- i. Process optimization:
      - 1. Business specific efficiency of automatic systems;
      - 2. LED lights
      - 3. Insulation
    - ii. Energy generation:
      - 1. Convert waste into power: biomass machine;
      - 2. Solar panels
      - 3. Wind energy
  - c. Clearly communicate the price reduction that these strategies create.
  - d. Design financial agreement.
    - i. For example: Biomimicry Granada works for a certain fee.
- 2. Materiality assessment to improve packaging strategy.
  - a. Provide a materiality assessment of the product and packaging.
  - b. Analyze the best packaging strategy for the product and environment.
  - c. Design financial agreement.
    - i. For example: Biomimicry Granada works for a certain fee.

### 4.3 Distributors

After assessment of the distributive sector, I found it is a big hurdle for Biomimicry Granada to proceed with pursuing sustainability strategies here. The two main problems that could reform into opportunities within the distributive sector are the lack of knowledge on sustainability and difficulty in finding educated personnel. Below I will briefly describe why these issues do not fit in the normal business practices of the Team.

Distributors seem to have a lack of knowledge on implementing sustainability strategies. An obvious solution for that could be that Biomimicry Granada offers itself as consultancy firm to inform them (*see 4.1*). However, there are two shortcomings in this sector that make me advise against this idea: 1) lack of ownership (*see 3.1.3b issue 1*), and 2) no direct profit. Firstly, the lack of ownership makes it difficult to create awareness towards sustainability in this sector. Secondly, the sustainability strategies that could be applied won't affect their profit. Therefore, it seems like a great quest to work in this sector without an internal or external drive.



**FIGURE 13. POSITIVE CYCLE OF EDUCATED PERSONNEL INCREASES INNOVATION.**

Moreover, the second problem, finding educated personnel, could onset a cycle of innovation, as young, educated people start to work in the sector. They could drive innovation and collaboration within the whole sale market, which makes it more attractive to others to start working there, which increases the innovation capability (*Figure 13*). The following idea seems farfetched, but Biomimicry Granada could use their network to connect people and solve organizational needs of distributors while earning an income as an organization. Think of it as an employment agency, which also provides training sessions to increase biomimetic knowledge. If successful the sector gets highly educated and well-trained employees, and at the same time these employees will apply their biomimetic knowledge within the sector.

#### 4.3.1 Action point

This action point describes an out of the box strategy for Biomimicry Granada to look into.

1. Develop a training/employment agency
  - a. Define the existing network of people that could work in that sector.
  - b. Connect them with companies in the whole sale sector.
    - i. This could be expanded to companies in the entire food chain.
  - c. Provide biomimetic training sessions during and before the working period.
  - d. Design a good earning model
    - i. Example: Biomimicry Granada receives a percentage of the first-year salary.

## 4.4 Services

The service sector is fairly broad with different degrees of sustainability in the business operations. Two main groups can be distinguished that have different problems: the service companies with intrinsic sustainability incentive and the service companies without sustainability awareness. In this section solutions directed to these two groups are discussed. After that, solutions for problems from the consumer perspective towards the service industry are addressed.

The first group understands the measures it has to take in order to be sustainable. For this group, the difficulty doesn't lie within the search for other strategies, but more to connect their business to consumers. A great part of the business problem statement for these companies is attracting consumers. Reasons for that could be that in Granada they are not ready for sustainable, or vegan restaurants, or think that eco-supermarkets are more expensive. This behavior affects the service sector; therefore, their focus must be on influencing potential consumers. This could be achieved through marketing from the products and service, or through education from the consumers in the shop. The latter is already being done by most of the shop owners during daily talks with consumers. However, these are consumers that already come to the shop; the trick is to attract new consumers. Biomimicry Granada could step into this by helping to organize lessons in the shops to explain about where food comes from, why organic looks different, what it does with price, how to cook and preserve. Successful outcomes of these classes are a gain in profit for the shop owners by expanding their consumer base. However, these concepts would cost the Biomimicry Team a lot of effort without gaining a lot of economic benefits and I would not necessarily advise them to pursue this concept.

### Box 10. Out of the box – into a box

One out of the box idea for Biomimicry Granada to improve marketing strategies for eco-shops/restaurants is raising questions such as:

How does nature make itself attractive?

What is most important? Smell? Visual attraction? Colors?

### BOX 10. OUT OF THE BOX IDEA.

The second group have been shown to be mainly driven by consumer requests (plant-based drinks or food) or governmental obligations (substituting plastic straws). A great part of what seems to be missing here is awareness of the possibilities and the impact they can make. A role for Biomimicry Granada can be found here, to advise and strategize the steps that these shops have to take to become more environmentally friendly by creating a 'service sector sustainability package' (SSSP). This has to be in collaboration with the municipality of Granada, in order to have a client to work for. The municipality of Granada has shown to invest in programs that sustainably improve the city, such as GranadaLimpia (public cleaning company) and CircularEconomy (research to improve circular economy in Granada) (OECD, *The Circular Economy in Granada, Spain*, 2021). Moreover, you can use the network that has been created with the Intelligent Cities Challenge (ICC) (*Home | Intelligent Cities Challenge*, 2020). This is an initiative that Granada joined in 2020, where they try to initiate industrial transformation and sustainable growth by driving collaboration between stakeholders. This collaboration network could help Biomimicry Granada to set up the package. The SSSP creates a sustainable city that could enhance economic benefits by attracting eco-tourism and improving local health. Nevertheless, it requires a long-term vision and policy initiatives, for which Biomimicry Granada has to collaborate and convince local officials. This approach could take years of investments and energy without economic gain, which I think is not feasible within the power of the Team right now.

Another approach to improve the service sector could be by using the wishes of the consumer, who addressed two things: 1) less plastic in the supermarkets, and 2) more healthy food options. These public interests offer opportunities for Biomimicry Granada. The first opportunity could be to start a plastic reduction campaign on behalf of supermarkets such as Mercadona. The Team can show the advantages to the supermarkets in terms of cost reduction and increased consumer satisfaction. An obstacle to this plan would be that most effective campaigns are backed up with laws from the government that increase taxes on single-use plastic or obligate a 15-cent payment per plastic bag (Adeyanju et al., 2021). It could take a lot of effort for Biomimicry Granada to achieve the same here, what governmental laws can do quite quickly.

A second indirect idea to increase healthy food options is to organize a local food health event, where local and healthy food is promoted in an enjoyable environment. This event will bring different players in the food chain

together, such as local government officials, citizens, producers, and entrepreneurs of the service sector. By doing so, we vanish the burdens to have a cross-talk between different nodes in the food chain. There will be an implication strategy to address a concern to motivate people to talk about healthy food. With such an event the awareness and need for healthy food is promoted over the entire food chain, which is beneficial for consumer and environment. Moreover, a link should be made with Camara de Comercio and other players in Granada to help finance and promote the event. Aside from the main purpose of the event, the Team could lobby with municipality officials about the idea of a ‘service sector sustainability package’.

#### 4.4.1 Action points

There are four main sustainability strategies described within this section that could improve the service sector. However, I advise to focus on action point number 1 as most feasible for Biomimicry Granada at this point in time.

1. Healthy food festival
  1. Explore willingness to organize local events that would stimulate more turnover.
  2. Implication strategy: feed everyone with the same idea
    - i. Raise nature based minded questions that break burdens.
      1. For example improve vegetarianism by asking questions such as: who is the strongest animal? – answer is an Elephant, which is vegetarian.
    - ii. Lobby with government officials to take first steps towards the SSSP (*see 4.4.1 – 2*).
  3. Approach local shop owners and producers to join.
  4. Invite local officials and citizens.
  5. Design a way to finance the event – form collaborations with Camara de Comercio.
    - i. Find sponsors to carry the finances of the event – in order to be able to invite entrepreneurs.
  6. Organize it completely sustainable – from design to food.
2. Food lessons in shops
  1. Collaborate with eco-shops and restaurants – use existing contacts.
  2. Use the knowledge of the shop owners.
  3. Set up a workshop or course in the shop.
  4. Promote the event.
  5. Design a financial plan – such as an entrance fee for the lessons.
3. Plastic reduction campaign
  1. Collaborate with supermarkets and municipality.
  2. Research the facts about plastic.
  3. Design a marketing campaign. Choose between local or national, and decide on a format:
    - i. Video;
    - ii. Poster;
    - iii. Social media.
  4. Develop a financial plan to sustain Biomimicry Granada itself – such as working for the supermarkets for a certain fee.
4. Service sector sustainability package (SSSP)
  1. Use existing contact to reach government officials.
    - i. Or enforce the idea to officials at a social event (*see 4.4.1 – 4*).
  2. Establish collaboration with municipality.
  3. Develop a plan to execute a materiality assessment on citizens in Granada.
  4. Design a financial plan to create an income.
    - i. For example: execute this plan on behalf of the municipality and work for a certain fee.
  5. Future: the package could be scaled up and sold to other municipalities in Spain.
    - i. Social media.
  6. Develop a financial plan to sustain Biomimicry Granada itself – such as working for the municipality for a certain fee.

## 4.5 Consumers: a focus on health and your family

One of the main shortcomings in the Spanish society according to the interview I had with professor Montoro Rios (*Appendix 3 – interview 3*) is that in general their perception of climate change and the effects that it could have on themselves or their loved ones is far off. They all know it is happening; however, they don't perceive it as a threat to themselves. It is difficult to raise awareness of something they don't see as a problem. Therefore, we used the daily concerns and interests they currently have regarding the food chain and use that to onset sustainable change.

Consumers have a list of priorities before purchasing a product: price, quality, appearance and health are the main considerations in that order with environmental impact at the bottom. Knowledge of this list could be used in marketing campaigns set up by Biomimicry Granada to attempt to change the order of this list. One of the things that was mentioned is that young people are more willing to buy food that is healthier for them, such as organic fruits and vegetables, however they cannot afford it. Questions could be raised such as: why do you have money for an iPhone, but not for pesticide free food in your belly? These kinds of campaigns are important to raise awareness of the social construct that we developed nowadays over the set norm.

One of the issues that consumers address to be important is to buy their fresh food products locally, which they believe they can find in local shops and fruiteries. However, the majority of fruiterias purchase their fresh food products at the distribution center of MercaGranada, where food is imported mainly from Granada, but also from other parts of the world. The main importance here is seasonal food: consumers want year-round availability of fruits and vegetables while the growing season in Granada per product is limited. To fulfil their wish to buy locally in order to be sustainable, they have to be educated over the time period of products to grow locally. The biggest impact could be made by changing consumer habits. In order to do this successfully, Biomimicry Granada should focus on the next generation. Research shows that when you reach people at a young age you can influence their behavior, as is seen with teaching children eating habits (*Westenhofer, 2001*). Therefore, the Team should collaborate with primary schools to give workshops, field trips and lectures about where food comes from and how/when it grows. This way they can influence these children to form habits to make environmentally friendly consumer choices in the future, such as not buying vegetables that are not in season. The Team can decide whether they want to make a program to give to teachers where they provide a package that includes the knowledge, the contacts for field trips, and the set-up of activities or to present the lessons program themselves. Moreover, they can connect with the municipality of Granada for financial support, as they are often involved in projects that make the city healthier, cleaner or more sustainable. They should provide information to the municipality that these programs influence future consumers to make healthier choices for humans and earth. In addition, the habits of the children can also influence their parents in the decision making of their purchases (*Chakraborty & Agarwal, 2020*).

Moreover, another concept to reach children, and even adults, would be to organize nature camps in which they learn about food and nature in a fun environment. The level on how much we care about nature and food depends on our connection with the topic. Re-creating this connection, especially for city inhabitants, has been shown to increase pro-environmental behavior (*Uhlmann et al., 2018*). This idea can be integrated with the current collaboration with Laura Stevens to make educational programs. Finding the right target group here is important. A focus could lie on semi-wealthy parents that need childcare during summer vacations and see the importance of raising openminded-progressive children. Children could be recruited nationally (including Madrid and Barcelona) or internationally (for example Northern Europe).

### 4.5.1 Action points

The action points for the consumer mainly focus on education, especially the first two. This is also something that Biomimicry Granada has experience with, therefore, I would advise focusing on these first.

1. Education package: where does food come from?
  - a. Collaborate with primary schools.
  - b. Collaborate with producers (*where does it come from?*) and service sector (*where can I buy it what?*).
  - c. Collect information of existing school programs/workshops

- d. Connect to municipality of Granada
  - e. Decide on form of package
  - f. Design selling plan of package to schools
2. Organizing summer camps
    - a. Set up a program to re-connect to nature
      - i. Integrate collaboration Laura Stevens
    - b. Promote the camp
    - c. Create an overall theme for the week/weekend
    - d. Focus on specific target group.
    - e. Design financial plan – price to join the camp
  3. Healthy food festival (*see: 4.4.1 - 1*) – This event influences the knowledge and motivation of consumers, who will form a push for the rest of the stakeholders in the value chain.
  4. Healthy food campaign.
    - a. Formulate triggering questions about food health.
      - i. Example: Why money for an iPhone, but not for healthy food?
    - b. Poster/video campaign about the topic.
    - c. Convince municipality for prevention campaign.
    - d. Collaboration with municipality – design financial framework.

As is described in all the action plans, designing a financial plan is important. A focus of Biomimicry Granada on this part can rapidly lead to a bottom line improvement.

Now that we have discussed the different players in the value chain, I gathered enough information to start beginning to prioritize all the possibilities mentioned in this section. That's why the next section will detail the outcomes of the brainstorm session with the members of Biomimicry Granada.

## 4.6 Brainstorm

The overall outcome of the brainstorm shows a focus on marketing, education and materiality assessment. In this section I will select and explain the most important and seriously considered solutions that were discussed in the last part of the brainstorm. These solutions are formed into action points by including extra information.

### 4.6.1 Marketing

The objective of the marketing campaign would be to educate the bigger public, by raising awareness in an attempt to change the sentiment. One of the ideas that came forward in the brainstorm for marketing was setting up a green label for restaurants, where the label claims to be 'Biomimicry Granada Approved'. This should be a local label where Biomimicry Granada researched the different sustainability strategies in restaurants and when they comply to a certain standard, they get the label. This label should be carefully clarified to the public, in order for it to be believed as consumers in this research have shown to be sceptic towards labels. However, as it is a local company with local people, it could advertise sustainability in the service sector while being super transparent about who they are and what they promote. Follow-up brainstorming steps should be undertaken in order to activate this plan.

#### 4.6.1a Action plan

1. 'Biomimicry Granada Approved' Eco-Label
  - a. Collaborate with existing contacts in the service sector.
  - b. Set up list of criteria's.
  - c. Ensure that every step is transparent.
  - d. Brainstorm for the needs and wishes to execute this plan.

### 4.6.2 Education

Making an educational program would fit well in the existing strategies that Biomimicry Granada uses. With this program they can help to promote healthy food for children and increase understanding of the origin of food. These things contribute to later choices for the children to be more sustainable. The client of Biomimicry Granada in this case could be either the schools that have an intrinsic motivation or are convinced by the Team that this is important to teach their children, or the government of Granada. They can incorporate, or stimulate this sort

of extra course with a view to maintaining a healthy society. Make a lessons program to sell to primary or high schools about the following topics:

- In-season food
- Impact of food on environment
- Health advantages of 'good' food

They could make use of the Biomimicry network: European Biomimicry Alliance (EBA), by collecting existing information programs that are already developed. Or work together with the educational faculty in University of Granada that rolled out a healthy food program at a school in Motril in 2016 (Pagés, 2016).

#### 4.6.2a Action point

1. Lessons program for schools
  - a. Collect existing information EBA
  - b. Collaborate with schools
  - c. Formulate topics:
    - i. For example: In-season food, Impact of food on environment, health advantages of 'good' food.

#### 4.6.3 Materiality assessment

Biomimicry Granada should offer materiality assessments with actionable advice for companies to increase sustainability by analyzing most impactful business operations. They can execute the assessments by promoting themselves as a consultancy firm. The expertise of one of the team members who works at an influential consultancy firm could give a kick-start to this project.

To approach a first client, my advice would be to start with the fisherman cooperative. They have shown to care about sustainability, but have also shown a lack of materiality assessment. Moreover, a member of the Team has a relatively strong relationship with the head of OPP-85. This already-established relationship could help to start up this business and achieve change in this sector. The Team can start with advise that consists on saving money to make room to finance further sustainability steps.

Another format to present a materiality assessment is by analyzing sustainability around food by citizens and making packages for them with (easy) tasks and strategies to improve their environmental impact. This should be in collaboration with or commissioned by the municipality or government in order to have a client to work for. However, at this point the Biomimicry Team does not have any relations with any political power. Therefore, the first step would be to find a connection with the *council of environment and health* of the municipality of Granada to promote the idea. This council specializes in making strategies to improve the health of the city and its citizens. The council continuously searches for plans to develop the city and province. For example, in Guadix, a town in the province Granada, they helped with organizing a congress about promoting healthy and organic food to their citizens (*Comedores Responsables*, 2017).

#### 4.6.3a Action points

1. Consultancy firm producers
  - a. Use existing relations: connect to head of OPP-85; make them understand the problem.
  - b. Provide materiality assessment and point out the most impactful problems.
  - c. See 4.1.1 – 1
2. Materiality assessments citizens
  - a. Establish a relationship with an official at the council of environment and health.
  - b. Lobby about benefits for city and citizens.
  - c. Develop strategy to out roll the materiality assessment.
  - d. Design financial plan.

#### 4.7 Final conclusion

The main focus of Biomimicry Granada could be organized in three categories: marketing, education and materiality assessments. I used these three main topics to order all the ideas that are generated (*Table 9*).

There were three ideas that could not be placed in the main categories and are therefore placed under the topic 'extra' (Table 9).

**TABLE 9. CONCEPT IDEAS OF CONCLUSION CATEGORIZED IN MARKETING, EDUCATION, MATERIALITY ASSESSMENT AND 'EXTRA'.**

MARKETING	EDUCATION	MATERIALITY ASSESSMENT	EXTRA
Plastic reduction campaign in combination with service sector	Lessons in supermarkets about: where does food come from, how to cook, how to preserve	Sustainability consultant for producers	Facilitate collaboration between producers
Healthy food campaign	Package for primary schools: where does food come from?	Energy analysis and advice for processors	Develop a training and employment agency for highly educated distributors
'Biomimicry Granada Approved' label.	Summer camps	Materiality assessments to improve packaging strategies for processors	Organize a healthy food festival
		Service sector sustainability package (SSSP)	

To match the concepts to the wishes and capabilities of Biomimicry Granada, I re-evaluated the ideas by using the following criteria (Table 10):

- Usability of the concept;
- Matching competences with Biomimicry Granada;
- Readiness for players in value chain of Granada;
- Possibility to expand to (inter)national level.

**TABLE 10. EVALUATION OF CONCEPT IDEAS BY FOLLOWING THE CRITERIA: USABILITY, MATCHING, READINESS AND POSSIBILITIES.**

	USABILITY	MATCHING	READINESS	POSSIBILITIES	EXPLANATION
<b>SUSTAINABILITY CONSULTANT PRODUCERS</b>	X	X	X	X	Below.
<b>FACILITATE COLLABORATION PRODUCERS</b>	X			X	Take a lot of lobbying and networking to get through to producers and bring them together. This requires skills that the Team has not shown yet, and long-term investments without security of financial gain (see 4.1.1 - 2).
<b>ENERGY ANALYSIS AND ADVICE PROCESSORS</b>	X	X	X	X	Below.

<b>MATERIALITY ASSESSMENT PACKAGING PROCESSORS</b>	X	X	X	X	Below.
<b>DEVELOP EMPLOYING AGENCY DISTRIBUTORS</b>	X			X	This type of business is far out of the Team's comfort zone and competences. Moreover, it seems that highly educated workers are not ready yet to consider the distributor market as a working option (see 4.3.1).
<b>SERVICE SECTOR SUSTAINABILITY PACKAGE (SSSP)</b>	X	(X)		X	The SSSP has potential, however, there are a couple essential steps missing: 1) openness from the service sector towards sustainable change; 2) financial back-up; 3) ability of the Team to lobby with officials (see 4.4.1 - 4).
<b>SUPERMARKET LESSONS ABOUT FOOD</b>		X			The competence of the Team to educate matches, nevertheless, the impact and expanding options of this plan remain nihil (see 4.4.1 - 2).
<b>PLASTIC REDUCTION CAMPAIGN SUPERMARKETS</b>				X	This plan could be impactful, however, governmental collaboration is needed in terms of laws and restrictions in order for it to be successful (see 4.4.1 - 3).
<b>HEALTHY FOOD CAMPAIGN</b>	X			X	This could have a lot of impact, but the marketing competences that it requires aren't present in the current Team (see 4.5.1 - 4).
<b>BIOMIMICRY LABEL</b>				X	It is seen that there is quite some skepticism on the market towards eco-labels, which makes it difficult to implement. Furthermore, the Team has no experience in this field (see 4.6.1a).
<b>MATERIALITY ASSESSMENT CITIZENS</b>	X			X	This could be impactful, however, there are a couple essential steps missing: 1) openness from citizens, who now don't think climate change affects them; 2) financial back-up; 3) ability of the Team to lobby with officials (see 4.6.3a - 2).
<b>EDUCATION PACKAGE PRIMARY SCHOOL: ORIGIN FOOD</b>	X	X	X	X	Below.

<b>SUMMER CAMPS</b>	X		X	X	Summer camps have potential to change the incentive of citizens towards nature. Nonetheless, the Team has experience with education, but organizing and hosting a camp requires other expertise skills (see 4.5.1 - 2).
<b>HEALTHY FOOD FESTIVAL</b>	X		X		To do this correctly and big, this festival requires marketing and networking competences that the Team has not shown yet (see 4.4.1 - 1).

By following the table there are four concept ideas that correspond with all four criteria, of which three of them were associated with the category 'materiality assessment' and one with 'education'. Moreover, the concept ideas focus on the following sectors: producers, processors and consumers (Table 11).

**TABLE 11. THE FOUR IDEAS THAT MEET THE SET CRITERIA, CATEGORIZED IN TOPIC PER SECTOR.**

	<b>PRODUCERS</b>	<b>PROCESSORS</b>	<b>DISTRIB UTORS</b>	<b>SERVICE</b>	<b>CONSUMERS</b>
<b>MATERIALITY ASSESSMENT</b>	Sustainability consultant	Energy Analysis and Advice Materiality assessment packaging			
<b>EDUCATION</b>					Package primary school: origin food

At the moment the core activities of Biomimicry Granada focus on education and providing workshops about biomimetic subjects. Providing education lies within their comfort zone and is, therefore, a logical first strategy to explore to improve sustainability in the food value chain while making an income. With the resources the Team has right now, such as the data base of the European Biomimicry Alliance and connections with producers and schools, they could start right away with making an educational package for primary schools about the origin of food (as described: 4.5.1 - 1). When this package is successful in schools in the neighborhood, the scope of the project could be expanded from provincial to national level.

In addition, the core competences of the members of Biomimicry Granada go further than providing education. Individual members of the Team have experience in researching the impact of a product on the environment (materiality assessments) and in consultancy. These experiences are needed to successfully develop an advisory and consultancy service for the producers and processors (as described: 4.1.1 - 1; 4.2.1 - 1; 4.2.1 - 2). It is important that the Team reduces the scope and solely focusses on one expertise (see concepts described above). This way they can use the knowledge they have gained on one project to run another project and reduce the amount of time to acquire new skills. In such manner they have time available to expand the business and take on more projects. Moreover, this strategy also helps them to specialize in the field and become well-known in the business, which makes other companies reach out to them. The Team has to form a network of producers or processors that are connected to this consultancy company. This established network provides ground for expansion nationally and internationally.

With these recommendations Biomimicry Granada can improve the impact on the environment of companies in the food chain of Granada. This way they help Granada and the world to take steps into becoming more sustainable.

## 4.8 Remarks and further research

In this section, some remarks are discussed on the research process and observations of the Team. Thereafter, suggestions for further research are provided for Biomimicry Granada to develop itself further and their knowledge in the food chain.

### 4.8.1 Remarks

A first remark about the research process applies to part 3 of the brainstorming session, which could not be executed as planned prior to the session. The outcomes of session 2 were fairly broad and descriptive, and did not align with the preparation for session 3. As a consequence, it was difficult to brainstorm about concrete solutions that Biomimicry Granada can work on. After some clarification and changes in the format, ideas were generated and categorized. However, it could be that these ideas are not the most thought-through solutions.

Therefore, the final solutions generated in this report are influenced by the input of the researcher to bring about a set of possible action points. The Team could benefit from a second brainstorming session to gain a deeper focus on what they want. I suggest to start with outcomes of part 2, discuss these and generate new ideas. Then continue to the final stage of having in-depth discussions on three of the produced ideas (session 3). Due to time-constrictions and sicknesses (COVID-19), this repetition of steps cannot be guided and included in this report.

Another remark concerns the current structure of Biomimicry Granada. They started as an organization that wants to spread the knowledge of biomimicry, and since five years they try to convert into a company where some employees can work full time. At the moment there are a couple of actions in the daily business process of the Team that are counterproductive to achieve that. First of all, their ambition is too broad. They want to combine consultancy work, with education, presentations and organizing conferences. This wide scope makes it difficult to proliferate and sell yourself as a company. Moreover, the Team has not decided on an end-goal for the company yet, which is crucial for structuring and prioritizing projects that are handed to them on a weekly basis. Lastly, they do a lot of individual projects pro-bono, which is not beneficial for becoming an autonomous company. Therefore, I advise Biomimicry Granada to focus on a mission to have an autonomous company, with fulltime working employees and resources to expand the business. But to do so the business scope needs to be narrowed down to one long term operational goal that enables specialization, reuse knowledge and build a reputation in a sector. Moreover, you can prioritize projects and balance between working for free to gain visibility and charging projects for the time they invest in it. It is important to describe: which projects and contacts are needed, existing contacts, a financial plan, specific projects for interns, time investments per Team member, and what knowledge to gain. An example for one goal: become a consultancy firm for energy reduction in the food processing industry. I advise to set up a five year plan to solely work on this goal to become a steady company that attains more sustainability in the food industry (Box 11).

**Box 11. Keep in mind – strength of the Team**

The people that work at Biomimicry Granada started out of love and interest for biomimicry and their concern about the environment. Their intrinsic motivation should be used to guide companies in the food chain to reduce impact. Moreover, there are a lot of students and companies that are inspired by Biomimicry Granada. Hence, becoming a successful company is beneficial for themselves, biomimicry enthusiasts, and for the climate.

**BOX 11. STRENGTH OF THE BIOMIMICRY TEAM IN GRANADA.**

A third remark I want to make for the Biomimicry Team is that there seems to be a bit of a language barrier. This is a problem, especially as most of the workers in the food chain do not or barely speak English. Moreover, three

**Box 12. Unite goals – example**

The Team can search for a language coach that has connections with government officials or influential people. This could help the Team to create opportunities to get in contact with them in an informal manner.

of the ideas that were generated in this report focus on consultancy for implementing sustainable strategies in the production and processing sector. It is crucial that the Team is as fluent as possible, because of two reasons: 1) it is necessary to fully understand the problems that need to be solved, and 2) it is essential to establish a relationship with the client. The quest of learning this language can also be an opportunity if they can unite this goal with a goal to form new connections (*Box 12*).

**BOX 12. EXAMPLE OF HOW BIOMIMICRY GRANADA COULD UNITE MULTIPLE GOALS.**

In addition, a final remark, the Biomimicry Team has quite a broad network, but misses some links to government officials. These links are useful for approval and rapid implementation of the change

they want to make. Biomimicry Granada should use its network to expand itself and facilitate the business they choose to set up. To create new contacts, they have to be visible by being present and active in (in)formal network activities, municipality events, or events in the sector of interest in Granada.

#### 4.8.2 Future research

The current research presented an overview of the entire food chain of Granada. Further in-depth research could focus more specifically on one sector, namely the producers. From 2020 there is a focus from the EU to achieve sustainable change in this sector and there will also be quite a lot of money available for this goal in the coming years. Therefore, it could be valuable for Biomimicry Granada to fully understand this sector and their perception on the business in Spain, including: the economy around it, employment, subsidies, producer variety, existing laws and enforcement, to contribute to sustainable change. For the future, this information could be used to specialize in consultancy for producers, or to help build a synergy between agriculture and city (*Box 13*).

**Box 13. Future goals**

Information about the agriculture sector could be used to build a synergy between agriculture and city. Bringing agriculture to the city could for instance; increase the involvement of citizens in the food chain, decrease the supply chain, improve food health, and reduce the heath island effect.

Inspiration from Drinkable Rivers project ([www.drinkablerivers.org](http://www.drinkablerivers.org)) to set a goal and find means to get there.

**BOX 13. SYNERGY BETWEEN AGRICULTURE AND CITY AS FUTURE IDEA.**

Another piece of research I would be interested in is to look at the potential for Biomimicry Granada in the marketing sector.

They have expressed during the brainstorm to be interested in creating marketing campaigns in order to push sustainability in the food value chain. In my opinion, the pure incentive of the Team to pursue sustainability or biomimetic ideas is a valuable asset to make the marketing campaigns effective. However, in my time here I haven't noticed that the Team has some sort of expertise in this field. Therefore, I would find it interesting to research their capabilities to set up a marketing campaign. This information is insightful for Biomimicry Granada to decide if setting up marketing campaigns could be a part of their job description, or if the Team should let go of the idea. This could help to find focus points to spend their time efficiently.

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# APPENDIX

## Appendix 1. Formal interview questions

### **Introductory questions:**

Can you describe yourself?

Puedes me describirte? Te gustaria decir algunas cosas sobre te? Puedes decir algunas sobre te?

*Analysis:*

- *Name* → *como se llama?*
- *Function* → *Que esta tu funcion en le empresa?*
- *Age* → *que es tu edad?*
- *Gender* →
- *Education* → *que esta tu nivel de educacion?*

How did you start working at this company?

Como empezaba trabajar en esta empresa? Porque he empezado trabajar en esta empresa?

*Analysis:*

- *Name company: nombre empresa?*
- *Sector*
- *Amount of time working at the company: Cuanto tiempo trabajas aqui?*
- *Reason why working at the company: Que estás la raiccon para trabajar aqui? (Cerca de tu casa, te gustas el sector, los compañearos de trabajo, porque has estudiado en esta theme?)*

### **Defining company/sector:**

How would you describe the activities of your company?

Como describes las actividades de empresa? (Que se hacen?; Puedes escribir el trabajo en general?)

*Analysis:*

- *Business of the company: Que es in general el business en la empresa?*
- *Description of the sector: puedes escribir el sector en general?*
- *Core competences of the company:*

Follow-up questions:

- *Who are critical customers and stakeholders?: Quien son clientes y accionistas que son muy importante por la empresa?*

### **Companies needs and market demands:**

What are the biggest challenges of the company in general?

En general, que son los mayores retos en tu empresa?

*Analysis:*

- *Factors that influence the company* → *prices, supply chain: Que son factores que influyen en la empresa?*
- *Different factors in the chain that are distinguished:*
- *General challenges and needs of the company: Lo que tu empresa necessita para trabajando en se retos, en general?*
- *General challenges and needs of the sector: Que son en general los retos en el sector y que son las necessitas en el sector?*

What is the biggest demand signal to sustain the company?

En esta momento, que son factores de fuera lo que influencia tu empresa?

*Analysis:*

- *Who has influences the company most: customers?, other companies in the market?, government?: Por ejemplo, quien son los mayores influencias, son esos clients? O otras companies? O el gobierno?*

Follow-up questions:

- How does this demand signal influence the company?: Como lo puedo influencia el trabajo de empresa?

### **General perspective on sustainability:**

How would you describe sustainability in general and in the sector?

Como podrias escribir sostenibilidad en general y en tu sector?

*Analysis:*

- *Knowledge of sustainability*
- *Description sustainability in sector*

How does your company currently incorporate sustainability strategies?

Que son las estrategias de sostenibilidad en tu empresa ahora?

*Analysis:*

- *Different types of sustainability strategies, such as: waste stream, GHG emissions, water use etc.: por ejemplo, tenéis conocimiento sobre se flujo de residuos, emisiones de carbon, el uso de aqua?*

Follow-up questions:

- Why does your company choose to focus on these strategies? Porque tu empresa trabaja con eso estrategias?

### **Sustainability incentive:**

What is the reason the company is (not) interested in sustainability? (incentive)

Que es el incentivo the tu empresa para contribuir en sostenibilidad? Que es la razón que tu empresa crees que sostenibilidad es importante?

*Analysis:*

- *What is the drive of the company for sustainability or non-sustainability?: Que es el 'drive' para usarlo? Que son grandes influencias porque la empresa tiene que ser más sostenible?*

Follow-up questions:

- What are the biggest challenges in becoming sustainable? Que son los retos quando tu quieres ser más sostenible?

*Analysis:*

- *Description of obstacles in the process: por ejemplo, puedes describir los retos en el process para ser más sostenible?*
- *Explanation on process decisions: puedes explicar los decisiones durante los diferentes opciones?*
- *Strategies to overcome the obstacles: puedes escribir las estrategias por trabajar a esos retos?*

### **Path towards sustainability:**

How could a sustainable practice be profitable for your company? Como podrán que sostenibilidad es lucrativo para su empresa?

*Analysis:*

- *Profit analysis (not) using sustainable practice*

- *Understanding the incentive from a profit point of view: Puede el uso de sostenibilidad ayudar la compañía lucrativo?*
- *Possible drive for other companies to become sustainable: que podría una razón para otras empresas por usar sostenibles estrategias?*

What else could be done in your sector in terms of sustainability?

Que son otras opciones en el sector, para cambiar y ser sostenible?

*Analysis:*

- *Innovations in the sector: que son las innovaciones en el sector ahora?*
- *Innovations by other companies: que son las innovaciones de otras empresas?*
- *Other sustainable strategies that could be included: Que otras estrategias sostenibles podrán usar/hacer?*
- *Description why other strategies or not included: porque esas estrategias y no las otras?*

Follow-up question

- Would your company be open to develop/improve the sustainability strategy? ¿Quieren tu empresa mejorar tu estrategia sostenible? ¿Quieren tu empresa desarrollar una estrategia sostenible?

*Analysis:*

- *Time line for improving sustainability: Saberas en cuanto tiempo?*

## Appendix 2. Description interviewees

Producers (n=4):

Producer 1. Co-owner and CEO of Quaryat Aceite, man, Spanish origin, 35 years old, University degree, and married with children. Quaryat Aceite is an organic olive farm. It is a family company that is already in the family for three generations. Worked in Scotland for couple of years, before returning to Spain and taking over the farm. Within his business he cares about his product and environment and has a vision for improvement.

Producer 2. Head of 'Operations of Pescadores – 85' (OPP-85) in Motril, woman, +/- 45 years old. She is of Spanish origin and she is mid-40 years old. The OPP-85 is a fishing cooperative that is active in most countries around the Mediterranean Sea and receives money from the EU.

Producer 3. Owner of specialty tomato green house, woman, Spanish origin, 58 years old, and widow with children. She has a great passion for tomatoes. As a researcher, I felt the love she had for her tomatoes when I came into her greenhouse. To quote herself: 'When I harvested my first crop, people around me said my face glowed as if I gave birth.' – Producer 4.

Producer 4. CEO of Volterra, man, Dutch origin, mid-40 years old, University degree, and married with children. Volterra is a consultancy service based in Barcelona and Palencia to help sustainable agroforestry, rotational livestock management and soil restoration projects.

Processors (n=2):

Processor 1. General Director of Ron Montero, man, mid-50 years old, Spanish origin, and has two children of 15 and 17 years old. Ron Montero is a rum producing company that uses the traditional way of producing liquor.

Processor 2. Co-owner and CEO of Quaryat Aceite, man, Spanish origin, 35 years old, University degree, and married with children. Quaryat Aceite is an organic olive oil producing company with an emphasis on sustainability. It is a family company that has already been in the family for three generations.

Distributors (n=2):

Distributor 1. Owner and CEO of Carmelo Fruits, man, Spanish origin, 34 years old and has a university degree. Carmelo Fruits is a wholesale market family business; he is the 2<sup>nd</sup> generation to take over the business after working for several years in a consultancy firm.

Distributor 2. Owner and CEO of Guerrero Granada, Spanish origin, 53 years old and married with children. Guerrero Granada is a whole sale market company.

Service (n=6):

Service 1. Co-owner of Tienda la Talega together with her brother. She is approximately 35 years old and of Spanish origin. Tienda la Talega is a small eco-supermarket that sells organic grown and produced products with parts of their fruits and vegetables originated from their own vegetable patch. Moreover, they reduce plastic use by avoiding plastic bags and use macro packaging to sell small portions to customers that bring their own boxes. She always loved to be in the countryside and wanted to take care of it, so when she opened the shop, it had to be environmentally friendly.

Service 2. Co-owner of Col&Flower, 34 years old, and Chilean origin, moved to Granada 15 years ago. Col&Flower is an eco-supermarket that reduces the use of plastic and sells organic grown fruits and vegetables. Moreover, they reduce plastic use by avoiding plastic bags and use macro packaging to sell small portions to customers that bring their own boxes.

Service 3. Co-owner and shopworker of I Need Coffee, 38 years old, Italian origin. I Need Coffee is a café that sells specialty coffee with breakfast and lunch, with vegan and gluten free options. He used to work as a chef in kitchens in London.

Service 4. Owner and shopworker of Stories, 33 years old, Russian origin. Stories is a café that sells coffee, breakfast and lunch.

Service 5. Co-owner and shopworker of Las tiendas de los unicornios, 30 years old, Spanish origin, and a university degree in biology. Las tiendas de los unicornios is a vegan café with specialty coffee and only vegan options for food and beverages. He used to live and study in Denmark, where he lived near a hippy community with alternative lifestyles. He worked there in a coffee shop where they had boardgames, this was his inspiration to set a similar business in Spain.

Service 6. Co-owner and shopworker of Oteiza, 25 years old, Spanish origin. Oteiza is a café for specialty coffee.

Consumers (n=3):

Consumer 1. Man, 29 years old, Granada origin, University degree and works in consultancy with solar panels. He likes sport and travel and feels committed to the world and the planet.

Consumer 2. Woman, 55 years old, Granada origin.

Consumer 3. Woman, 21 years old, Hungarian origin, Erasmus student at Granada University, does a lot of sports.

## Appendix 3. Formal interviews

Producer 1.

Function: owner Aceite Quaryat

Company: olive farmer

Interviewee: producer (A)

Interviewers: Paulien (P) and Matt (M)

Date: 11:00 31-03-2022

P. Could you describe your company for me?

A. It is a family business that is stated in the environment of parque sierra nevada. Voor ons is het erg belangrijk om bezig te zijn met sustainability and the environment to maintain the quality of our product. We make here our own olives.

P. Why do you work here?

- A. My family already lives here in this village their whole life, so i grew up here. And it was logical to start this here. Already for 4 generations we live here. nd my brother and I are now the professionals here in this sector. We studies in other cities (servilla) and studied law and economia, financia. After that we returned to our agriculture. We had the opportunity to take this over. but we have first worked in other companies outside granada.
- B. Telecom flight cultivators project that will link us again with our territory. The theme of a Spain emptied of how young people have no resources is not very fashionable now in Spain. they have to go outside all that I experienced. and I had the opportunity. we had the opportunity of grace. because they do the olive tree and good financing by the banks. and others to lift this project. and I come from living abroad, my brother also stops working in Seville, and we consider our heritage with our rejection. it is called to try to be able to work here to fix our residence here from work. In the end, we talk about these environmental terminals, but economic sustainability is also important in how you take care of the territory. Well, we are establishing a population that can work here. You don't have to go outside to a small town in Granada.
- C.

M. Was there a specific impulse for that?

- A. okay I raised the project in the first two years. my sister did join but my main motivation was to stop seeing it rain in Scotland. completely will be as I need and I need to live on something good. It was an interesting sector, very technology and such, but it was not what I was really passionate about. and I, that is, later, it had outgrown me, I had to make the leap, or I was going to London or I was going to the United States, Aída Ocean, they were from now, I had to move from Scotland, no, I couldn't stay there, I'll tell you why depressions are very bad

P. With how many do you own this empresa?

- A. My brother and i . Each one has a different area of business. I'm in charge of Financial Management and Human Resources. Well, I'm in different directions. My brother has at least three for administration and production.

P. What are the sustainability strategies you use in this company?

- A. Bueno básicamente por ejemplo si nos vamos nosotros telefónicas grabación vertical tenemos campo tener farmacia de tenemos comercialización vale todo pagamos todos los sectores del follón de primaria de sexto industria y servicios para finalmente no tengo una casita de mi hijo vale básicamente nuestro en campo nosotros tenemos dos sistemas de cultivo sostenible que tú que me conoce la ecológica

M. can you describe that a bit more with detail?

- A. ofcourse, so we are an ecological farm. which means that we don't use chemicals for fertilization or protection against bugs. So we use insecticides that are ecological. It is better to maintain the natural balance of the ecosystem, also in order to prevent plagues. there are no insecticides (natural ones) that could prevent plagues, only the natural balance could.

In the end, what you are looking for is control of consumption of what you contribute to the field and what you are looking for fell into a natural balance. because then what are we going to do to him and we are helping and favoring him with the production of olives that on the side of the field the sides of the oil mill. Well, well, we have everything that is solar panels, for

example, for the course of electricity, all the lights that you are seeing, friends, and we have 100% LED lights on, different production systems, which. because we try to avoid the use of contaminants such as oil filtering. We use safe diatomaceous earth test. and we have a biomass boiler with which we use the neutral CO2 from the pit of the olive as fuel to generate hot water and heating.

The CO2 that we release is also uptake by the olive trees so in that case makes it a natural cycle. We have our total water management under control. The water cycle is neutrally erased, so waste water is under control. We collect the rain water and use a raft system to reuse the rain water. Also the water from the production process is in a closed system. We have closed the cycle of water.

And further more with the packaging and the commercialization, we try to do everything local and we try to recycle everything that we can and is within our reach. I am always search for more ways to be able to improve the sustainability factor.

P. Who are you customers?

- A. 80% of our production is sold in Granada. So we mainly sell to supermarkets, but also to brands as Gourmet. And we sell internationally within Europe. we are already recognized and known for the quality of the product we stay and the rest we import before ports of Spain because we better take it to different points in Spain

For me it is easy to sell my products, because it is ecological and we maintain a high standard of quality. And i also want to sell it to european brands, because I make my product ecological. so when other brands use olive oil in their product and they want to sell their products as ecological, they want to use ecologically grown olives as well. Besides, people can come here to the shop and sell from us here directly. that is also cheaper because they can buy liters in one go. (12.19). but also because there is no transportation cost, so it is cheaper if they buy here.

p. how much percentages of you clients come from other countries?

- A. 20% solo. the rest is in Granada or in other parts of Spain.

p. so there is interest in ecological olive oil in granada?

- A. si, we sell a lot of ecological olive oil in Granada. a lot of stores sell it. it is not as much as in other countries or bigger cities. but yes people in Granada are interested in products local and ecological, they are starting to concirm more and more. (15.15).

P. when you started working here, what where the most biggest challenges?

- A. in general, administration was a lot of work, to get the licenses. 1,5 years to get everything going. in industria there are a lot of rules you need to follow.
- B. To do this, the main permit was all the licenses, all that was one, it took about a year and a half before you can put a stone here, move the earth or anything, that was the main obstacle. because well as an industry you have a lot of regulations to comply with. then you have to have everything very to be able to ride this building adventure. and then once it was already in principle then learn. I come from a different sector because it is very clear. Well, to start working without having a client, they only had us, so to make 500, learning how it is made with oil, to open the market, they do not know you at all. Keep in mind that this sector is a very traditional sector. there are companies that have been producing oil for 300 years when some have not. I don't know why they have been sleeping for years. **But we are pioneering olive oil and we are the first to bring quality oil to the market.** I didn't understand what we were doing here in the area, for example, we brought the harvest forward a lot, we harvest the olives before mid-October, currently they are harvested in mid-December at the black (17.22). But we overcame the obstacles. and what is important is that we educate our clients that you need 2 types of oil. one 5 liter bottle for just cooking, but also the specialty olive oil that you put on the salad. It is very important to educate about this difference. and it also justifice the price.

P. How did you overcome the problems?

- A. well, each problem, well, the administrative issue and patience, time comes out, everything is clear, everything is fine and everything is legal, the laboratory analyst learning of everything that has to do with production ends up arriving, not later Over time we have been able to train people who are already dedicated to doing that, but at first I was the one who made the oil, which was there, the whole marketing issue, well, it has been good to let you know about the work after the marketing of the idea. of project issues very clear project we are in a fantastic environment Sierra Nevada Natural Park since they have helped to change people's perception of good quality products over the years it has been easy because first of all the work that we do not have registered and that carried out by

other colleagues perfect that people are now costing a lot because of what they do third of then it's early when I'm there no one knew that then May knowledge r part of the consumers and to relate it positively to them but basically I already told you it has been the day-to-day work as if the main obstacles were overcome long until we got to where we are

P. And how are you educating the clients?

A. we have a lot of activities for clients to come here and learn. We have programs for tourists to visit us. We take the opportunity to value all this, this whole family project as an activity has song lyrics, the quality of the products is easier to remove, not in addition, our city in October tourism is also certified and endorsed with the European Charter for sustainable tourism, that is, we have the criteria and the values when it comes to personalized walking tourism Granada hotels to compensate for the CO2 footprint appointments commitments I finish with the activities we carry out and I already tell you about the spirituality and the tourism t-shirts as well as the person who comes here to buy oil that explains, they teach, gives you a taste of the oil and the people who appreciate the difference can see a lot of didactic explanations and that older people are learning about it

P. What where the challenges with becoming sustainable?

A. for me sustainability is not a challenges, it is an opportunity. Sustainability is always positive for me. well for me always positive I never see it as negative logically because if you want to put solar panels you have to make it an investment but I have always seen the profitability. not only both economically, also from a marketing perspective. As I can be very happy when I go to sell my oil or I am going to look for a new client for my oil, to be able to say that my company is sustainable. That it has solar panels, correct water/waste water use and streams, we have a biomass boiler, in the background it is going to help me to sell. This brings a strong position in the market for my oil. But yes other companies don't come so there are certain economic difficulties, i have to invest to change all the lights installation, that is my money i have to put in there.

M. do you have a challenges with growing ecologically? Less production

A. Yes, we have a lower production rate.

M. how much?

A. 20% lower. Easy! At least 15%. This is the hard truth and if people say otherwise, well good for them, but there is always a drop in production. but you see it also in the price, that it is higher. I also have limited productions, i cannot grow large productions. but it is all ecological and it is already sold before it is even harvested. It sells itself. (25.41)

P. Are you the only ecological olive farmer in this region?

A. No. More and more make the change to ecological farming. And i would actually encourage them, they are not only competitions for me but also friends/colleegas. If they work to improve the environment, that would also improve my world and my quality of the olives. furthermore, i am the first one here to go into the direction of ecology, and therefore, i have a huge advantage on them. I am at places where they cannot come anymore, because i am the first (and most well equiped).

P. What is your incentive to incorporate sostenability in your company?

A. I think that with my way of being my way of understanding the world that what we do on a small scale you know if we all know something positive about the environment or in our day to day life, we try to do things well. because we will leave a better world for the new generations. In the end, I will plant an olive tree in the portal. I am not going to take it with me the day that I am not here, but you have to know how to do it, for example, in this position we have to nurish our lands. olive grove field is closed you can go you can go through them enjoy it. okay I don't know how to say that it encourages me is to do things that I feel happy, in which I feel good you know. not to dedicate myself to sectors in which I would not be happy. I could have dedicated myself to the oil sector, I want the sustainable and economic and environmental ones but but it can't and it's really. I want to be sustainable for the world and for my son. Ofcourse i cannot change the whole world, but I can do what i can from my position.

M. So what you are saying is that it is impotant to maintan the soil in order tu maintain life.

A. if you have a traditional olive grove that has a healthy ecosystem, with room for a flower or fauna to live, it will be much more sustainable than if it has a super intensive olive grove. I have seen these fields of olive trees that go like a balleston that there are instead of 100 plants per hectare, that just can be good. You need very little labor is that in the end also everything related to money you wear you are involved in the big corporations that invest and plant 3000 hectares in Portugal give it to them if we want that the food chain is in the hands of 3 people or three large investment funds most political issue that occupies. but it is not sustainable. Hectares of ecological cultivation in authorized greenhouse of very beautiful products. Very fullfilling.

P. do you have other external factors that influence your company?

A. for example, the transportation strike can paralyze production, for example, but well, in general, it's already getting up, I don't have a battery, no You can think later that the orders that had to go out would stop in the middle of nowhere, you know they didn't reach the oil customer, it's not that I can, yes, but that I have to send through the agency that I had (36.06)

Strike, guerra in ukraine and brexit. gueurra in ukraine (37.15) has an impact with the amount of sunflower that they cannot sell anymore right now. And brexit because of the bureaucracy of being able to still sell products to england.

Inflation has an external influence → carton is increased with 54 %, the prices of cans are increased with 85%, glass has gone up with 35%, and it could be that clients are going to other oil mills or cheaper ones like mercadona or carrefour to buy their oil.

P. mercadona has other olive farms?

a. yes they are in hands or have investors from Qatar o Emiratos Árabes Unidos. The oil is sold in Carrefour some prices are selling below cost I don't understand how I don't know how they are not sinking the market. but the investors from qatar, they have lot of petrol money and can invest with state cash. so they can drive down the price.

P. does this have influence on you as well?

a. personally no. because my oil has a different quality. I appreciate it, I compete with nobody, you know what I want to tell you, I have my own price that I set for everything in order, but I'm not one of those people who goes into a store with a slump and a price to kick someone out because I don't work on Saturday. That's how the competition seems to me, the last one I don't see. I do not need it. You don't need anything, I have no idea, look, I'll spend a lot of money on you in the mills that are here in the area, it'll be more expensive.

A. I hardly have any discussion about cheaper so-and-so, I know, you have to have a client come and they tell you that here next door in the next town he sells it to me cheaper, I'll buy it lower, so I have better quality and if you want the pay and if it will never be a surface, go wherever you want, there is no problem, I can afford it, you know, not everyone can afford it, I hardly have any discussion about cheaper so-and-so, I know, the one who comes here, next door, they sell it to me cheaper, I know that if it is more expensive, I have better quality and if you want, you pay. and if not, then it will be a surface. go where you want no problem I can not allow. You know, no, then he can afford it. I can afford to be like that because I am clear that my product is worth it. There is a job to find out so I can pay farmers, cheese, olives a fair and reasonable price. it has to be like this and above all so as not to deceive the consumer in Spain. the main problem problem we have also the labels label. GS cut a lot of expenses and you are going to look for the analytics that the OCU organization of consumers and users does when they take from the shelf of a supermarket. Dia oil 10 marks of 9000t oil on the label, eight you know what to say would not be an extra virgin from a Virgin. be a quality oil in many cases. that is why they can sell what is cheap, they deceive the consumer in many cases. but many don't tell me either. I know something else to cheat, come on, what happens if I catch you, I'll tell you, they'll fine you €30,000. So I eat because with €30,000 you know what happens and the newspapers don't tell about it. because who pays for advertising? the newspapers I don't know I'm hot I won't tell you honestly if you'll catch me which company are those that invest the most in advertising. and the media echo the company in Granada. there is a very famous Granada that is always very poorly paid. It is worth and the most important olive oil in Granada and it always goes wrong to give, but they never say their name in the newspaper. and in no means of communication imagine the power it has. surprise problem that we do not find it less and less. I also tell you when I got to the market, I tried the oils from the supermarket. and it's a shame today. Well, thank you, they will only consume more criticism and all these companies are putting their batteries, but I don't know if it's a gem, but even so, there is still a lot of picaresque, but hey but even so it remains remains quite picaresque. but hey, that way you get the cheap price. and get I will never understand a company that I have. in the largest chemist's apartment, capable of making you chef. you do not need Department of Chemistry laboratory. It's one thing to have a laboratory, I even have a small laboratory. but I don't need the department from here to Granada for which I do it to see what oil I get. and since it doesn't tell me anything, it means changing many problems that we have in our sector. It's good that every day they are smaller, the idea is that they are smaller and smaller. do not go to study me that we deceive that we lie. or it is what you go you will go but rather they are problems that are found by consumers due to their ignorance. They seem to remember that it happens less and less. but it has historically been a sector that has committed many AVs with an eye always high for human consumption, never with problems for human consumption. Food safety is important, we always have it. but yes, that's why I do sell my oil and I sell it more expensive but people know what you buy. and I miss you that's

why we have customers who are loyal and are willing to pay about €2 more for a 5 l bottle that in the end then in a mixed drink you go to the tobacco package you know not even think about it healthy product 46.50

P. What does your company need?

A. Well, in a small company, in my case, always human resources. more staff are needed, more staff. but you can't, it's really personal class. It is a very, very tall car and in our case we are at 20. With which we have the financing covered, but normally the financing is the last important thing. but hey we are here thermo risk aversion guide, and all investments what we do what we do with our media buy more or less our media or share our media. and I would not know what to tell you maximum problems. And for a small business like us, it just so happens that you'll always have a lot of work around staff. Now I don't ask you anyway, it's very expensive, it does it. He already has a job in a cooperative in another place, I put him in, we pay above the collective agreement. that is, we only have good ones within what is on the market. and such but not so not find suitable personal marketing. I would like to have someone but we are also afraid you know how to say. is that it is usually very difficult, keep in mind that I do not make a new client. It takes an average of six months. they know you very well, try the oil they can produce you know how to play a job, but well an important need

M. And what is the biggest need you have? Right now all the oil do you have to make many new clients?

- A. new customers keep the customer the car. to make new 500,000 led. That's why when you study to make some very expensive clients you have to make a big investment. But when i made the investment to get a new client, the retaining that client is very cheap. just one phone call or visit from time to time and i maintain the client.  
you know sometimes I have the feeling that I mistreat my clients the current ones no, and the new ones that I don't have abandoned, they ask me because they like me for the money reason why they don't remember you you know some good moment you. Doing follow-up on you clients is super important. I want to do more detailed follow up if that would be possible. you are more with them you know. But they understand that it was a small company and you don't have a staff dedicated to that. to see to do a follow-up and others at the end the fight of the clients that we have family to have dinner. They look for companies like you, but those little family members, being in a large area.

most important thing is that we are a small company, me and my brother, so finalcial things are difficult sometimes.

m. on the thema of sustainability, ar eyou stil searching to find more things to become better?

- A. Yes. Always. I am now for example looking into electrical vehicles, especially locally to bring our oil to the market.  
I will try to make the ink that is used on the etikettes, that we can make that from soy.
- B. but the idea is that if I am always looking for new commitments just for belonging to the European Charter for sustainable tourism, for example I have 3-year programs that I commit to every year to do something or some story that improves.

There are things i cannot do also economically wise.

Also my manager wants to have everything printed on paper, well it is 21 century now, we can do these things online.

Producer 2.

Interview Producer 2

Interviewee: Producer 2 (V)

Interviewer: Paulien (P) and Matt (M)

Date: 18:00 12-05-2022

V. We are an organisation for cooperativa for fish. OPP. In this harbour 25 from the 32 fishers are connected to our organisation → 80%. Being a member is voluntary. What we do is we connect, protect and help the fisherman. and they pay a samll amount for it. we represent Spain. The OPP has many advantages, because we receive money from EU for fishing, also to perform sustainability practecices, fight against illiga fishing, against fraude, help control the fisherman.

Organisation de Pescadores de Mortil. OPP85. → we have norms for the boats.

P. only in Motril?

V. no also in entire Spain, and all the Mediterranean countries. This is a way for all of us to ensure that everyone has the same opportunities for fishing.

Brussels EU has new norms sometimes, they help.

P. What are the biggest challenges for the fisherman?

V. The biggest problem is the price. The producers have to follow the rules of 3 administrations: Europe, National and Autonomous Community of Andalusia. There you have the fish of Granada and they develop sustainability as well, but here are all the rights of the fisherman, the waters. This is when the boats stay close. When the boats go further away from the shore, they belong to the country Spain.

The problem with the price is, it is not the same as for apples for example that you have a price per kilo. No, the system is by bidding. So a kilo of fish of a sort is presented to an audience and they decide in form of bidding (so the price starts at e.g. 20€, and it goes down until someone says that he/she wants to buy it). So the price is not stricken or sure. Everyday they catch the fish fresh. Because everyday they go out and go in with the boats. And everyday the supermarkets and restaurants come buy here.

P. How do the fishermen have enough money?

V. Fisherman is not for everyone. You really need to have an interest for it. Not a lot of young people want to take over the job. The sector becomes older.

The boats sell fish.

But the problem is lots of fishermen have not studied, and it is a closed circle where they are in. Small social circle. However, this is changing.

M. But there are a lot of new laws, and it is quite difficult to adapt to these new laws. Do you have an example?

V. Yes, actual one: they have a plan for fishermen in the Mediterranean to reduce the number of days that fishermen can fish. So they have to take more vacation days. This is a way to make fishing more sustainable because if there are less days to fish, less fish is caught. But this is all thought of by a person in an office, not thinking how it would be for the fisherman self.

This could only work if they get paid more for the days they are free.

There is some money to help them, but the fishermen don't want to relax, they just want to work.

P. Don't they have subsidies?

V. Yes there are subsidies. But I respond the same. But the politicians and policy makers should work together with the fisherman, in order to really help one another to reach their goals.

V. Here in the OPP we have quite small boats. – 19.33 The boats leave at 6 in the morning and return at 6 in the afternoon to sell the fish to the retailers.

These boats they search for fish on the bottom of the sea. So they have sharp metals to scrape over the ocean floor to get fish in the nets. This is harmful for the sea floor, but allowed. But they are not allowed everywhere, because there are parts with coral at the sea floor. So the boats have senders/localization points, so we can track them to see if the boats are in legal fishing water. If they are not, then they will be blocked from the OPP and cannot sell legally fish anymore.

P. How do consumers know where fish comes from?

V. When a boat comes back, in the vending market the fish will be labeled with name, boat and fisherman in the Loggia.

Most will be sold here to Granada. But it is 5 million a year, so it is a small port. So people that buy here, don't only buy here. Pescaderia or supermarkets don't have sufficient stuff to just only buy here. Mercadona as well, sells here. But especially for Mercadona Motril, because persons from Motril don't buy fish from somewhere else but Motril.

The fish will be sold per kilo, but will be shown in a box. 33.19

P. What is the vision of fisherman/fishing sector on sustainability?

V. It is important. We work on it a lot and it is obligated for OPP to receive help/money.

You need a sustainable fisherman plan.

We do:

- We have a network for control.
- There is a minimum size for every fish type that you can catch. So if you catch fish that are too small, you cannot sell them and you get on a list. The rasters of the nets are designed not to catch too small fish and after that there is a selection on the boat itself.
- Looking for alternative for pulpo catch

- WWF helps by putting a software on the boats to have control on all boats in the sea. There is a red and a blue light on the boat. And they give signals to either local or national government to see where the boat is. If it is in legal or illegal fishing water.
- And WWF put a device on the boats that measures the environment of the boat, this way they can measure the nutrients in the water, the amount of fish, the state of the habitation. To check the health of the environment/ecosystem of the fish. This is all in boats of the OPP.
- Open up a nursery to help a certain fish. Because lots of eggs get lost on the boats and thrown overboard. So now when they clean the boats they have to save the eggs and bring it to the nursery. So they can grow them and put them back in sea. To help the ecosystem and the population to recover. The fisherman depend on the health of the ecosystems of the fish population to be able to catch and sell the fish.
- Next step is electric boats or boats that use solar panels. They have one or two now, but that should change.

The sense of community is the most important thing here in the fisherman world.

We also have an association for fisher woman to start projects together. We look at different things for example reducing plastic. We try to come up with ideas for sustainability.

### Producer 3.

Interviewee: Producer 3 (C) → has a great passion for tomatoes.

Function: owner tomato green house

Interviewer: Paulien (P) and Matt (M)

Date: 07-06-2022 18:00 AM

p. How can you describe your work?

C. I am have a green house with specialty tomatoes. I have been here only now for short time. Specialty tomatoes have a different kind of approach. This is different than agriculture before. I have to control the climate consoles, and specialty tomatoes require a lot of labor. Not as easy as before.

P. What are the great difficulties in your company?

C. Well, there is a problem with the people that I hire. They can leave to their countries in the summer. It has happened to me that they were all. I have bought second-hand machinery to collect, it is the only option that helps me mechanize. Widespread there is a lot of labor shortage. I have a program on strawberries and we are hiring at origin, in Spain. because here in Spain although there is a lot, unemployment is not good. But well the people do not want that job. At this moment I hire everyone, I give contracts. It is physically hard work, for me too. you are under the sun it is very hot but it is that the one that comes. You know, they have answered me many times, it's that I'm sweating, I say. that is normal in a greenhouse and they gave it to me. Or they don't want to sweat. It is super hot in the green house during the day. so people dont want to work here. it is super warm and hard work. As you work as a waiter you cant expect your feed to hurt at the end of the day. If you work in a greenhouse, you cant expect not to sweat.

M. How did you become an agriculturar?

C. Wel my husband had a lot of land, and I love to work with plants. So I went into the agricultur business. And we started with cherry tomatoes and other stuff, and bit by bit I have been specializing into these tomatoes.

P. This is a bit more a specific question, but do you have subsidies from the government?

C. I am a member of the OPFH, this is a cooperative for farmers. They have help, for there are things that subsidize. You have to apply a year in advance. For example the plastic or, for example the grafts, the pellet truck, the hydraulic cart. They don't help with the thing every year. and they are changing. Well, it is requested a year before, they look at it and the board decides. For products or for the soil, there are no subsidies. The subsidies are only on the level of the material.. and at most help for graft of the plant. Without the help for the materials, it would be too expensive to maintain. Because as well, the batteries of the cars take 2 batteries, and they always break down. Everything in the greenhouse is mechanized. However, the maintenance of the machinery is super expensive. So To buy new things or to repair it, is a lot. I have a mechanized ventilation system. They breakdown, like al machines.

It helps you with investments because at the moment the board has control over those purchases. have done systemversion. they are done and it doesn't help me.

The OPFH helps on the level of providing or investing in the material. Reparing small portions I can do that, without help, because they are oke. But I give you an example, last year one of my lateral windows broke, and I

had to replace it. Only one new window would cost already 30.000€ . This is difficult because I don't know if I can get that investment back in the next campaign.

P. Who are your clients?

C. I only sell to the cooperativa and they sell to supermarkets. but that i dont know. Cooperativa the name is La Palma.

M. And how do you buy the seeds or the fertilizers?

C. That is all arranged by the cooperativa. (3.33). They arrange that I can buy the seeds and the fertilizers that I need for my work here. 100% of the stuff that I need, i buy at the cooperativa. Everything is commercialised through the cooperative. If you belong to the cooperative you are obliged to buy 100% at the cooperative.

M. What about the fertilizers and pesticides?

C. They also have the supplies and you have to buy them there. They also decide per season how many hectares of tomato species they need. They have meetings and decide who plants what, depending on their history.

P. Other question, part of my research is about sustainability. How would you describe that in you company and sector?

C. we used to use diesel heaters, but now we use pellet heaters (they burn wood). They are from olive pits the pellets. The pellet heaters pollute a lot less. We use pallets and make petroleum from pits, that has less impact.

C. RECORDING 00 - 3.42: people who work as picker, they can get a pension at 52 years. There are subsidies for people older than 52, and unemployment options for them. And if you get rid of everybody with a subsidy, or early retirements, who is left in the field? Only the land owners.

I have had workers who asked for a contract, in order to put their papers in order. They asked me for a contract today, they go to Granada tomorrow, they fix their legal situation, and the day after tomorrow they don't come back. (→ People from south-america come to sign a contract to work, and take the contract to Madrid to get their residency and then never return here.)

When I harvested my first crop, people around me said my face glowed as if I gave birth.

P. To come back to the part about sustainability. Can you name more things you do with sustainability?

C. We have solar panels to heat the bathroom of the house, this is initiated either by the inspection or by the cooperative. (4.00). recording 14.

Prevention of occupational risk, dangers and other risks for the worker. We recycle plastic and glass. All of the packaging of the products that I use, are returned to the cooperative to be recycled. Including the bee-hive. I use the bees for pollination.

Most people use chemical pesticides for every 7 days. These are called sulfatos . I haven't used them for 2 months now. Why would you use pesticides so often on something you eat. I use a lot of 'nessy' (nesodicoris tenuis, what it does it paratizes the tuta (tomato pinworm), and kills it. That's one way to control tuta.

I also use a lot of pheromones, what they do is lead away the male from the female. I use a lot of traps, they have a clue, which captures the adult. The tuta has three different life cycle stages. I try to cultivate with little waste (from pesticides).

P. what are your incentives?

C. You have to work harder, cause if you use a product that is for 3 days, which you can use because it is promitted, than you would have to spray pesticides less often. There are stronger pesticides but I don't want to use that. But they are much cheaper than my pheromones for example. Pheromones are expensive, cost 1000€ a time.

But I try to do other things and it works. I like doing it like that, because I am a person that is accustomed to walking around the greenhouse and eat a tomato. My 3 year old grandchild comes in and gras a tomato and I feel safe with him eating it.

If you can manage to control the pests with other biological methods instead of using pesticides, at the end you are off less expensive.

Because in order to spray pesticides, you need 2 man (one to push the car and one two spray) and 1000L of product. And you do that everytime you spray pesticides, which you use every 7 days. So adding that up it is a lot more than using Nussy.

M. How expensive are pesticides

C. To be honoust, I don't have a clue. If you ask me, what did you spray on this. The cooperative sends an expert that comes to take a look at my greenhouse, and says I have to use a certain product and then I do it.

Last year I had a pest, but I closed of the rows that were still healthy so the pest couldn't get there.

M. when do you decide to spray pesticides?

C. when it rains it is common that plants get botrytis (a fungus), so then I spray. Another time I spray is when a plague gets out of control, and if it could get to the fruit, then I have to spray too. I also walk up and down the roads and pull the leaves of that have the bugs or fungus.

I walk a lot of up and down the road with a plastic bag, and when I do see something with fungus or bugs on it, I put it in my bag and close the bag of.

The risks of pesticides: you have the dose right, you could kill it or not but you never know it beforehand. And it also depends on how fast you spray it. While pulling of the leaves,, you know it is going to be death.

However: it is not difficult (to reduce pesticides), but these are habits that are hard for people to adopt.

When I first came in, I didn't have any previous experience, like a virgin. So I was open to learn, while farmers who do this for 20 years are not eager to change. It is really difficult, when someone has some guidelines, developed over 12 years, to get them to change.

I think women adapt better to change, and we like to try new things. And men are more reluctant in the face of change.

#### Producer 4.

Formal interview: Volterra → Barcelona

Interviewee: Producer 4 (S), man +/- 40, Dutch, lives in Spain for 20 years.

Function: Co-founder

Interviewer: Paulien Janssen (P)

Date: 20-04-2022 09:00

P. Can you tell me something about your company?

S. I started with my company in 2015. We mainly focussed on writing politics for deforestation, helping farmers with additional grazing (soil registration), mainly European projects as consultants. But we noticed that after we did the project, they did not really proceed with the outcomes so therefore we started this company (out of frustration).

Now we mainly work on LifeTerra which focusses on recovering of degraded land in Spain and Portugal.

Degraded by bush fires or by climate change. We focus on farmers and try to incorporate agroforestry, food forest and forest next to the farmland.

Beside that we offer products, such as: carton boxes that help trees to survive in hot environments, biochar, biodiversity increments true nest boxes for birds and bats to boost the local biodiversity.

Basically, we help to improve agriculture and reduce the deserting influences in Spain. Moreover we have an economical drive behind our system, so the farmers also earn money from our work.

P. How do farmers respond in general when you talk about the new way of doing agriculture?

S. Farmers complain a lot and want more money. And we see that the Spanish market is not yet ready for it. For example we have some ecological farmers that do everything right, but they become stuck in the system when they for example need to give their ecological meat to a non ecological / conventional butcher and it is sold as normal meat. So they don't get the money they need to maintain. Also the people in Spain do not really care that much yet. There is not enough money to pay 15% more for their meat or veggies and they also don't care that much if it is healthier. For example what we have in the Netherlands 'community supported agriculture' that is not a thing here, families do not collaborate to buy immediately of the farmer. So difficult for farmers to earn money in this way. We need cooperations of farmers to bind and find customers that want to pay a bit more for good food. Take less care of health.

There are initiatives though: Crowd Farming. There you can buy immediately from the farmer and it is sent to your house without a middle man.

And it is sad, because there is not really a stimulance from outside. EU or government are lobbied into accepting the chemicals and don't really do a lot. There are some subsidies linked to green initiatives, but it is not enough.

P. What are challenges in converting the agriculture sector?

S. Farmers have a conservative attitude after working in this sector for 10's of years. And they don't want to change. They do look at their neighbour when someone tries to change, and fails, because changing as one farmer is super difficult, so than other say like 'ha told you so. But they don't understand that when you work together you could achieve something. The new generation is more open to it though. They are going to workshops of permaculture and regenerative agriculture.

I even saw that some farmers live of their subsidies for putting seeds in the ground but not collecting it. Because the amount of grains they can get of the field does not give enough money to bring up the costs for machine to get the grains off. So tons of food are just standing there on the land. This is seen in Aragon, where the land is really dry. They have some green pockets with irrigation for corn. But if you want to change the soil in Aragon, you need a system change with planting trees, using cover crops, make animals wroeten in soil. But that would take years, it is a huge investment.

P. You said earlier they don't really work together, this is also what I noticed, can you elaborate on that?

S. Yes, so here they don't have the understanding for example that some machinaries you only use 3times a year. So you can buy them with different farmers together and split the costs. But what you see here, is that they all buy there own and they get subsidy for it as well to buy there own. While that money should be put into investments for green cover crops and other initiatives to make their soil healthy again. But they do have to believe in it.

Moreover, they see each other as competition. So why share your machinery? Or knowledge?

Farmers here live from little money. And also the banks/system does not understand the right way of doing agriculture. So for example when they want to change their agricultural practice, they have to invest. But they don't have money, so thy can ask for a loan at the bank. But the bank doesnot understand green agriculture, so they would say 'how about we give you a loan for a new tractor' instead of a loan for panting trees and using cover crops.

P. How do you earn your money with Volterra?

S. we have a lot of projects with the EU, so they pay for our jobs, and some bigger farmers that we converted they pay a part.

P. Is it difficult to find clients?

S. it is super difficult to find farmers that want to work with us and could convert.

P. What is your incentive of being sustainable?

S. I live here for 20 years and I see climate change happening in front of my own eyes. In 25 years we will be the new marocco. I am concerned and this is also a loss of food growing places. Only solution is planting trees, cover soil, retaining water. Especially now when it comes in extremes. You have to work in key lines, elevation lines. With water bekkens, biodiversity, irrigation, cover crops, bring the soil biology back. And a vibring ecosystem.

P. what are the biggest external influences?

S. Cynisme in the market, that is just really difficult to work with. They are changing, into giving CO2 credits, biodiversity credits, water credits (water filter for wetland), so you get money for what is on the land and the ecosystem services and not only for what you produce.

But I hope that we can change the system, pay taxes for plof kip and not for free kip. And make the badguys who use the wrong kind of farming, let them pay. So there is money for the good guys to work. We want to play a roe in that to forsen and develop this. Further than only using studies, but really bringing it into practice.

P. How does the government influence you?

S Spanish government does nothing. Sometimes they say something about sustainability but they do nothing to help. One minister of agriculture said that we should stop with bio industry, that it is not from this time anymore. Well that guy was dead, there where quotes like 'don't touch our meat' and 'hands off our jobs'. Not thinking further that a good way of farming can create more jobs.

P. Why do you think they respond so heavily to this?

S. Culture difference! They are not good at coming up with solutions here themselves. They have to see it somewhere and see that it works and then they can copy it.

P. why do you think they cannot come up with things themselves?

S. Probably from history. There was a huge distance between the 'normal man' and the people from Adel and the king. There was/is a top down policy, so the normal man does not have to think. Huge differences in income. But the people are yealous and envie the people in the top. But they don't trust them and the politicians. They come from a system where the government and policitians have let them down all the time. The only thing they can trust is themselves and there families, the family bond is super strong here because they are the ones that look after each other.

When you have a medical problem here, for example you need some adjustments in the house for that) you can easily wait 2 years to get help. So they don't see it happening that the government is there for them, therefor they rely on themselves / family.

Especially the young ones now don't see it happening that there is a pension money left for them when they are oder, therefor they try not to pay taxes right now. The problem is really deep.

P. but you would say if they care about family, they should care about surrounding and thus environment.

S. Yes but for many people here it is difficult to look further than themselves. The village, province, world, is way to far away for them.

Processor 1.

Formal interview Processor 1

Interviewee: General director

Interviewers: Paulien Janssen (P) and Matthew Neiman (M)

Date: 11:00 27-04-1996

P. Can you tell me something about yourself?

R. Well the bodega Ronmontero started at 1973. We used the sugarcane, and heated it till 67 degrees to obtain the alcohol. This is how it works in Spain and in Europe. Originally the sugar cane comes from papua new guinea, and via christopher colombus in his second travel it came to south america and spain. In south of amerika is the climate for sugar cane really well. It needs a lot of water and a lot of sun. But here it is more difficult, because we have a lot of sun but not that much water. but we have sugar cane from coast of malaga till granada, because we can extract the water from the mountain. Water in sierra nevada is sweet water. So we had the cane fields and people were paid. But it takes ingenuity, because I have been to places in Malaga, where it was not so good. So until 2006, what happens, all this part here was from the great distilleries of the canary islands. There was lots of trouble with the sugar cane, lots died. but now, not only 100 years later, the whole coast is filled with large grain mill with sugar cane distilleries. However, the old german historical process changed the conditions of sugar cane as well. It came from the streets, however we have to handle commercial blockades such as time during napoleon and now with putin. But nevertheless, the noria brought the sugar from south america to the ravines. The sugar was decanted and removed and a different type of rum was made.

The rum in south america is way more sweet, because of there different sugar cane, than we can make here in Granada/Spain. It is not better or worse than what we have, it is just a different characteristic.

So we cultivate our own sugar cane. We have our own cutting of the sugar canes and planting of it.

M. How does that work?

R. Planting of a new sugar cane goes within the old stack of the previous sugar cane. On european level they control the sugar that goes into the rum. . There are reglislations for. After cutting we process the cane to

produce the molasses that we use in our rum. The molasses have to ferment for almost 30 hours before it goes into our traditional system.

We are the only distilleria in Europa that works in with a traditional system. Do you know how the system works?

P. Not exactly.

R. Well i can explain. We stock the distillation bowls in a piramide. After the fermentation, the obtained alcohol is submitted to a four column continuous distillation process. In Ron Montero, they create a vacuum environment in the first column, which allows to bring the alcohol to the boil at 65º instead 80º obtaining a highest quality rum because the flavor is not reduced by high temperatures. They obtains two kinds of alcohol: sugar cane "aguardiente" of 80º and cane distillate at 96º. The "aguardiente" is reduced to 60º with water and charcoal filtered to remove impurities. But it is super important that we use pure water.

We produce 3 kinds of rum:

- Ron Pálido: Aged for 3 years

- Ron Montero Gran Reserva: Aged for 5 years

- Ron Francisco Montero 50 Aniversario: Aged for 10 years

M. do they all have their own piramide?

R. Yes they have. I want to have more than 3 rums, but at this point i dont really have the capacity to do that.

M. Are you the only one that uses traditional distillation?

R. Not the only one only one, but on commercial level yes. But rum is a traditional process. And ofcourse you have big commercial companies, such as Jack daniels, thats for young people to mix with coca cola. Pero our rum is not for that.

M. Yes that is what I also like about ron Montero, the taste is much drier.

R. Yes in our process, we extract the sugar. we also don't add it.

M. Is the bottle made in your fabrique as well?

R. yes. we 60% we sell to supermarkets. 40% we sell to distributors.

M. who are your customers?

R. we don't really have the party rum. So not the people from 16 years old, but more from 28 and above. The taste is more for 'adults'. So 30 and more.

P. And do you only sell in Spain or also in other countries?

R. The most we sell in Granada, but than Malaga, Jaen, Almeria and Sevilla.

P. So only in Andalusia?

R. Yes they count for 80%. The rest is for special cafés or shops in the rest of Spain.

M. do the northern parts of spain know you guys?

R. ofcourse, people who really love rum they want their specialty rum. We are not like coca cola, but well.

M. and Europa level?

R. Yes, we have clients in England, France. They actually like it, because we distal in a old-fashioned way, which is romantic. It has a romantic feeling. However, If we touch the current image of the product, our regular clients would kill me personally. Because they are romantics of the product.

We are always talking about the environment, sustainability, because we are also front line.

M. yes, because the change of the image is very visible. So I understand it should change little by little?

R. It is something personal of me, which is more and more visible in the world as well. Also I have the feeling that the consciousness amongst the young people about the environment is really high. My daughter is thinking about the environment and working in the campo and all. And she told me, we have to start recycling. And you have a big company and you should start recycling, because we need to reduce the waste.

M. And do you listen to that?

R. Well I can not ignore it and not be worried about it. So yes we start recycling than.

M. And how old is your daughter?

R. 17 years old.

M. they have to fight it too.

R. Yes, big temas that they worry about. Well to continue, another client of ours is in Belgium and Japan. And they also like the oldfashioned way of making rum.

M. Is it for the quality or for being different?

R. Drinking rum is different in other countries. It is something cultural. For us here, it is for being together with friends. In Japan it is really to share a moment, so when they enjoy each others company they really want to drink something good. Here we more drink just for the fiesta.

R. We have a distilleria and we have a fabrique.

M. ah so do you have a lot of people working there?

R. Well the distilleria has to be on and working 24h a day for the entire year. But we only use it 1 day, to get it out. IT is a really difficult process that should be maintained the entire time, otherwise you get either bad alcohol that gives head dics or it is alcohol that is used in the farmacia. So it is important that it is controlled properly everyday.

M. are there lot of rum distellarias in Europe?

R. well yeah, there are some at canary islands, and also here. But not much, but there are.

In spain you have Jose ... and ... . But they also sell to mercadona.

P. what are the biggest difficulties of your company?

R. The most difficult thing in our company now is how we have to position ourselves in the market. there are different places where you can be as a rum company. If you just want to have rum for the drinks and alcohol, people buy something that is really cheap → premium presio.

- Premium presio

- Marca Blanca

- Second market → second line.

- Quality rum

- Local

- Product premium

We are in the second market and local products. But we cannot deliver for the really cheap products. If you think about that also in the price is included the transport, etiket, packaging, carton.

So for us it is difficult to compete with low price products. Even though, they have super bad quality.

Another sustainability problem is the packaging and labelling. It needs to be sustainable. But it is also our appearance of my product. This is a risk for me, that the clients won't recognize my product and won't buy it anymore. I don't want the risk of losing clients.

M. what is it that makes it recognizable, the etiquette, the bottle?

R. all of it. Right now clients see our bottle and know what is insight. Another problem we are looking into, is that our clients are all 30+. Because our rum is quite dry, and the young ones like to have sweeter rum. So now we are looking into that, to see if we can fit their requests.

P. How would you describe sustainability in your sector and in your company?

R. part 2: 9.56.

We are making our label out of paper, it used to be made out of plastic. But I don't think it is that important, because when we recycle the bottles it gets melted anyways. But it gives an antique view.

We are going to keep respecting our traditional fabrication practices.

We have the old-fashioned way of distillation. We are going to keep respecting our traditional fabrication practices. We have man labor that have to control and work in the distillation, so no machinery and we control th e product. It is possible that our next investment will be in solar panels, to replace humans in automated systems for health and safety reasons. Even though it is not a very significant impact, we are working on plastic. Glass is fully recyclable, we have a glass bottle but it can be recycled. But we change the caps from plastic to metal. And all our packaging from plastic to cardboard.

Distributor 1.

Interviewee: Owner of Carmelo Frutas (A)

Function: owner

Sort company: Distribution place for fruits and vegetables → wholesale market

Place of the interview: MercaGranada Carmelo Frutas

Interviewer: Paulien Janssen (P)

Date: 9:00 30-03-2022

P. What is the path of the food distribution?

A. We have our food from suppliers and growers. After that we sell the food to small shops, shops and restaurants.

P. What is difference between supplier and grower?

A. Grower is the farmer directly, they just give the food from the land. Supplier is a middle form that already did the packaging of a fruit or vegetable, labelling, branding, they adapt to their client. If I ask for certain boxes,

they can provide me with that. They also select the category of the fruits or vegetables. Growers don't do that so they give just all the fruit in the boxes and give it to you, so is cheaper from grower. And the amount is different, growers are often smaller. Suppliers are mainly more professional.

P. Oke great, tell me something about yourself.

A. Well I studied management and industrial engineering, and I worked in a consultancy firm before, in Madrid for 7 years. After that, my father, who is the 2<sup>nd</sup> generation in this wholesale market, offered me to take over the business and I did. And I try to innovate it.

P. How would you describe the activities you do in this companies?

A. We try to offer to our customers the majority of products we can get. In earlier life, every puesto had specific vegetables and had only 2 or 3 growers. Now we have 150 suppliers and 40 growers, so we try to offer everything to our clients. We work with local growers, so from southern spain, malaga, Granada etc.

This is a wholesale market. Several companies like me. Customers come to me. Delivery is not main stream, some customers demand that, but it is just 10%.

P. So people from Granada come here, but also outside?

A. In the wholesale market everybody comes here. Every company has own form.

P. Who are critical stakeholders that influence your company?

A. We are our own stakeholder.

P. oke so your vision for the companye, that is how it is going to be?

A. Yes.

P. Oke, so what is your vision of the company?

A. I want to expand business and try to get vertical integrity. So create new business, like a supermarket that complements this business. I want to add to another stage.

P. What are biggest challenges?

A. We are restricted in space here. As long as other companies don't move, we cannot expand our business here. So we might search to other 'mercagranada'. But the power is that this wholesale market has variety and quantity. If one company does not have it, you can find it in another.

P. Other outside factors that influence your business?

A. Factors that come from client/consumer. Not my customer, but consumer. We feel that consumer goes to big supermarkets and not to fruit stores. Which by far is better in quality and in price. But they prefer the commodity of parking th car at a supermarket and buying everything that could be bought there in 30 minutes. There is no reason for a fruitstores to compare with supermarket.

P. So your only customer are fruit stores?

A. not only, also small supermarkets. Local supermarkets. With max 4-5 stores → Dani's, Aidrid.

The big supermarkets like mercadona and coviran have their own wholesale markets. They have their own suppliers. They fight the price, it is another way of work.

P. What is the name of these wholemarkets?

A. Mercadona, carrfeour, caprabo, Dia, Lidl. They are the big once. So they fight price, but in terms of F&V, they don't buy the good once, because they only look at price and not at quality. The integrity of these shop is only to look at price and how it looks and not the real quality. Each peer has there own price, but the size is different. Or the grower cut it 3 weeks ago instead of 1 week ago. This changes the price. We are expert in finding good quality.

P. And in general, is there anything at this moment that your company/sector needs?

A. yes, professionals! Because of the time that we open (at 4 AM till 10 AM). People with knowledge of informatics or professionals with a university degree, don't want to work at this time. I am the only one with university degree. In this entire whole sale market, I am the only one with a degree.

P. Why do you think that is?

A. Because it is a very traditional sector. Not only in wholesale, but also in supermarket (fruitstore). We have customers with 6-7 fruit stores, with 1 you cannot survive. But to manage that amount of fruitstores, you have to have a decent level of management skills. So now they don't do it professional, or efficient. They should have more professionals.

But we open at 4 in the morning, so high educated people don't want to work here, they want to work from 9 till 5. Normal hours. It is a rough sector to work in.

P. So we spoke about sustainability, how would you describe sustainability in your sector?

A. More what we do in the whole sale market, we have tons and tons of fruit and they expire. You have to sell in a week or you have to throw away. We prevent foodwaste by giving it away.

- we give NGO → so not to throw away → to food bank

- We give to calidas, here in Spain. → for religion, give it to church

- we worked with to-good-to-go but only for one month but the idea was too difficult. The people wanted high quality food for 'waste food' prices. And that just does not add up. They don't understand what food waste is. That's a problem. Also the to-good-to-go-company did not really understand their own market/client.

We work with boxes that we try to recycle. We try to receive the boxes and then return them to the grower to reuse it and clean it. In the whole sale market we find a project to do it in the good way, all the whole sale work together to do this. But it is difficult because in other companies there are no professionals that think about sustainability, so it is difficult to set it up.

P. Because you cannot do it alone as 1 company?

A. exactly. Not in here.

P. Is this one of the struggles you have in becoming sustainable.

A. Exactly, you need the others.

P. You should actually work together in one sustainable policy to get it going?

A. In our business it is difficult, because we are competition of each other. So what is good for my company cannot be good for the other.

P. Why do you care about that sustainability part?

A. We have to recycle, in whole sale market it is obligatory to recycle. We recycle in carton, plastic and organic (fruit and vegetable).

P. What happens with the organic?

A. when we cannot sell it or give it away, we have to throw it away. But mainly it is not in good condition then.

P. Are there other sustainability strategies you are using?

A. For recycling is not main obstacle. We try to throw away as less as possible. Hopefully we are getting there. That's it. As much as we lose on food, we also lose the money. Each company has its own strategy.

P. You said you want to open shop as well, why?

A. because it complements my business and diversify my company. We did during covid we delivered fruit and vegetables to the houses. It was working quite good. But now we also want a physical store to do that as well. Delivery serves to houses. We started as social thing during pandemic, but now it could be our business.

P. Would your company be open to improve on sustainability?

A. it is not our main objective. But one thing I have in mind to get quality standards → 9001, to get a system in terms of quality.

P. So it is a quality label?

A. Yes. But not in terms of sustainability, because I don't know how to implement that.

P. why?

A. I don't know what we do to implement it. In terms of recycling, cleaning?

P. yes or water use and energy?

A. well we are in a whole sale market, so if it was my own business I could install solar panels or do something with water. But we cannot do that because we belong to the whole sale market. But I wanted to install a kitchen to show cooking or organize events, but we could not do that. Because it is very traditional market, so they don't allow me to do changes.

A. nowadays you can eat kiwi all year round, but it was not meant for that. Like strawberry all year round is not common. In my opinion supermarkets are changing this, because they want to have all the fruits all year round, which is not good. Here in this whole sale market, you can only find fruits that are made locally and that are in the period of the year. Than the fruit and vegetables are good. This is the main advantage for us.

P. where do they get the strawberries?

A. from south America. Food chains are around the globe. We buy conference pear in the Netherlands. the apple that we are eating now, are from September last year. Not all of them, some are of last week. But we keep them in refrigerator all year.

P. is that always?

A. depends on the price.

P. how does customer know?

A. depends on supermarket, how they sell it. If they don't write it down from who the apple is coming from. In supermarket they only know the origen. But you cannot compare, but you don't know so cant compare.

This is in Spain, but in Europe it works different.

P. Why?

A. they explain more about the fruit in other countries.

P. you want to do that as well?

A. I would like to educate, in Granada as well. That is one of the reasons I want to have my own supermarket and the kitchen in the whole sale market to educate them. Teach them where food comes from.

In Granada everything is demanded on price. So if a cucumber is poorly shaped, it does not matter because it is cheaper. So it will be sold. Incentive for the people is price.

P. how do you choose your grower?

A. on quality of the food. But also how we have our understanding together. If I receive food that is not good, than we can negotiate over price. They give opportunity to sell, so if I don't sell because of quality issues I could have conversation with them. Same with the fruiterias that buy from me, when it is not a good batch they can come back to me and want also negociation by price. So we need good relations with the growers and my clients. I don't have time to check all the boxes that are delivered to me, so we need a trust worthy base.

Distributor 2.

Conversation Distributor 2

Function: owner Guerrero Granada ==> distributor/whole sale  
Interviewee: Distributor 2 (J)  
Interviewers: Paulien (P) and Matt (M)  
Date: 8-04-2022 11:37

M. How did you start to work in this company?

J. I started in Valencia, there it already exist for 33 years. but here in Granada we started 3 years ago. There used to be 80 companies here in the wholesale but it declined to 30. There are less companies now that are 3x as big. The market used to be different. It used to be all local, produced from here in the neighbourhood, and the farmers did sell directly to the whoesale markets. and the infrastructure was less good. but now it is all bigger. With the infrastructure now, we have products from all over spain, north europe and africa. But we could never have all the products, so if you want everything you could never just go to one company and buy it all.

Now we import products from south america, but we do that not as a company ourselves. there are big companies in madrid or barcelona that go buy these products and we buy form them. Now we dont have to think that products won't be there out of season. we can have them imported from latin america when it is winter here.

P. What are in general the biggest challenges of this company?

J. The most difficult thing for us is to always have our clients. We have a competition from big supermarkets like Mercadona or Corte Ingles.

M. Are they in competition with price or with quality?

J. With a lot of things but not with quality and price. because people that search for products with higher price, search for better quality. But there are areas and fruiterias that search for better quality, which normally has higher price, but the customers want both: good price and high quality. But the supermarkets want to have a wide range for all the clients. It is not only having competition with ourselves. but also showing the clients the better quality above the commodity. We have to understand the client.

M. And are more people going to fruiterias or mercadona?

J. Its getting less and less with the people that go to the local shops. For the fruiterias it is difficult, they have to work hard to maintain. Mercadona is everywhere in also city centers. and it is super easy, they have parking and they have all the products. so you dont have to go to different places anymore to buy your food and you can immediately buy the other things as well. Mercadonna has low prices, but they dont have the personal feel as the local fruiteria. But yeah for the customer it is easy to buy everything at one place, not having to go to fruiteria, pescado, carneria.

M. And buy cleaning stuff at the same time.

J. Yes, everything is there. It is difficult for the small shop owners. And in early times, people took there time to cook and to look at that vegetables. but now people eat fast and care less so it is changing. The young people buy fast and want to eat fast. and not take lots of time to see where they but.

So the most difficult thing is to keep my clients, and that they have customers that go the fruiterias instead of the big supermarkets.

P. Your clients are all fruiterias?

J. yes, fruiterias, small supermarkets, cooperativo coviran, a bit to campo granada.

P. And you said the knowledge of the clients is important for them to go buy there food at the fruiterias?

J. yes, well once they have come to your shop and have confidence in your products they keep on coming. but in general, customers do what is easy. It is all about trust.

Every province and every city has there own typical products that are often sold. but in general, especially for the bigger companies everything is a bit of the same. So yeah, for example in a city there is a dessert that is very well known that use oranges, than they consume more oranges in that city.

M. What do you think, what is the place that your clients/fruiterias can be more succesful? for example by explaining more about the quality of their products?

J. That is a difficult question. The advantages of the small shops and fruiterias is the personal contact with the shopowner. You can obtain more knowledge of where the products come from. There is trust in the food that is in the shop, because they understand that the shop owner does its best to find the best quality and best prices. Old people take more their time to find food and are used to go to fruiterias. young people have less time and go for what is easy. They go for commodity.

M. A lot of people also think that the big supermarkets are cheaper than fruiterias, do you think that is true?

J. Mercadona is cheaper in general, they have a policy that they always have a low price. but they set the price at the beginning of the year. They agree on a price for the fruits and vegetables at the beginning of the year, and keep it at a constant price for the entire year. So for example, Mercadona set a price on strawberries for 2,30€ a kilo for the whole year. But when for example the strawberries are in season, so there is more of them to sell, the price at Mercadona stays at 2,30€, while in fruiterias the price could go down to 1,50€. But when the strawberries are not in season, the price at mercadona stays at €2,30, and at the fruiterias it could go up to €4,-. So in general Mercadona is cheaper, but not for the things that are in season.

M. So that stability of Mercadona is also something that is easy for the customers.

J. yes ofcourse. Customers look at service, commodity and price.

P. what are external factors that influence your company?

J. the weather ofcourse.

M. when you buy products local, do you buy them immediately from the farmer?

J. from south-america we buy from the port in madrid. But local we buy immediately from the farmer, when possible. no more intermediation.

P. Do you have sustainability strategies in you company?

J. At the theme of ecologico or biologico, we practically do nothing with it. In other areas, such as Valencia, there are more ecological fruiterias than here in Granada. Ecological products often look ugly. People in Granada don't buy the products that look a bit ugly. So when the ecological products don't look normal, they dont buy them. There is only a small group of th epopulation that is interested in that.

M. Ah and the ecological farmers also work directly with the shops?

J. Yes true. They usually work directly with the shops. And there is a place where they try to commercialize the ecological products. but in general it is really difficult to do so here.

M. And the price?

J. Normally, the price of ecological products is much higher. but the aspect that the vegetables and fruits look more ugly, that is the really problem. because the customers dont have trust in us when the products look ugly. Eventhough the ecological fruits and vegetables are much more healthy, they will choose the one that looks prettier. that is in total the city of granada.

P. do you notice effect of climate change on the import of your products?

J. yes it has an effect on the production. ofcourse it has effect. But it is less cold for example, you see that it is getting warmer in granada. but now we have for weeks already a lot of rain and in the night it is cold. So the climate is changing a lot, the weather is changing between warm and cold all the time.

M. but does it change the production level?

J. claro claro. now we have a lot of rain, but super difficult. because we have to adapt to all the different weather conditions, without being able to anticipate to it. When it all of a sudden gets cold, we can not plant anything.

P. What are the needs of your company?

J. Well we have trouble with the hour schedules. we start at 4 in the morning, and a lot of people dont want to start that early in the morning. the old people are used to it, but the young people dont want to do it. so we have fights amongst our own people, because the second generation wants to open the market later. so they dont have to get up that early.

When you have studied for example, you want to work from 9-5. but not these hours. no one wants to work that early in the morning. Especially not when you studied. we work from tuesday till saturday.

## Service 1.

Formal interview – Tienda La Talega – Andalucia Slow Food, ecological supermarket

Interviewee: Service 1 (R)

Function: Co-owner of La Talega, together with brother

Place of interview: La Talega

Interviewer: Paulien Janssen (P)

Date: 19:00 15-03-2022

P. Mucho gracias para tener esta conversacion connmigo. Me llamo Paulien, como te llamas?

R. Encantada. Me nombre es [blanc].

P. Encantada. Porque has empazado esta tienda?

R. Básicamente, de yo he buscar de una forma de trabajar por cuenta propia y conforma de mi valores. Sobre uhhh tema de productos local, y productos ecologico y todo bio. Y todo lo que se fuerra de la zona, de que buena conseguir aqui. Y productos tradicionales tambien, cultivar las verduras y frutas en una manera que es mejor para la medio ambiente. Eso forma es mi razon principal. En la momento, yo tengo un huerto y segurar es completamente ecological.

P. Y cuando estuve las primera vez que tu pensias que la medio Ambiental es importante para ti?

G. Primera vez, con 6 años. Mi primera noticion. Y yo llevo con esta tienda 6 o 7 ano, y he empazado mi huerto 5 años antes.

P. Son todos de frutas y verduras de tu huerto?

G. No, ahora mismo no. Cuando empeseta la tienda, ya no pude seguir con el huerto. Pero si esta verduras y frutas esta productores agricultra de aqui de Granada, de ecologico y local.

P. Tienes los nombres de proveedores lo que usas para mi?

G. Si, son: Cooperativa Valle y Vega; Miguel; Matias; Fundocion empresa y juventud

P. Para ti, tu has un intrinseco motivacion para ser medio Ambiental?

G. Si. Mi infancia fue muy en contacto con naturaleza. Siempre en un entorno lo que tambien respectaba, sa a un nivel arquitectonico y la distribution de sitio de mi vida. Habia una consencia, no, para respecter eso. Y bueno tambien, va mucho a la montagna etcetera. Connecion de la naturaleza es muy fuerte para mi. Y bueno eso es que siempre ver a la forma la cual respectades. Respectade no hablado..? basicamente eso. Y yo tambien el no peder las productos que ya ecologicos con antiguamente. y un poco la tradition tambien, de la existe, bueno, en general se llama vida mediterania. en cada provincia, incluso en cada pueblo hay una resetas tipicas tambien. entonces es un tipio de productas que un pequenia familie. un hacienda de manera traditional. me gusta de idea de tambien seguir con eso.

P. Y tambien hay un poco un community son tiendas ecologicas?

G. Efectivamente. Genera una RED de personas, que somos el mismo habia y estan posseso generalmente un comminidad tambien. Incluso las gentes de vario, por ejemplo personas de artes.

P. Quien son los clientes de tu tienda?

G. Hay todo los tipos de clientes. Hay personas mayores. Yo tengo mucho personas mayoras. La mayoría de gentes aqui en este vario lo que venir a mi tienda son mayores. Porque es comodidades. No facil para ser mayor aqui. En albacin, tienes que subir muchas escaleras para ir a un tienda abajo. Entonces es mas facil para ir a mi tienda, lo que es cerca para ellos. Y yo hablo mucho con mi clientes sobre las verduras y frutas, y eso es mas personal. Hay gentes todo los tipos. Y personas quien so conscientos de la tema y si no,la yo mi de creando. Aqui conocido tan comprando.

P. Entonces, has un poco un funcion de educatore?

G. Bueno. Si, casi todo las tienda asi temenos un poco eso funcion. Ademas tambien es muy facil, que mi entrasaia, gente aqui comprando venga los productores. asi siempre tiene la opcion de hablar directamente con ellos.

P. Si esta tienda es mas pequena.

G. Efectivamente. Nos temenos distributors, precticamente, tambien es una dificultado para tiendas asi. Tienes que estar hablando con mucho gente a la vez. Porque solamente las verduras or solemanta cerveza or pan or solemante queso no es sufficiente. What she says here is that she has to talk to a lot of different supplier because she sells all kind of stuff, same as a supermarket. But she want it to be ecological, therefore, she has to talk to a lot of different suppliers.

P. Que factores externo hay una influencia a tu tienda?

G. No mucho factores. No se. El precio de electricidad por ejemplo.

P. Tu he empezado este tienda solo?

G. No com mi hermano.

P. Que son los retos para empazar esta tienda?

G. Los retos son: si informar los consumidores de que con su compra ellos un tipo de model de existentia. y quidar el entorno. (So one of the challenges is to inform customers about what they buy does have an influence on the environment). No todo del mundo estan concencia.

Oto reto s tener sufficientes clientes → to have enough clients.

Retos hay mucho, en espagne no es facil. on nivel fiscal es difficil.

P. Porque?

G. porque los taxes son muy alto y similar por todo las companies. Y es diferente en otra pais. (In spain every shop or owner has to pay the same basic amount of taxes, which is a lot for most small owner shops.)

Otro reto es tener maximales clienteles possible, processo generar comunidade personas que tenga interese por esto.

P. para conseguir nueve clientes es un reto tambien?

G. Si, claro! voy un dia tambien, por ejemplo, todo del mundo es atras de internet y digital y nosotros realemente yo no negocio, porque creo que si yo estoy intentando generocio local, a otro punto en espagne. por lo tanto eso es un reto, no conseguir gentes cercana que se tomer trabajo alli a un negocio y conocer las personas y ver esta comprando. Thus, the problem is to find customers that live nearby, because she is not able to bring her stuff to other places in spain.

P. Como escribes sostenibilidad en tu sector?

G. Dentro de agricultura por ejemplo. es el consumir minimo agua possible, y trabajar en casa con productos bio-degradables, no plastico. Tambien se trabaja en agricultura biodinamica, y tema de emvasse es difficil la tema de emvasado. porque hay unas leches agui a vezes no permiten de terminado productos no emvasados en plasticos. asi se intenta que plastic recyclable y reclado. por nosotros por ejemplo tengo laas frutas y verduras no tenemos plastico . los envases de huevos son recycles, porque las clientes volven las envases de huevos. siempre interntarlo estar circular. las cajas de las verduras exctemente igual. volver de agriculturar. El interntar absolutamente receclar lo que podamos. tener tambien agranal para venir un propio vase. (people bring their own cup to take grains, or nuts). y bueno, asi, productos que curan todo se necesidades de las personas. Mas gentes seguin al tema, porque preferado tambien las campos que cultivo ecologico que campos estar lindando, que es possible que se pueden y cual va poco a poco funcionando. se la a casa las gentes convertido. y me gusta mas les gentes major. porque los ninos son mas facil, porque ls padres hay menos conciencia con las chickos mas joven.

P. Es possible que comida ecologico es un poco mas caro, entonces mas facil para comprar para gentes major que los jovenes?

G. para las jovenes es un poco de falta de education en su comida, porque realemente la diferencia de precio no es tanto. Y si saben para como comprar no desichar nada, es un otra de las cosas, yo no pierda nada. Todo de cosas reutalisarlo para mi o otra persona. Creo que tampoco quizas en ultimo 20 anos, la manera de comprar se ha hecho como productos muy processados o cosas cogelan y poco cosa fresca etc etc. entonces la gentes estaba no mu concencia en comprarlo basico, fresco y volver en comprada en un periodo corto. Entonces creo que sear mucho, si sabes de de organisas, un poco la manera de concinar en general. creo que no es mas caro, sincerlamente.

P. No es la ultima razon. Que haces con las verduras y frutas lo que son perecendo o faltando?

G. En general, siempre distrubir con mi familia, mi o clientes.

P. entonces no waste?

G. Si, entento zero waste.

P. Quizas un poco sensible, esta ser sostenible lucrative para ti?

G. lucrative? No. yo trabajo mucho. Simplea mucho mas tiempo compartir de supermercado conventional y somos no lucrative. Generalmente las supermercados hay 1 distributor para traer todo, pero aqui no. aqui estamos hablando con cada les productores para las productus y entonces eso es muy personal. Implica que eso hay un tiempo muy grande. (it takes a long time to talk to all the different distributeurs and ensure you got high cuality products from ecologically grown places). Despues yo no tengo empleo para otra personas. Entonces hay solo mi en la tienda. Los margenos son mucho mas corto que supermercado.

P. pero es suficiente?

G. Si es suficiente

P. Y hay mas estrategias de sostenible en tu tienda?

G. Si minimo usage las electricidad. Everything is made secondhand or recycled. We use recycled paper if people want to use a bag. We use no plastic in the shop. Everything is ecologically grown. We try reduce our water usages. We have a collaboration with other ecological shops.

P. Perfecto, mucho gracias para esta conversacion.

G. Gracias a ti.

## Service 2.

Interviewee: Service 2

Interviewer: Paulien Janssen

Place: Col&Flower

Date: 09-02-2022

Service 2 is originally from Chile, and moved to Granada 15 years ago and started Col&Flower in 2020.

### **Description of the sector:**

Col & Flower is a mini-market where they sell locally obtained food supplies without using plastic. Their strategy is to buy huge amount of a certain product all in one go. This way there is less material necessary to pack the product. In the store the products are stored in glass jars and customers bring there own bags/jars etc to collect the food that is bought, such as drinks as wine and beer, nuts, herbs, seeds, spaghetti, rice, cacao, oats and much more.

All products that are sold here are from local farmers in Granada, except for the bananas that are for Gran Canaria. They don't supply customers with plastic bags.

### **Why do you have an interest for sustainability in your work?**

She sees around her that it is necessary to worry about the climate. She says she has noticed in the last years that the temperatures within the city are driven to a degree that is not healthy anymore, aka 'insane'. She wants to contribute to reduce this heath effect in the city by improving sustainable options for food supplies in Granada. She says that an equilibrium needs to be obtained to minimize climate change.

### **What are the roadblocks to overcome while becoming sustainable?**

It is not easy to run a sustainable orientated shop, because she does not make a lot of profit, actually almost none. She is working on this because she intrinsically thinks it is important, not because she can earn a lot of money with it.

But other than that, not really experienced roadblocks or difficulties.

**What made you eventually open this store?**

In 2020 she converted her former shop, which was selling sustainable poppets of recycled material, into this mini-market. This was because of covid, the other shop could not run anymore so Covid pushed her to realize a different company.

**What could help other companies to become sustainable as well?**

She thinks a push from the government or municipality is needed to make other companies change. For example, make rules to reduce use of plastic bags and plastic in general. Less materials for a one time purpose only. The government/municipality needs to give the push when the drive doesn't come from within.

Furthermore, we need to make it as easy as possible for customers and shop owners to become sustainable.

**Were you the first sustainable shop like this?**

No, 3 other mini-markets like this exist in Albacin and a couple more in the city center as well.

**Is there a community of people in Granada that work on sustainability?**

No, not really at the moment. A community for sustainable shops could be experienced as a positive thing, to communicate about strategies and it could be a drive for other companies to take a step in the right direction.

Service 3.

Interviewee: Co-owner of the bar, 38 years old. (G)

Function: Co-owner of the bar 'I need coffee'

Place of interview: I need coffee bar

Interviewer: Paulien Janssen (P)

Date: 13:30 15-03-2022

P. You are the owner of this bar right?

G. Yes I own this place, with two other guys. And uhm actually I am the worker one, the others are outside doing the administration.

P. Why did you guys start this bar?

G. Well actually, me, once I left London and I came here in Spain, I had my own restaurant with my girlfriend for 1 year. Then we decided to stop, not because it was bad, but it was really busy in a place that we really did not like a lot. It was in a small village, so the people were really strict and not ready to test new stuff. I am Italian, I used to do fresh pasta or pizza, but they where not used to try new things. They just wanted chorizo or things that they used to eat here regularly. Sometimes I get annoyed to get out and eat, because it is always chips, eggs and meat.

P. That is what the Spanish guys want?

G. Usually, this is what the Spanish cuisine is. Basically, of course you can find other options. But once we stopped, my girlfriend started to work in another place, she is manager, in a dutch company. And I started to work in another restaurant as a waiter, but after 2 months I was really tired. Because when I left London I wanted to have my own business and not work for someone again. So then the owner of this place asked me to be the manager. But then he wanted to sell the place. But when I started to work here the restaurant was getting better.

P. Why did it get better when you were working here?

G. The previous always had a huge whole in the finance. He bought something for 5000 euro and sold for half of it, so when we did the research, there was missing something. They were thinking he was stealing stuff. And

his energy at the end of the day was low. So when I started working here we started to make 6x more. So we can now make the store better and bigger and improve.

P. Where was the other restaurant that you had?

G. It was in Jaen, a village between Granada and Cordoba. My girlfriend is from here.

P. I am also kind of interested in that, because you said that you did it for 1 year, and it was mainly because of the people that you stopped doing that?

G. It was a really weird place, this place is small and really beautiful with little small church, 20000 citizens. History is amazing. But the people are really weird, it is not a joke. If you type in the name of this place, it is the first place in Spain of people killing themselves. It has a high suicide rate. There is a study, but they still don't know why. Together with two other towns they call it the triangle of suicide. I did not know that before working there, otherwise I would have not done it (says jokingly).

G. I don't know how to explain, but in a small town, it is complicated. I am from a big town, I am from Napoli, so London was no problem for me. You see people every day, things are not in a routine/repetitive. Of course there is a routine, but at least it is refreshing. You don't see the same person twice in one day. And you have interesting conversation. In Jaen there were people coming in telling me how to make my coffee and telling me what price I should ask for. Like come on I am Italian, don't tell me how to make coffee and how to do pasta. They where olive farmers all their lives, this was really bad. These people used to work in the olive fields, imagine it would be the same thing if I would them how to pick the olives. And it is lots of hours. To start your own business takes a lot of time, you have no rest of the day. Because you have to go to the administrator, do some paperwork or shopping. For a couple, pffff, it was to much, big challenge. And the customers were really stupid. The place is amazing, but what we need to do to change that..

P. And for here in this bar, what are the biggest challenges to run this place in Granada?

G. Honestly I really fell in love with Granada, it was everything so easy. Of course there are bad moments, life is always up and down. But Granada is a town, is not for everyone. Who want to stay and live in Granada, they are already inside that I want to live in this way. What am I talking about? I am talking about Granada is green, party, is night, is day, is mojito life, it is like you are in Marocca but no, you are is Swiss but no. only 20min and you are in the snow of the mountain, but in the same day you can swim on the beach in only 30 min. it is more than a challenge it is a pleasure. I don't think I will leave this place quite soon, it is difficult to open your own business, yes it is. Because in Spain, the bureaucracy is really slow. In England, if you need a bank, the bank is open all day long. Here after 2 everything is shot. Well it is understandable because in summer at that time it is to hot.

But I am born in a restaurant, so I think by the age of 38 I feel well equipped to run a business like this. I really love cooking, be in my kitchen, but I don't want to work in a kitchen you know. I want work with the customers. In England I learned a lot about customer service, which is for me really important. In Granada it does not matter if you have good coffee or good product. The customer will be back just to see you again, not for the coffee. So this really matters for me in a business. For a time I run my own roastery place, the coffee was amazing, but my mate he was not so good with customers and that is bad.

P. Is there a different way to interact with people in Granada?

G. This depends, people can be different everywhere. The Grenadian people are famous for being 'Malafoia', it means that they are a form of rude, they like to make a joke but let you understand it is not a joke. Bit sarcastic. It is different, when you go to Sevilla or Malaga you see the difference, the people are really open and open minded. Also demographically, when you are closer to the sea and with a port there are more influences from outside. Granada was the last empire of the Arabic kingdom, this has a major influence on the stubbornness. You can also see it by their appearance, look really Arabic. I like that. But some people are a bit close minded.

I love my place, I have regular customers, but this place once you cross this door, it is not Spain anymore.

P. I see that as well, you have the vegan and gluten free options. Why do you have that?

G. Once I arrived here, this place was already directed to the people who were allergic to gluten. And when I took over I hired this girl who was a strong and strict vegan. It was really new for me, cool to meet here, strong feminists. In a way she opened me for things like vegan. I asked here to make a vegan cake. Because when I started everything was brought from outside that you only bake it.

P. like a full cake that only needs to be put in the oven?

G. Exactly. So for me it was like, lets do something for that no one has. Not like the croissant that we just get from our supplier and everyone has it. But the first time with the vegan cake, it was a surprise. I hate it when someone is vegan, that they want to press that on you. But she was not like that. But she did ask me to be her guest for dinner. And I thought, oh damn I don't want to. But then I went, and the food was delicious and the vegan options are huge. I am not vegan, I like meat, I try to reduce it. By the way, I knew why the vegan movement start. It is not because they don't want to kill the animal, or big production of meat. But because of the gasses of the cows. Don't know if you know that. Is bad for the atmosphere.

P. So is that the reason that you use more vegan stuff, for the sustainability part of it?

G. For sure. And also the milk, the plant milk. They have the four white poison, 4 things we eat every day, I am talking about white flower (processed one), sugar, salt, milk. They are not good for you to take everyday, but we cannot leave them out of our diet. Really difficult to find food without sugar. Bread is made with sugar. I try reduce amount of sugar in our cake, but because it is vegan we use the sugar to glue it all together.

P. You have been working on this. Is that because of the employee that opened your eyes to think about it, or where there other influences?

G. Before, I was in London, I worked for a company, I really loved it, because they trained us every day to manipulate food. All the allergenic. Alle the protocols to follow. When I got here, I had more gear. Here they don't know about allergenic. 'its all gonna be okay'. I saw a tapas place where they served bread to a celiac allergic person. Most of the people really have to get in a course and learn, because they play with life of the people.

I can never forget my first time in London. I was chopping the head of the salmon and after that opened the fridge with the same glove. The chef shouts and says 'all stop, do you see this man'. And he was really mad that I opened the fridge door with the same glove that was touched by the salmon. Really to prevent contamination. I learned that you can kill a person quite easily in a kitchen.

P. Ten ways to kill a person in a kitchen.

G. hahah exactly. Here I notice they don't know that much about it. Only the big companies (macdonals, burgerking) they are really really clean. Is amazing. But food is rubbish.

P. Where do you get the ingredients of your food from?

G. I have a friend here at ecosuper. He fights to reduce gasoline. I try to buy things that are closer to me to reduce pollution. So I buy avocados from motril and mangos as well from the costa tropical, because they taste great and they are local. I have stopped to buy avocado from south America. Also because it is a trend now, and the price for the local people in equador or something, that is so much higher for them now. Besides that, the fruits and vegetables are taken from the tree prematurely, because they have to travel, but when they come here, they have to be eaten in 2 days or they go bad. And the poor families there cannot afford an avocado now anymore there.. that's bad.

I have a man, he is a farmer in motril (Aquate Belen) and he calls me daily to ask how much vegetables I want. Now I buy bananas from gran Canaria to support them after the volcano outbreak. But I mix my suppliers because if I notice that something gets bad easily, I don't want to waste food. So I want good quality and not have to throw it away prematurely. This is why I also make all my food here fresh. Before they used to prepare the sandwiches in advance, but when they where not sold, they had to throw them away. I don't like that. So I make everything fresh.

The rest is supplied by Disbesa. But they just changed my vegan milk. I had soja milk from a brand, but they just changed it, probably because of money. But I don't like it because I have an app called Yuka, and this app shows how good a product is in terms of nutrition for the person and this first milk 'Yosoy' was 80 out of 100 points, while the new alpro soja milk is only 45 out of 100.

P. Are you obliged to use their milk?

G. No I could buy milk myself, but I am a bit lazy to search for milk in other places.

P. Are there other outside factors that influence your business?

G. Uhhhhhhmmmm.... Actually it is more because I am a bit lazy. I could make the research to say, from now on I will buy the milk in another place. I don't know. I try always to educate my customers. For example when someone asks for sweet in the coffee I say that sugar is more healthy than those other sweet. The sweet is even worse processed and bad for the health. The app does even say 'are you joking' with this sweet or alcohol.

P. You are changing the way you look at food, and you think about what you eat and what you serve. I relate that to sustainability, because you also think about the influence of gass on the environment.

G. think about it, we are the only species on the earth that steel milk from other species when we grow. And we don't even need that milk.

Most things are thought of by big companies to make you buy, buy, buy.

#### Service 4.

Interviewee: Owner of the coffee shop (K), Russian

Function: owner

Place of the interview: Stories

Interviewer: Paulien Janssen (P)

Date: 13:00 16-03-2022

P. Hi thank you for doing this interview with m, my name is Paulien. What is yours?

K. Thanks to you, my name is Katharina.

P. Why did you start this bar?

K. It was always my dream to open a coffeeshop in the city center. I was always dedicated to do other things, but then covid happened with quarantine and I thought life is too short. I have to realize my dreams now and not wait too long.

P. So you started this a year ago?

K. Yes, I started my own coffee shop last year. One year and one month.

P. How is it going so far?

K. It is okay. It could be better but for now I am satisfied.

P. Why could it be better?

K. Because first I started with the pandemic. There were restrictions about the opening hours. The people were scared to go out. You could not sit at the bar. People wanted to stay at the terraces, but I only have 2 tables outside. So less people, is less money, so it could be better. And then government started with QR code. So again, some people did not want to use it, others did not want to show. Or did not have vaccine. All this year is problematic.

P. I can imagine. And besides covid, were there other challenges to start a bar?

K. It was rather easy. I am Russian, for me it was not that difficult as it would be there. But I bought this bar with a license. So this bar used to be a Spanish bar, with lots of fried fish hanging, lots of fat, smell of oil and fish. And it already had all the licenses. So I just had to buy the bar with the license and did not have to do the

entire bureaucratic process. Which made it a lot easier for me. And I converted the look of the bar and prepared the menu. Before I did not know about this part of business. Everything new, I started to learn how to make coffee, where to buy products, how to cook toast, how to serve.

P. Yes, where do you buy your products?

K. To local shops, that for example the milk, I buy: it is a local company, they have a farm with cows near to city of Granada and they produce milk. 30km away from here.

I buy fruit from local fruit shops.

P. what is the name of this company from the milk?

K. → los Pastoreros. It is from Fuente barceros.

P. and the fruits?

K. little fruit shop. They come here to the door and then offer it if I want to have it. And when the product is good, I take it. But it is not something big. Don't know the name. it is all local. And vegetables are from there as well. But I only have avocado and tomato.

P. Is there a reason you buy local?

K. It is a local product, so it does not need long transportation. Closer to me is better, does little harm. I am a small shop myself so I want to help other small shops as well by buying there stuff.

P. I understand that. What are outside factors that influence your business?

K. Pandamie. Government, if they forbid something or not. Except pandamie and crisis and all this. Now there is a strike of trucks, because of the high gas prices. And so they don't bring products to Granada anymore. So my normal distributors for honey for example, they cannot sell it anymore, so I have to go to other stores to buy honey. The prices are increasing.

What else? Usually I depend a lot on the weather. Granada has lot of heat or cold. In winter is okay, but in the summer it could be 45 degrees. And people go out on the beach or mountain, and do not go out during day time. So in general in Granada, July is a bad month. There are no tourists and local people go out of Granada.

P. what do you do with that?

K. last year I closed for 2 weeks. But I am measuring the possibility this year that people can stay working here. That I stay open but with less income.

P. Yeah okay, so you take that loss to be open. I saw you were also serving alpro soja milk. Why do you have that?

K. there are a lot of people now, I don't know if it is mode or stylisch to be vegetarian, or stylisch to have healthy life. Okay it is stylisch now. But lots of people now look for vegetarian or vegan milk, and I like to have something different. Because in typical Spanish bar, you can't find almond or oat milk. You can have without lactose or soja, but not these other variants. As I consider my city a bit different, I have to offer something different as well. Not very typical.

P. So for you it is a selling point, to be different?

K. yes.

P. okay, cool. Cause normally people take that for sustainability reasons, do you think about that in your shop?

K. Sustainability, what do you mean?

P. So for example these different milks or using renewable energy labels?

K. No, I am not about this. My boyfriend is about this green topic in his job. But for me it is just about offering something different to have a more different public. To offer what people want.

P. So the drive for you is the clients view?

K. yes.

P. would you be open to think more about sustainability in your shop?

K. no, that is not the case. Usually if I can do something for the environment, yes we do. But in general this is the government who obligate us to think about sustainability. For example in Spain it is now little by little prohibid to use plastic. So we have to replace our plastic straws with carton ones. But these carton ones melt in hot drinks.

Little by little If I can replace plastic things for carton things, I do that. But not because I want to be more sustainable but to make it more esthetical appealing. I am not about the environment, but I want it to be more stylish. If I then do something good for nature, that is a nice side effect.

P. so if the clients or government would drive you to, then you would do it.

K. Yes both things. The clients create a new idea and the government forces you to change things. So usually I am driven by 2 parts.

P. what do you think about that?

K. it is good. By government it is not always to good, but by clients it is good. This is a business, so you do what your clients want you to do.

P. Great, these were my questions, thanks a lot for this interview.

K. I hope I could have helped you something.

#### Service 5.

Name Interviewee: Service 5 (J)

Interviewer: Paulien (P)

Study: Environmental Biology

Function: Co-owner of the shop: Las tiendas de los unicornios

Origin: Madrid

Diet preference: Vegan

Date: 20:00 09-03-2022

P. Why did you start this shop?

J. I met my girlfriend Larissa while studying in Copenhagen, Denmark. I worked sometime there in a bar with a lot of boardgames and I thought I wanted to do something like that. Besides that, I studied Biology but I don't want to work as a scientist or researcher, so I needed to find another profession what I could do. I was interested in biology and permaculture, and the idea of this shop was to make a closed cycle, with using vegetables and fruits in the shop that we would have grown on our own land. Unfortunately, we are not able yet to fulfill this idea.

P. Why did you start the shop in this way, vegan shop?

J. I am a vegan myself, so it was just logical for me to than also use veganism in my coffeeshop.

P. Why are you vegan?

J. Well, it started that I found out that I was allergic to white fish. I ate it twice and both times I ended up in the hospital, so this is when I decided to stop eating fish. After a while I noticed that milk also had a bad influence on me, I did not feel so good after drinking milk. Then I started to think that if milk is not good for me, then probably the animal that produces the milk would also not be good for me. So, I started to stop eating meat. So it was a really slow transition, and I used to have cravings in wintertime for fish but I realized it was just a craving for omega-3 and I started to supplement that with other foods and since then I have had no cravings anymore. The transition was slow for me and in that time I was living in Copenhagen where it is really easy to be vegan. Lots of options in the store and restaurants. Besides that I had a lot of sort of hippy friends that all

had weird diets, some did not eat garlic because that would disrupt their meditation. So no one was withholding me from becoming vegan. I had no influences from the family or friends back home. Later when I came back to my parents, I had to be more explaining to my parents about my new diet. But now after a lot of years, there are also converting. And they don't call themselves vegan, but for 80% they are eating vegan.

P. What are the biggest challenges for your shop?

J. The people. People in Granada don't want good coffee, they just want something cheap and something that is familiar and they just can grab it and drink it and go again. And have something cheap to eat with it as well, without considering where it all comes from. And they are not willing to pay a bit more for good quality coffee. This is why it is more difficult for us, because we do not have regulars. We have to attract new customers all the time.

My customers are mainly Erasmus students from northern countries, lots of Germans. And tourists from northern countries. Not Granadan people. I don't have regulars. People don't care where coffee comes from, normal brands have all mixed coffee without the known origin of the farmer.

Another big challenge to open the shop was the paper work. To get through the entire bureaucratic paper work of the Spanish government is awful. I don't want to relive that scenario. You need to fill in all this paperwork and then wait wait wait for it to get approved.

Besides that shop used to be a clothing shop so we needed to do a lot of changes, installing a bathroom and stuff. Moreover, there are weird rules. So we had to make it wheelchair friendly, but we cannot have a drive at the door. We need to have a bell so a disabled person can ring it and then we can put it outside. Because it would be too big on the street, but now we have a sign outside that is bigger and that is allowed by the government.. really weird.

Taxes for autonomous workers is too much in Spain. We pay at least 250, this is a base and not as percentage of what you earn. We did get help from the government during covid when we could only use 50% of our capacity.

P. You are a vegan restaurant, does that promote itself?

J. We don't promote with the fact that we are being vegan. Vegan is a scary word in Granada. We like to have people around that order cappuccino and we use oatmilk and then after some time that they realise that it is vegan and not mind it. Or trying something new, so oatmilk instead of cow milk, and really discover that it is nice. But we don't advertise with the vegan because it could scare people away as well.

People are in general difficult in changing their habits, they are lazy and therefore selfish. However, by being selfish they are also self-destructive because they won't learn new things and also don't explore the positive effects of changing and learning. So lazy people stick to their habits, won't explore new things or don't put their effort into learning new things. And they are being selfish and self-destructive in this manner. Because it takes an effort to change. But you can't improve if you are not willing to learn new things and this is selfish for the world and environment but also suicidal for the human being itself. And especially in Granada people are like this.

Also people eat late here, so they come late, we don't really fit in the Spanish lifestyle. Old people are really stubborn in trying new things. It is the mentality of the city that they don't care for good flavors and sustainability. They just want the same thing, always.

P. What are outside factors that influence your shop?

J. The hands of the market and the customers...

P. How would you describe sustainability in your sector?

J. Sustainability, what is that? Laughable? It does not really exist on a big scale in Granada. You have private companies, like myself, that work on sustainability in their company, but it is very small and very local.

Only Granada Limpia is doing an effort which is a bit more scaled up.

P. Would you like to have the small companies more connected?

J. Wish there was a bit of a community around for vegan/sustainability. I do provide the space for people to sit together or organize conversations here about sustainability, but the network does not exist yet. We contacted permaculture farmers to use our coffee to fertilize the land, but they did not work with it.

P. What are your strategies for sustainability in your shop?

- J. Coffee: ecological, transparent, no adjectives, only 1 middle man and they know the real farmer of the beans. Use arabica, which is a more delicate but better bean, soft in flavor and more healthy. use providers that don't mix the beans, so it is all pure 1 bean coffee.
- We don't have 1 provider, we choose everytime what the best fruits and vegetables are that we use in the shop. This way we can choose if we take the ecologically grown one or the one that is locally grown. In general, all that we take is locally grown.
- Used scrap wood to make lots of things in the shop → the bar the tables, plant cassettes. Half of the materials that are used for the shop are recycled, part is second hand or found on the street, other parts we bought new.
- Recycled paper for the coffee cups
- No plastic straw, but we use compostable straws (cannot use for hot temperatures, because it will melt)
- Use compostable lids for the coffee cups
- Buy our energy from a company called 'Gana Energia', and they make reusable energy. Of course we tap it from the net so it is mixed with other energy, but we invest at least in this way with reusable energy.
- We use locally grown as much as possible, decide case by case what is best.
- We provide everything vegan, so that is a sustainability strategy on its own.
- We are really specific with our portions, so we don't have leftovers. Only if someone did not like the food and still touched it. I would love to have a little pig to feed these leftovers, but that's not hygienic. But in general, we have no leftovers. We measure milk really precisely. Don't throw away anything, otherwise I will eat it myself.
- We recycle the materials. But it is not that convenient, we have to walk quite far to recycle our waste.
- Insulated the floors, walls and used straps to reduce 'tocht' from the windows. It is actually really hot in here normally, we have a small stove that we lit sometimes to get it warmer. But because of our insulation the shop is really warm from itself.

P. Where do you buy your food in general?

- J. Robles: they have their own land and grow most stuff locally on their own land
- La tahona
- ALDI → has a great organic/local food line. They use the right Ca<sup>2+</sup> in their vegan milks so it will foam and it does not use more adjectives
- Coffee roaster we work with is directly in contact with the farmers. And they are again using reusable cans, recycled plastic, 100% Carbon neutral, transparent about who earns what and who works in the chain. This way you can choose. We use single origin.
  - o Goodbeans
  - o Falcon Coffee
  - o Cocora coffee
- Kilometre 0: local food store, have their own land, where they grow: pomegranate, apples, bananas.

J. We don't use a middle man because we want to decide for ourselves what is the best food and not sell our soul. We also don't work with coffee companies or coca cola. So we bought our own coffee machine to be independent and not having a big brand deciding what we have to sell. This is more difficult because we have to invest a lot in our place in order to be independent.

P. What kind of other sustainable strategies do you want?

- J. Our vegan milk ([burgos] rice, soy, oat) comes in containers that use paper, aluminium and plastic all in one package. That is really difficult to recycle. We don't like that, but at this point there is no other option because we buy it in the shop. We can make our own oatmilk but that would not foam so the customers would not like that. And we are only with the 2 of us, so that would also be too much work.
- Besides that, we recycle, but apparently recycling in Spain is really expensive, so they don't really recycle. Only 1% of the stuff is recycled, the rest is just put in a landfill.

P. What do you wish for?:

J. We wish to make our own farm to close the circle. That way we can grow our crops ecologically with the coffee drink of the shop. And close the cycle.

P. You said mainly Erasmus students come here, is the business lucrative enough?

J. We have Erasmus students, we have little salary, but almost not enough to get by. Some old people asked me for decaff, we don't have that. Decaf is actually not healthy because it is over processed.

P. What do you do about that?

J. Move to Valencia, we think it is a bigger city, more open for veganism and shops like this. Not the cheap people from Granada that are close minded. Granada has no cultural aspect, it is only tapas but not with good quality or healthy food. Just quantity to consume and to be full but not nutritional or even good. It is a mindset that does not fit with our shop.

P. You are from Spain right, why are you different?

J. I have a diverse background, I went to catholic school, very religious, while at the same time I was with the boys scout which was super atheist. So that was very diverse. I went abroad, saw how other people lived. Got some more life experience than just staying in the same city all my life.

P. What could other companies do to change?

J. There is no easy change, easy change is green wash. For example, coca cola. Everything they say to become sustainable is not true because they are too big to be in essence to be sustainable. There is a limit to what companies can do when they start to grow. And in order to stay sustainable, a company should stay small and local. Once a company grows it only wants to 'take take take' and make more money. More profit. And they are not managed with rules to really be sustainable.

Same for this company, if we would get people to work in the shop, we have to be careful that they have the same values as we have. That is difficult. Ideology of a company can get lost.

Small company can close the cycle, by being local. Core of the company should be organic.

## Service 6

Formal interview Coffeebar Oteiza

Interviewee: Service 6 (A)

Function: Co-owner of Oteiza

Interviewer: Paulien Janssen (P)

Place: Coffeebar Oteiza

Date: 15:00 17-03-2022

P. Thank you for having this interview with me.

A. Yes ofcourse, thank you!

P. Why did you start this coffeebar?

A. I finished my work in another coffee shop, café Lisboa, most famous in Granada. It was closed, because the rent is so expensive and because of covid we had half of the tourist. And you can't live if the people just

take 1 coffee for take away, you cant live from this. You need to pay rent and your partners and the coffee. I have the contact with the manager of that coffeeshop and he said I will open a new coffee shop. Would you want to be my partner? And yes, ofcourse, I think it is a great time for a new start. We are going to be a big covid shop, around spain.

P. Oh really, you want to go to other cities as well?

A. Yes, within 5-6 years we will have coffeeshps around spain.

P. Why do you want that?

A. We first prefer to open more shops around here in Granada, than afterwards open in andalucia and then to spain. Maybe first to Barcelona, or bilbao. Have you been?

P. Yes, it is beautiful.

A. Yes but there diversion in coffee is not so big. They have restaurants with michelan stars, but they don't have that much variety with coffee.

P. Ah so you open a new market?

A. Yes. Maybe. This is one point to make other places more open for coffee.

P. How do you experience the openness of people here towards good coffee?

A. We started 7 years ago. Roasting specialty coffee and roast it. Now we have from brasil, you can see here on the package of the coffee where it is from: this is from brasil, but we also have costa-rica, handuras. Everything you have to know is on the package. This is the village of where it is bread, this is the coffee bean that is used. This is the altitude of the mountain. It says if it is washed or natural coffee. Here look at the difference: washed once are more white.

P. is there a reason you are using these bones?

A. These are good quality bones, but we have different variants. For example, we have also monoregion or multiple region.

P. other places sometimes use mixed coffee, is there reason you do this?

A. well yeah the mixed is for the flavor. So for example you have the brasil one, with different flavor, caramel and chocolate. Is more plane. But if you mix with other, than you have a more vivid flavor. DO not have to use milk, just with water of espresso. I prefer the plane coffee from brasil, you have the acidity, the honey on your tongue. It is natural. More citric coffee. But when you have natural coffee it is sweeter. Because coffee is berry, so it is of essence it is sweet.

P. When you started this shop.

A. This shop we started 2 years ago, but the brand is 3 years.

P. What where the difficulties that you faced to open the shop?

A. In spain, all that you can imagen.

P. Tell me.

A. You have, the people in spain, they don't have the habit/the routine to go to breakfast outside and later you can work. The people here drink beer and eat tapas.

P. Is it especially Granada like this?

A. Here we have now, more clients that know we have a good coffee, here and other places that have specialty coffee. When you have time to drink a coffee. Not like starbucks, where you drink and go. Also the different methodes, is it filter or espresso.

P. How long did this take, to convert or sort of have a client base that comes to your shop?

A. we started 5 years ago in the other places. First I was a waiter, and afterwards I could become partner in this new place.

P. what are outside factors that influenc the shop?

A. like covid?

P. Yes, but more like clients or other companies?

A. Other companies yes, other companies have disinformation for people to drink coffee. We know here where the coffee comes from and that it is good. The first time I heard about roasting of coffee beans with sugar, but it is completely burned, but it looks like beautiful black coffee, but it is really bad. You drink just burned sugar. It looks really good, but it is really bad for you.

P. Ah so looks good but not healthy. So what influences it more are other?

A. And as well the habits of other people. Compared to already 5 years ago, the people change. They ask you about where coffee is from now, a bit.

P. who are your clients?

A. For the workers we have good people.

P. Ah yes, but the clients, are they from Granada?

A. this is more a tourist place. We have more like tourist, less Granada people.

P. Where are you from?

A. I am from Granada. But all the people that work here are from all over the world. This is more place for tourist. But we are opening another shop, and that is more for Spanish people. It is more in the centre, it is more Spanish shop. More local things. And the Granada people make there life around the Granada center. Here is just view for the Alhambra, so that is more tourist.

P. And I see for example you have soja milk.

A. yes we have soja, oat, coconut, and almond.

P. And is that for a special reason?

A. It is interesting to have different options for the clients. Now more and more people are vegan or vegetarian, so we need to have different options.

P. Yes, I have been talking to lot of people and some also say they do it from an environmental/sustainability perspective.

A. We don't use, for example, the cow-milk is not from a macrofarmer. It is a small place, with only milk from here from Granada, with only 100 cows: Los Pastoreros.

P. Same as Katharina is using.

A. Oh you now her? My coworker has worked there for a while, you come there for long time now?

P. Just twice. Bit of similar place.

A. Oef I would not say so. We work way better with coffee here. She has better cakes and sweets, but have better coffee.

P. Yes she has different view. You have cake as well, but do you make it yourself or how do you do?

A. We make de cheesecake, the cinnamon role. But we buy the croissants and apple cakes.

P. And where do you buy the ingredients?

A. From the markets and CASH. Here you can buy all the things you need, big supermarket, but it is only for restaurant owners. CASH Alhambra.

P. Because I found that some stores were working on sustainability, I was wondering what your opinion about it is?

A. I think it is the future. No more plastic, we think is the future. But the people of the shop and restaurant they cant change, the government needs to change it. I want to change, but the government says that I don't need to change, because it is insignificant.

P. do you think you don't need to change because it wont make a big change in the world or because it is to expensive?

A. no no, it is no is more expensive. When you buy recycle bags, one day they have the recycled bags and the other day not. I need to use them everyday. So I need to be able to buy them every day. So the government has this rules for big companies to use the recycled plastic bags, but my shop is to small so they don't obligate me to use it. I think is interesting to work with it.

P. So you would be open for it, if the government obligates you?

A. the law is not applicable for me, now only for big companies. But yes if they obligate me, than I change. But now the market is also selling for example plastic bags that are made of potato, not of plastic. But I cannot use it now, because there is not a constant flow/income. We need to make the change with the big and small companies.

P. So the government should make the rules that obligate all?

A. Yes.

#### Consumer 1.

Interviewee: Consumer (R)

Origin: Granada

Job: Solar panel consultancy

Interviewer: Paulien Janssen (P)

Date: 08-06-2022 09:00AM

P. Can you give a description about yourself?

Ramon, 29 years old, I like sport, traveling and having fun. I feel committed to the world and the planet. For example, at this time I a car alone, and my other colleague is also driving his car alone. This time we couldn't share car, I do not like that. It was for reasons that he has to return home earlier. But I would like to share my car, if possible.

And my job is consultancy for solar panels.

P. What do you understand for sustainability as a consumer?

R. To buy local and to protect the environment. I like to buy all my fruits as local as I can.

P. Where?

R. In my neighborhood.

P. What are the shops in your neighborhood?

R. I buy in mercadona and alcampo. The fruits and meat I prefer to buy in the specific shops. And in summer I usually buy by local people in the village.

P. Why you buy in the village?

R. Because they have the big ass, more taste full tomatos that I ever ate.

P. So taste is better than in mercadona?

R. Yes, I don't buy there because taste is horrible.

P. What you think about mercadona?

R. Good to buy one things not to buy other things. It is just a big shop, you can buy anything but it is not the biggest quality that you can find. I think specific shops you can buy more specific products. And they will be more local, they will not be delivered from holland or far away countries.

P. Do you think it is cheaper at Mercadona?

R. Yes, I do think mercadona is cheaper.

P. But price is not a drive for you to go there?

R. Example: carne picada, meat for spaghetti. In mercadona is 18% meat, water and flour to make it bigger. So you don't buy 100% meat. But when you buy it in local shop, you are sure that it is 100% meat. Big supermarkets you must be reading all the etikettes.

P. Do you look at organic food?

R. Not that much, I think it is expensive. But in the village, I buy organic food, but it is not called organic food. But they don't call it, because it is normal there. I don't really look at organic or eco for stuff like that, because in the village I am sure it is organic.

P. What is your drive to go to specific restaurants?

R. Food is very important when I choose the place. If I want to eat fish, I look for a place where fish is very good, not for a meat place where they also sell fish. It is very important the food, always.

P. So your main drive to eat somewhere is that the food is good?

R. Yeah.

R. What would be your main drive?

P. Food, but also the ambience.

R. Yes true, place must look nice.

P. What are your difficulties when you try to incorporate sustainability in you consumer behavior?

R. For local markets, the schedule, the time where they open and close. The fish shops for example, they are only open in the mornings. I cannot go in to the shop in the morning, so I cannot buy there, so I have to buy it in the big shops.

Usually people buy in the big places, I think because of the time.

You can go to Mercadona, and you buy everything, it is less quality but you need less time. To buy local you need more time to go to the shops. And you need to be flexible to be able to go to all the shops with the different times.

P. How do you see the farming and whole sale market sectors?

R. I think that they produce a lot of meat and it is a very powerful sector. I think that the farmers are thinking about . I think we should not eat that quantity of meat. I think we should reduce the quantity of meat that we eat to reduce bad impact on the diet and environment. At least, I try to reduce amount of meat that I eat.

P. what do you think about working in the farming sector?

R. I think it is beautiful work. I think it is beautiful to take of animals and I think I would like this work. My grandpa used to have industrial farming. He had cows, after that pigs and lamb. When I was child, I was with the lambs and the pigs. He tried to have chickens, but we had a accident in the factor and then he didn't have chickens.

P. how do you see organic products?

R. I think, it is more a marketing than other things in the supermarket. It is different when you buy in a village, when you buy local. Than you are sure it is organic. But when in the supermarket it is organic with the certificate of organic, it is good and it is marketing. Both.

## Consumer 2.

Interviewee: Consumer 2, 55 years old (Ma)

Interviewer: Paulien (P) and Matt (M)

Date: 08-06-2022, 18:14 AM

P. What do you think about sustainability when you buy food?

Ma. I try to buy natural products, precious products.

P. where do you buy?

Ma. At Mercadona I buy my usual things. But I buy my fresh food in the fish-shops or fruiterias. Those thing I don't want to buy in supermarket.

P. Why not?

Ma. Because the quality is super bad.

P. why do you do buy you food in the other shops?

Ma. Because they do have a good quality. The pescaderia has better quality. I don't like the supermarket to buy these things. I want thing fresh.

M. what do you do buy in the supermarket?

Ma. I buy rice, milk, hygiene stuff.

P. Do you think Mercadona is cheaper?

Ma. For some things yes, for others no.

P. For what things?

Ma. There are also thing that are much more expensive. But for example the 'blanco marca' from mercadona is cheap in general. For cleaning stuff, arinas, for olive oil. But there are also things that are cheaper in other places.

P. and for fish, fruit, mercadona is not cheaper?

Ma. No. it could be cheaper, but with a worse quality. But for the same price. I don't buy fish there, sometimes it is cheaper but the quality is so bad. So I prefer other places to buy.

P. And in your life, what do you do for sustainability in your life?

Ma. I recycle for example, carton and papel. I separate them. But I don't worry about it to much.

M. do you care about for example the lights in your house, and that stuff?

Ma. Uhm well no I don't really do stuff with that. I don't really know.

P. what are your sustainability difficulties in buying food?

Ma. Everything is in plastic. So when I buy some food, it is in plastic and than they also ask if I want another plastic bag around it. It is so much plastic. I prefer to use my own bag and put my food in there.

M. Do you throw a lot of food away?

Ma. No I don't throw a lot of food away.

Sometimes when I clean the fridge I find some tomatos that I forgot about. But that's it I guess.

M. What do you prefer to buy in Alcampo over mercadona?

Ma. Alcampo I buy catfood, is very cheap and good quality, good housemarco. And I buy vino in Alcampo. The quality is better and it is cheaper. And cazpacho, I buy there.

M. but you can also buy cazpacho in the fruiterias?

Ma. That is true, but the price is better in Alcampo and they are as well good. They are also natural.

M. you buy big stuff every weekend, but during the week do you buy stuff?

Ma. Yes I buy meat and fruits and vegetables.

M. every day?

Ma. No. I buy bacalao and camprones. But I buy that in the pescaderia.

Consumer 3.

Interviewee: Consumer 3 (J)

Origin: Hongarean

Job: Student

Interviewer: Paulien (P)

Date: 14-06-2022, 22:00AM

P. Can you give a description about yourself?

I am 21 years old, Erasmus student from Hungary. In Hungary I used to do a lot of sports. I won medals in the national championship.

P. Where do you buy your food?

J. It depends what food?

P. Fruits and vegetables?

J. at the eco-tienda here nearby.

P. Why?

J. because it is 10 meters from our home and mercadona is 20 minute walk, so I am too lazy to go there.

P. Oke and more?

J. Also in another fruiteria here in albaicin and in coviran down at calle Elvira.

P. so shops that are closed to you?

J. Yes probably.

P. and why not elemen?

J. It is expensive and I don't prefer big multinational. I prefer to support the small shops.

P. and the rest of the food?

J. Other stuff I buy in carrefour.

P. What do you look at when you buy food?

J. trying to plan what I cook, so I just buy the stuff that I need for it. Of course price. I am also trying to buy like, the more environmental choice. So if I can I buy the bigger portion at once, so I don't buy small portions and than they don't have to use more packaging material. And if it is in sale. Also sometimes where it is made. I wont watermelon or olive oil that is not from here. But only for these special foods

P. What do you understand for sustainability as a consumer?

J. as in a shop?

P. yes.

J. trying to buy things that are not wrapped into how many layers of packaging and plastic. It is ridiculous. Like some teas. And buy local. Not import the things that you can just buy here. Not import the tomato for example. And trying to eat the food that they grow here and not the imported things. Because then they need to take a ship, and that has chemicals. So I also try to eat seasonal food. I don't eat strawberry in winter.

P. Why don't you eat strawberries in winter?

J. My parents taught me when I was young that I could not eat them in winter, because they would not grow here. So they should be imported and that is not natural. They always said: wait the season of it. When you can buy the local one.

P. What is the biggest difficulty for you to be sustainable?

J. Maybe the price. Maybe I am dum, but maybe the good quality companies for example sell there stuff in glass, while the cheap brand sells it in plastic. Now I find it difficult to choose the more expensive one.

P. What do you look for when you go to a restaurant?

J. I never go.

P. Why?

J. it is expensive.

P. And tapas bar?

J. Good location, nice atmosphere, good quality and price.

P. What is your main drive to eat somewhere?

J. price

P. What do you do for sustainability?

J. I have flowers in my room. Recycling – carton, plastic and glass. I don't buy plastic drinking bottles, I have my own. I try to use public transport, instead of flying. I am not using chemicals, body lotion, shampoo, cosmetics that are natural.

P. How do you see organic products?

J. Expensive. They are way more expensive than they should be. They are so overpriced. Sometimes for me it is equal to food that I can find in a normal fruiteria. But just because they use the organic label they can make the price higher. While maybe another farmer that sells to a fruiteria also not uses chemicals but they don't use the label so it is cheaper in price.

P. What do you think of the appearance of bio-food?

J. depends. I think bio thinks are imported from other countries are in good conditions. But the organic food that is produced here in Spain doesn't look that good, in the ecostores.

P. What do you think about Mercadona

J. Multinational company. For us (in Albaicin), the location is not good. So we have to walk 20 minutes, so that is not that good.

P. Do you think mercadona is cheaper?

J. Yes. Than carrefour yes. I like mercadona also more than carrefour, but because of the location I don't go often. Before I went twice a month to mercadona, and both stuff for two weeks. So they are good for big shopping.

P. and why?

J. because of the price. I like the mercadona brand food more than the carrefour brand. Like their own brand.

Extra interviews:

Interview 1.

Expert Interview: Prof. Francisco Javier Montoro Rios (F)

Function: department of Marketing, behavior researcher, University of Granada.

Interviewer: Paulien Janssen (P)

Date: 12:00 09-06-2022

P. How do people in Granada/spain see sustainability?

F. I have some knowledge consumer behavior on Spain. Our research is national level. But I do

From my research, people are concerned about the environmental situation, more climate change. Not so much with regard to loss of natural land or loss of biodiversity. But I think the main problem they see is climate change and the warming of the world. They are concerned of this, depending on the age. Personal characteristics on the level of consciousness is the age. Young people more concerned than old people. But when they go to the market to buy something, the environmental issue is different. People rather want price, quality, design of the product more than the organic. List that consumer take into account before buying, and environment is at last part.

In terms of market share of the environmental products, Spain is very low. Compared to northern countries. The consumers are more prone to buy regarding the environmental performance of the product.

They are above the environmental performance where the consumer decides if it buys something.

Even if the young people, our research suggest, they evaluate higher the price of the product or the quality of the product than the environmental performance of the product.

You are working on food, for example with organic food, our research suggest that the consumer (the environmental impact of the product is important, but other things are more important. The taste of the apple, tomato, and the health consequences of consuming non-organic products.

A drive would be to buy organic products, is because it is healthier.

When they go to market, looking for organic products, for example tomatoes, when they go to market, they decide to buy the tomato, they buy it because they think it taste better, and is better for our health and main while the environmental benefits are less important.

First quality and health.

Younger once look more to organic than old once. But problem is that young people have less money to buy the organic food. Some young people want to buy Environmental or organic products, but they don't have the money.

P. Where do they buy there food?

F. Most people, depending on several things, where they live → people who live out of the city (sub-urbs) or village, they usually go to the bigger markets/carrefour. They are located out of the city. They travel with car and they buy food for the whole week or two weeks. This has a bad consequence regarding the sustainability. They usually less fresh food, like vegetables, because they need to buy something that can be preserved for 1 or 2 weeks. Ultra vreezer products, elaborated food.

And the people who live in the city, usually buy in proximity shops. Or groceries. And in the supermarket, (coviran, mercadona), they are close in the city. There consumers buy more fresh products. But the organic

food, in Granada, is not offered in these supermarkets. So the people who want to buy organic food, must go to a specialty shop. Which usually is more expensive. That's why the people in Granada, they are can't find the product in a convenient way. With competitive price. So this is a barrier. Even in the case that people want to buy organic food, it is hard for them, because of these barriers.

P. What do people in Spain see as sustainability? What kind of behavior do they do now?

F. Behavior of Spanish people in general, compared with other countries, Netherlands or Denmark, I think that the people, if I am honest. It is not very implicated with the issue, for example in terms of transportation, most of the people that use the car is because it is cheaper than own car. Not because they are orientated to use car because it is better for environment.

There are several behaviors that are more developed in Spain: recycling is usual in Spain, we recycle a lot. But in terms of transportation, we are not very prone to change our way in order to protect our environment. We need more information about the environment to change our behavior.

I think the actual increase in gas price, is doing in more terms of environment than the human behavior. Because this is something they feel right away.

I think intervention of the government, to increase price of the petrol, that is a good thing. I am rooting for that, increase tax on gas.

In terms of buying things: new freezer, that is more sustainable. People in Spain don't think not in environmental performance of the product before they buy a product. It is the last consideration before they decide to buy something.

My research gave some concerning results.

Decision of the people is the most important thing to protect the environment. More knowledge on how to make perception changes.

P. Roadblocks to sustainability?

Our research is related with the risk, perception of the threat, the perception of the environment can have on people's life, on loved ones. The thing is that, we found that in Spain, the people don't think the environment is a threat for their lives. It is a big issue. But they think that it is not a risk for the Spanish people. They don't have a real perception of the risk. They think it is something far from here, out of this country. This is a ground perception. Because we have more and more heat every summer. Because the people in general, don't perceive this as a threat. They don't behave in the right way. What I think that we should do/ or companies or government should do. Is drive the level of fear about the consequences of the environmental threats.

Like when you smoke and you buy a case of cigarettes. You see a phrase or text saying that you are going to die. You will have cancer if you smoke. I am not sure if this kind of warning are effective or not, but I think the best way to induce the behavior changes of the people, is trying to increase the fear of the future of the world if we don't do anything to protect the environment. Like communication tools. Marketing knows how to do that, we are very good at selling Coca-Cola. We should be very good at communicating the idea that the world becomes a bad way to life and we should change the situation.

Marketing knows how to change the behavior of the people, why not use the marketing to change the behavior of the people in order to have a better world.

What do they understand is sustainability in the food chain?

What do they do for sustainability?

## Interview 2.

Interview: Calidad officer MercaGranada

Formal interview MercaGranada

Interviewee: MercaGranada (M)

Function: Calidad officer

Interviewers: Paulien Janssen (P) and Matt Nieman (N)

Place: Office Monica in MercaGranada

Date: 10:00 18-03-2022

Waste: worked with university to make waste into compost. And give food that is left over to voedselbank.

N. [explains what biomimicry Granada is]. The first question is what is the sector and function of MercaGranada?

M. Let me explain what MercaGranada does. The company MercaGranada means: renting spaces to whole sale sellers. People know us from the fruits, and think we distribute them, but that is not true. We just facilitate the building space, we don't sell the fruits. We have different warehouses as you could have seen at the entrance. There are 2 warehouses that sell fruits for wholesales. Besides we have fruiteries that come here and buy the fruits and vegetables that are sold in the warehouses. These will end up in the shops in your area/neighbourhood. We also have fish that comes from the ships. A fish seller comes to here and buys the fish for in his shops. This is MercaGranada, we are the only ones that rent these places.

N. So everything is from the warehouses?

M. Si.

N. Vale.

M. This is our work, so we don't have/sell any products ourselves. As services we provide control service, cleaning service, providing a community, providing ships, and security 24h. 5:10 – 5:25 → no idea.

N. So you have developed a place where shops can buy there stuff. For the smaller shops that sell less products, that can buy here in bigger portions and sell them in smaller portions.

M. Yes. Besides that, we try to do what we can do to help. We have an annual report on the website, including all topics and sustainability as well. I am sure that we made this very rational, and our strategical plans are reviewed every 3 years. All plans are used during the year. Within the centrum-year we define strategical plans that have been defined over the year. We work on things such as, digitalization to reduce use of paper, recycle of waste, recycle of carton and plastic. We installed a recycling fabric and have a water recycle fabric which is just new. This is also all mentioned in the reports on our website to stay transparent to the wants that work for us and with us.

N. Yes.

M. People sometimes think in my function that I am responsible for the quality of the apple, but I am not, I am responsible for the quality of our company.

N. We, and Paulien, did not suppose anything before coming here.

M. This is the information you need, to know what you can find in there.

N. She studies the value chain the food production (Ella estas estudiando la cadena de valores en la produccion alimento). So, she will look at where the food comes from until it is set in the shops or restaurants. 7:30.

M. Oke but what I want to say is that we also have a colegio and we help children in hospitals.

N. Yes but we are looking for things that are valuable in the food chain

M. Yes but I wanted to mention it because it is important a as a producer to mention this as well.

P. But MercaGranada has a lot of things involving around sustainability, what is the reason that MercaGranada thinks this is important?

N. What is the drive?

M. Well, there is a bit of a law driven obligation (un obligation legal), a bit because there is a need for it, *responsabilidad realmente para todo* (really responsibility for all of us). Lets start with the topic of waste. We can make compost with organic waste. This is initiated a long time ago. We have a collaboration with a collegio, with these children, to work together for a healthy planet. We support sports by being involved in the marathon of Granada. We are involved with projects that support the career of woman, we work together with for example 'carera de mujer'. Other collaboration is with the fruits and vegetables, platanos [9:44 ? something about water]. Our team from mercaGranada is also involved in de importance of sports. These are some varying activities that we have on the topic of waste. As you can read here we have a fabric to process waste, and we make biomass energie with the leftover organic waste. We have a collaboration with a university, where we give for free our organic waste products and they make it into compost.

M. This is happening now for a couple of years.

N. I am looking at what you describe to do and it is a lot of different things.

M. MercaGranada is a public company.

N. Is that why you have to be transparent as well?

M. Ofcourse. To prepare on our activities we ..[11:20]. If you have more questions, ask me in the mean time.

P. In general, what are the biggest challenges MercaGranada is facing?

N. So not only about sustainability and not just the last 2 years, but before that as well. Recurrent problems.

M. We have some problem with separation of waste, because we cannot obligate the majority of wholesales to separate their waste. And separate it WELL, this is not always clear for others. [12:14] . this is a important problem. [12:14-12:46]?

N. Is there a lot of moving from wholesales to other places/buildings?

M. No, mainly in the factories here, the fathers are working with their children and the children take over. Or two brothers start the business. So normally they stay here. Almost always does the factory serve the entire generation. Only in the fish sector there is a bit of moving around, because there is a lot of demand from the harbor.

N. Porque?

M. Because they can earn more money there.

N. And for example with oekranie right now, do they pull the prices up, or don't they have an effect of it because everything here is local from spain?

M. si

P. It is possible that it is more difficult for them.

M. 13:30-13:51

N. And the welfare?

M. The welfare is a problem because 13:50-14:44

N. Y pero las mayoristas estan tenindo problemas mas real de aliemanto? 14:44-14:59

M. No se,

M. Negocio que mueve mucho dinero entonces

N. se van notando mucho la disponibilidad de alimentos y por ejemplo ahora mismo lo de Ucrania y el aceite se nota mucho por los precios las ventas y tal bueno aqui si no vendes nada aceite no. aqui hay solo product mas..

M. si es casi todo

P. si pero es mas difficile no para las empresasas?

M. realmente eso te lo podría decir el director comercial el problema que lo que están con la tema por la noche.

N. A bueno, pero la welfare?

M. si la welfare era una problema que son otra porque son autonomo. la grande lo grande transportista que son empresarios eso está muy bien trabajando. y nosotros bueno en principio le afectaron mayoristas pero vamos a ir mayoristas la mercancía lo de fruta y eso se encargaron de las cámaras para comer son las neveras que tienen los frigoríficos. y cargaron todo lo que pero es minorista no tiene problema. pero las minoristas no tiene problema, aquí lo que no pueda entrar los piquetes que estaban fuera los primeros días no podían entrar el camión grande, para dar la mercancía al mayorista. Pero la minorista no no tiene ningún problema en entrar ni nada. la policía más si hubiera algún problema lo he dejado porque hay que hacer la ciudad.

N. pero las minoristas estan tan lista problemas para entrar aliemento?

M. Yo no se. ya te digo voy a preguntar al comercial pero y tiene influencia influir Información pero vamos estamos cenando y está mejor.

P. que son los factores externos lo que tiene influencia a mercagranada?

N. Factores externos que pueden influir por ejemplo una huelga hay más factores externos se puede decir que mercagranada

M. consejo de administracion. el presidente de consigo y calidad nacionalidad. El que sea, entonces pues cada vez que hay un cambio de gobierno. No porque hay algún problema con algún signo político que sea de izquierda a derecha no. El problema es nosotras la hora de organizarnos que conozca como en Mercagranada y que conozca cómo funciona Mercagranada. Entonces esos periodos porque nosotros os empresa pública tenemos todo hacerlo publico las citaciones. Y yo no puedo comprar mañana, no lo sé, comprar el hielo sin pidiendo tres precios. No yo iba a hacer un concurso. Y todo eso que se tiene que publicar en el plazo que la Plataforma de Contratación del Estado igual que nuestra web. Todo ese proceso pasa por aprobación de una Priego en el Consejo de Administración y de la ubicación. Porque el órgano que adjudica es el Consejo de Administración. Entonces ya hay cambio político, cambio político, porque hay una lecciones. No tiene que ver nada raro. Simplemente los periodos en que no podemos celebrar consejo porque no se ha nombrado entre uno y otro estamos en un parón entonces nos retrasa todo nuestro trabajo. Es el problema no es otro no es que haya problema para neustros tiempo. Ppavimentar y tiene que hacerse en verano que cuando no llueve, pueden no complica nuestro diaria. Eso es una afecta también. Ahora bueno por la herradura (la guerra) hay un problema tambien. Tenemos muchos inflacción. Cuando nos haremos un préstamos al banco para hacer una reforma de una nave policia por ejemplo lo que sea todo claro.

N. Hay mucho reformas?

M. Claro, no son una empresa antigua, pero son muy vieja. Hay mantenimiento preventivo y mantenimiento correctivo. Hay un equipo de mantenimiento propio pero claro de casa reforma. No estamos antigua. Porque necessita en esta parte, está arreglado que le pidió lo habéis visto porque era muy viejo y la primera planta está algo arreglada y poco a poco van a arreglando cosas. Ahora un parte de bano.

N. Si poco a poco

M. Se puede ir haciendo igual.

P. Como describir sostenibilidad en este sector?

M. Sinceramente no lo sé.

N. porque nosotros teneis actividades de sostenibilidad de merca granada. Pero tant del mayorista como de los clientes de los minoristas y por toda la cadena no conocemos. A la yo voy a está todavía

....

M. La mayorista, la mayoristas por ejemplo producto prerefiero que sa todovia para consumo, pero qué es ya llevaba tía la mejor tiene una pequeña maca o lo que sea lo dona Banco de Alimentos sabes lo que el Banco de Alimentos?

N. si.

M. Asociación sin ánimo de lucro que se dedica a repartir comida entre los necesitados el resumen. Y entonces el mayorista cuando tiene profundos producto o diferente de producto dona a Banco de Alimentos.

N. si y eso es tema de yo me imagino que no estás pensando extendidas sino de carácter social.

M. En el caractr social de naciosacion, un poco y los productos tienen un segundo oportunidad en mercagranada. por ejemplo. lo tiene salido un modulo locale gratuitamente para sear este trabajo. Entra dentro un poco de la cadena no me resisto a sostenibilidad directa, pero indirecta un poco.

P. En el sitio de web de MrcaGranada, se dicen que se quieren trabajar a la desarrollo de sostenibilidad a nivel de economico, social y medioambiental. pero, como es possible para desorollo 3 temas en una vez.

N. Pero poco a poco además con la mascarilla difícil muy difícil.

M. Mercagranada es un empresa publica: es el 49 % de Mercagranada y el 51% el Ayuntamiento vale. el socio depende de la SEPI del Ministerio agricultura empresa pública en mercados centrales mercado desea. Y es nuestro socio tecnológico, mas o menos. Solo un 49%. Este es un resumen de actividades de 2021. La contribution de la REDs merca, hay 24 merca en espagna, MercaCordova, MrcaGranada, MercaMadrid y merca.... Somos las REDs merca. Y no preparamo anualmente un resume de cooperivacion de sostenibilidad y commrcial de aliemento fresco. Estas todo.

Las objetivo, si quieren copia o telemando a tu correo?

P. Si yo quiero, gracias.

M. Esto es, todos las merca granada, realmente.

N. Que tipo de actividades para reduccion de carbon son aqui?

M. nos vemos. Aqui: Te lo mando también si quieres porque esto de público pero no tiene más que está todo el botón de transparencia de nuestra página web pero yo te lo mando por correo vale. Entonces relacionamos las metas de lado de 5 cada uno de los ítems que tiene con lo que hace Mercagranada vale y la valoración económica.

N. las planes strategico son un parte de valores no?

M. Vale, nosotros en septiembre empezamos a valorar el Comité de Dirección. Comité de dirección es el director gerente y solamente aquí tres área dirección: área técnica, el área comercial y el área financiera. Y luego un estás bueno si queréis nos vemos en el organigrama. He visto?

N. yo no.

P. yo si.

M. Vale, es para que os situeis bien en qué cadena echa memorias y todo en el botón de transparencia está toda la información. Relacionista web. El director general, dirección técnica, bueno y de servicio dirección comercial y dirección administración. Y finanzas hay que hay en esta que el área recursos humanos asesoría que depende directamente del gerente. Y yo. El Comité de Dirección Señor y estos tres. la dirección es el Comité dirección el Comité dirección una reunión mínimo cade del mes. Y entonces en esa reunión en el mes de septiembre organizamos la estrategia. Con un modelo de calidad.

P. Y normalmente hay ayuda de profesionales de sostenibilidad.

M. Si y no. Por ejemplo ayuda con del compost. Y el otro día que una reunión con una empresa, no me acuerdo quien, que quería también ayudar en la cadena con el tema de los plásticos. No sé lo que hacía exactamente, bueno, porque eso de fue el área técnica. Es el otro modelo nosotros definimos estrategia.

Estoy aquí empezado aquí estoy ha empezado lo que el trabajo diario planes entonces photoplantia compartía, planta una voltaica de autoconsumo, veulva de carbon. es todo en el rapporte.

Volver de carbon esta aqui, tenemos stickers of other companies that praised us for our carbon reduction por ejemplo.

M. mi colleague wants to tell more about carbon but she is sick with covid at home. 29.43

Collebaration con banco de aliemento. Si duna producto y nosotros donamos 4 module polivalencia y una nave tema de hambre que lo mismo. Ni nada de eso vale con el programa educativo de conoce los alimentos transparencia bueno lo de siempre.

que no haya transparencia y publicación de la intervención Inma la del tema del producto, y los precios de productos. Esto es caja también aquí en salud control sanitario.

N. Fotovoltaica?

M. Fotovoltaica si hay algo.

P. Crees que MercaGranada es mejor en trabajar con sostenibilidad que otras empresas?

M. Hay muchas cosas aqui. por ejemplo el tema reciclaje hay mucho, aquí hemos sido pionero en mucha cosa ella te digo. Y en temas de reciclaje somos los primeros que pusimos ya todos los contenedores. Que tenemos ya te digo que sabemos es pionero en varias luego abuelo el tema de los consumos de electricidad y de agua. Ganamos un premio en el programa que tenemos nosotros de trabajo de gestión de la calidad el programa de internacional. Y este año nos dieron un atrás tricidad las cámaras refrigeradoras enviar un sistema de no sé qué no sé cuánto de los relés de ti cuando aparato de aire también debajo → it used to be super old.

M. porque es muy antigua.

No hay aqua para consumo. hay instalar un planta de gas alli, autoconsumo..

collaboration 'to good to go'.

N. trabajéis mucho con mayoristas en esta cosas o esta un cosa solo por MercaGranada?

M. Eso es solo MercaGranada. La collaboration necisitamos para sobrevivieron.

N. pero las mayoristas no puede... mejor no [35:16]

M. Estaba un otra companga de consencion, y perdisia sobre la RED. la tema las echos, formentar valoresaccion. el registro, bueno.

N. si si, esta cosas son en un forma un resecte?

M. si si.

N. Bien para intender este cosas.

P. una pregunta mas, crees que sostenibilidad es lucrativo para mercagranada?

M. No.

P. no para imago?

M. No. no.

N. hay mayoristas de ecologico?

M. Hay puntos de ecologico aqui, pero no son mucho. Hay una zona para productos ecologico, pero son poco. luego pensando intentar con mayorista hay proyectos, por ejemplo, reduccion de carbonos, drones para reparte este cosa. no se pudo preguntar, por que esta problema es. drono podria. tampoco permittien en granada para fly en este zona.

### Interview 3.

Expert interview Consumer behavior

Interview Behavior Consumer Spain

Interviewee: Expert interview Nuria (N)

Interviewer: Paulien

Date: 11-05-2022 11:00

P. Is it often difficult to implement new things in Granada?

N. Yes, also because the regional government changes every 4 years. Therefore, a progressive government can implement something and than it could be reversed a couple years later.

P. What do you think is the missing link in environmental behavior in Granada?

N. People in Granada often don't know what you can do in terms of implementing sustainability in their lives. Therefor, you should give them little tools, little guides to help them make an effort in reducing their footprint. Step by step they could make a small change.

P. Did you research something with the governmental ruling and the perception of the people?

N. I saw a mismatch in rules from the government and the perception on what is happening in the country by the people it self. They just have to understand where the money comes from. My family are farmers. If they don't know that the money comes from the government or they don't agree with the political party, they feel separated. Info can be biased, fake news. Should educate what the purpose of money is, where it comes from and where it is for? Education of farmers would be option for change.

P. Could you tell me something about the general granadian?

N. In general they are not very open minded. Especially when you compare it to other citizens of cities in Andalusia. They are used to always have the same people around, and are not very good in mixing or opening up. Not open for change and that is seen in their behavior.

P. Why?

N. Have you heard about malafoide granadians? They are just not easy going, it could change. Once there is more influences from outside.

P. And how do you connect this behavior to environment?

N. This has an effect on their environmental behavior. They are stuck in the way that they grew up with, which is mainly not really environmental friendly. For example. My parents never recycled. I went abroad and learned that the entire world recycles. So I thought them. But it took me a lot of effort to convince them. And they are just stuck in their way that one bin is enough, they don't want to make more space for it.

Younger generation is different. They are more open.

Other thing I learned abroad, is that they for example take their food home when they have leftovers. This doesnot happen in granada, so there is a lot of foodwaste. But like taking food home here, looks as if you are poor.

## Appendix 4. Airtable outcomes

A Name	A Company Name	A Description Interviewee	Sector	Upfront sustainability
Producer 1/Processor 2	Aceite Quaryat	Man, co-owner, 35, Spanish	Processor Producer	Ecological
Producer 2	OPP-85	Woman, Granadean	Producer	No
Producer 3	Tomato farm	Woman, 60, Spanish	Producer	No
Producer 4 (consultant)	Volterra	Man, co-founder, +/-40, Dutch, living in spain for 20 years.	Consultancy Processor	Ecological
Processor 1	Rom Montero	Man, +/- 50, Spanish	Processor	No
Distributor 1	Carmelo Frutas	Man, owner, 34, Spanish	Distributor/Whole Sales Market	No
Distributor 2	Guerrero Granada	Man, owner, 50, Spanish	Distributor/Whole Sales Market	No
Service 1	Tienda la Talega	Woman, co-owner, 40, Spanish	Supermarket	Ecological
Service 2	Col&Flower	Woman, co-owner, 35, Chile	Supermarket	Ecological
Service 3	I need coffee	Man, co-owner, 38, Italian	Restaurant/Coffee bar	No
Service 4	Stories	Woman, owner, +/-35, Russian	Restaurant/Coffee bar	No
Service 5	Las tiendas de los unicornios	Man, co-owner, ~30, Spanish	Restaurant/Coffee bar	Vegan Ecological
Service 6	Oteiza	Man, co-owner, 25, Spanish (Granada)	Restaurant/Coffee bar	No
Consumer 1	Solar panel consultancy	Man, 29, Granadean,	Consumer	No
Consumer 2	Woman	Woman, 55, Granadean	Consumer	No
Consumer 3	Student	Woman, 21, Hungarean, student	Consumer	No
Rental	MercaGranada	Woman, calidad officer, 40, Spanish	Storage Renter	No

A Name	Recycle	Reduce	Reuse
Producer 1/Processor 2	Water, Material for boxes	Waste, Pollution, Water use, Energy, Contamination, Chemicals	Water, Biomass machine
Producer 2		Energy	
Producer 3	Material for boxes, Glass, Plastic	Energy, Chemicals, Pollution	
Producer 4 (consultant)			
Processor 1	Glass		
Distributor 1	Material for boxes, Organic, Plastic, Carton	Waste	Plastic
Distributor 2			
Service 1	Material for shop, Material for boxes	Pollution, Waste, Plastic, Water use	Plastic, Water, Energy
Service 2	Carton, Plastic	Plastic	
Service 3		Pollution, Waste	
Service 4		Pollution	
Service 5	Material for shop, Material for cups	Waste, Insulation	Energy
Service 6	Material for cups		
Consumer 1		Pollution	
Consumer 2	Carton, Plastic	Waste, Plastic	
Consumer 3	Plastic, Carton, Glass	Waste, Plastic, Packaging	Plastic
Rental	Material for boxes, Organic, Plastic, Carton	Energy, Waste	waste, Energy

A Name	Other sustainable strategies
Producer 1/Processor 2	Ecological, No chemical fertilizers, No chemical insecticides, Sustainable packaging, Local, Education
Producer 2	Healthy population
Producer 3	
Producer 4 (consultant)	Education, No chemical fertilizers, Ecological, No chemical insecticides, Sustainable packaging
Processor 1	
Distributor 1	Education, Local
Distributor 2	
Service 1	Ecological, No plastic, Local, Education
Service 2	Local, No plastic, Sustainable packaging
Service 3	Local, Education
Service 4	Local, No plastic
Service 5	Local, No plastic, Vegan/no animal harm, Fairtrade, Ecological
Service 6	
Consumer 1	Local
Consumer 2	Local
Consumer 3	Local, in-Season
Rental	Education, SDG goals

A Name	Outside influences	Reason for sustainability awareness
Producer 1/Processor 2		Awareness through life
Producer 2	Government	Awereness through rules of the government
Producer 3		
Producer 4 (consultant)	End-Customers Market Clients	Awareness through life
Processor 1		
Distributor 1	End-Customers Market	No awareness Awereness through rules of the government
Distributor 2	Market End-Customers	No awareness
Service 1		Awareness through life
Service 2		Awareness through life
Service 3	Suppliers	Awareness through shop/employee
Service 4	End-Customers Weather	No awareness
Service 5	End-Customers Market	Awareness through life
Service 6	Government End-Customers	No awareness
Consumer 1	supermarkets	
Consumer 2	supermarkets	
Consumer 3	supermarkets	
Rental	Government	Awereness through rules of the government

A Name	Incentive sustainability	Sustainability challenges
Producer 1/Processor 2	Quality of food Human life Healthy soil	Investing Behavior customer
Producer 2	Obligation by government	Price
Producer 3		
Producer 4 (consultant)	Intrinsic	Market Behavior customer Behavior business owner Government Investing
Processor 1		
Distributor 1	Human life Quality of food	Behavior customer Market
Distributor 2	Not working with sustainability	
Service 1	Intrinsic	Behavior customer
Service 2	Intrinsic	Investing
Service 3	Human health Human life Quality of food Intrinsic	Behavior customer Behavior business owner
Service 4	Esthetica	
Service 5	Intrinsic	Behavior customer
Service 6		Suppliers
Consumer 1		Time Price
Consumer 2		Supermarket
Consumer 3		Price
Rental	Obligation by government Human life	

A Name	Challenges set up business Granada	Sustainability as sellingpoint
Producer 1/Processor 2	Bureaucracy Government Educating clients	Yes
Producer 2		No
Producer 3		
Producer 4 (consultant)	Behavior People	Yes
Processor 1		
Distributor 1	Space restriction	No
Distributor 2	Behavior People	No
Service 1	Taxes	Yes
Service 2		Yes
Service 3	Behavior People Bureaucracy Government	Yes
Service 4		No
Service 5	Bureaucracy Government Taxes	No
Service 6	Behavior People	No
Consumer 1		
Consumer 2		
Consumer 3		
Rental		

A Name	Challenges set up business Granada	Sustainability as sellingpoint	Who are your clients?
Producer 1/Processor 2	Bureaucracy Government Educating clients	Yes	Granadian people Regular customers Forners
Producer 2		No	Granadian people Spanish Restaurants
Producer 3			
Producer 4 (consultant)	Behavior People	Yes	Farmers EU
Processor 1			
Distributor 1	Space restriction	No	Small supermarkets Frutrias Restaurants
Distributor 2	Behavior People	No	Frutrias Small supermarkets
Service 1	Taxes	Yes	Old people Regular customers Art community Ecological community
Service 2		Yes	Regular customers Forners
Service 3	Behavior People Bureaucracy Government	Yes	Erasmus students Tourists Regular customers Granadian people
Service 4		No	Erasmus students Tourists Granadian people
Service 5	Bureaucracy Government Taxes	No	Tourists Erasmus students Young people
Service 6	Behavior People	No	Tourists Forners
Consumer 1			
Consumer 2			
Consumer 3			
Rental			

Appendix 5. Outcomes brainstorm 2.

<b>Education</b> <b>'ugly' organic</b> <b>food</b>	Create an education campaign about how beautiful ugly fruit is	Not ugly, (natural), and why growers select for nutrition and flavor	Rising awareness among customers is key. Start telling about ugly fruit by calling them natural, that will be a 1 <sup>st</sup> step towards a transition. Changing the view of the customer on the product.	Add cooking and health classes in elementary schools which address this issue.	Future trend: restaurants in which you only can eat without eyes and they offer ugly food as a supermarket.
<b>Lobby</b> <b>government</b>	Lobby central government to investigate relationship with the cost of health and eating unhealthy food	Just sugar and ultra-processed foods	Focusing on making manufacturing of the agrifood industry more sustainable (benefit environment and health)	Find the connections KPI in the dates that we are assuming for healthy systems and show it	Replace GDP with and ESG-based metric
<b>Funds</b>	Get EU funds to apply to materiality issues of the sector	Yes, focused on best value	Together with rising awareness and education,	If we could find ourselves (or through EU) and release for free, it would help establish ourselves as experts and start influencing interventions	
<b>Subsidies for</b> <b>'good' not for</b> <b>'bad'</b>	Incentives with money production changes	Incentives especially in the primary sector, subsidies for adapting sustainable practices	Incentives for people who need some to win (processors, distributors)	Stop subsidizing bad practices	What is the definition of bad practices?
<b>Marketing</b> <b>(video)</b> <b>campaign</b>	TV and other video campaigns	Promote existing ones	To change food supply chain raise awareness	Adapt the cultivates to local climate conditions, can	Make sustainability cool! (video)

	focused on climate change		about sustainability and climate change	we grow fruit in Almeria?	campaign from above)
<b>Marketing</b>	Marketing targeting young customers	Help them with culture, can we create cooking course? They need to know how the food is grown.	Comprehensive kids education, incl. Parents.	Like cigarette packages, this is what pesticides in food does. [Could we test this idea]?	
<b>Plastic bag substitution</b>	Removing plastic bags from supermarkets – shifting towards alternatives that are sustainable	Discount for people who use their own bads or tupper	-Caveat- make sure we aren't affecting food waste	Create a cool shopping bas, but make sure it is actually sustainable  For education and to reduce impacts.	Make sure any set is best for transporting food
<b>Reduce food waste</b>	Campaign on preventing and avoiding food waste	More on sale for products that are close to become bad	Subsidize I+D for modern equipment and packaging practices	Promotional campaign about using food in 2 <sup>nd</sup> or 3 <sup>th</sup> meals	Teach people about food and food preparation for both health and conservation
<b>Certificate sust. Food</b>	Laws (labelling, adapt of more sustainable practices)	Create a system for local impacts, laws are very general, and affect a lot of countries.	Incentivize small growers with regenerative practices --> show what is possible	Rewards those growers with support for the labelling certifications	Publish those successful projects
<b>Easy sust. For the people</b>  <b>(think about contibution of fungi and peeps)</b>	Publish (open) report on materiality across food chain	Make it easy for people to know where they can make a difference	Make it clear what changes have biggest 'bang for buck' (impact)	Publishing might not be easiest to gain customers' attention,. An easy media post might do the trick.	We can make 'sciencias ciudadanas' and intergrate the people in the researching
<b>Promote Eco-label (existing or new)</b>	Create eco-label for businesses who comply with	Celebrate + promote those companies who	Advertise that they could join the club	Increase visibility of existing labels and award	Help people understand what the labels

	certain sust. practices	gain the eco-label		current sust companies.	want to tell them
<b>Social media (with famous people) campaign</b>	Social media campaign making actual sustainability trendy	Get famous people to get involved in sustainability campaigns	Find ways to make the facts real	To reach a broader audience local incentives should also be considered	
<b>Social problem/raise awareness impact consumer</b>	Re-think the problem as a social problem, not market problem.	Correct the understanding of the true cost of food. Get food production off of subsidies	Must count all the costs to society	Social responsibility	Raise awareness about the fact that everyone is responsible in the food chain. Customers choices have an impact!
<b>Reduce time investment for organic food purchasing's</b>	Reduce the time invested in organic shop	Organic supermarkets like whole foods – reduce focus on making money	Government subsidies to healthy food	Reduce time, make organic pathways easy and accessible to the costumers. Make sustainable products available to all. This requires a transition in all the stages of the food chain.	
<b>Food and health</b>	Invest money in help for people to be happy buying organic	Show them how it makes them healthy	Demonstrate how healthy food grows	Equate intelligence ad wealth with health and good diet	Clarify the link between food and health

	Percentage
Cereals	2.7
Legumes	0.1
Potatoes	0.5
Industrial cultivates	0.1
Animal food	2.2

Vegetables	48.6
Cut flower and ornamental plants	1.9
Citrus fruits	0.3
Fruits (no citrus)	21
Olives	8
Olive oil	14.2
Wine plants	0.1
Others	0.4
Total	100