Norwegian University of Life Sciences

Master's Thesis 2023 30 ECTS
Faculty of Biosciences

Consumer Food Practices Towards Sustainable Food Systems – The case Study of the Valle dei Laghi Biodistrict, Italy

Maddalena Cirani
Master in Agroecology

Table of Contents

Abstract

The redesign of the global food system is urgent and biodistricts have the potential to lead the trajectory towards sustainable modes of production and consumption. Consumers are unanimously recognised a key role in achieving this goal, making the food practices of consumers in biodistricts particularly relevant. In this master's thesis I investigate the Valle dei Laghi biodistrict in Trentino, Italy, through a case study. A constructivist approach and qualitative research methods underpin the research framework. During two months of fieldwork, I conducted thirty four semi-structured interviews with consumers and two interviews with producers. Direct observation served to triangulate the results. The findings complement the broadly discussed profiles of the *passive consumer* and the *food citizen*, with two additional new categories; the *pragmatic consumer* and the *tradition-oriented consumer*. The *pragmatic consumer* exhibits an understanding of food sustainability but acts opportunistically based on the context. The *tradition-oriented consumer*, although not driven by sustainability concerns, implements highly sustainable practices embedded in tradition and in the social and territorial fabric. Although time availability and affordability of organic food, along with access to land and exposure to marketing, impact on sustainable practices, individual worldviews appear crucial in shaping food choices and practices. Furthermore, different opinions emerge regarding organic and biodynamic agriculture and products. The sometimes inconsistency and ineffectiveness of food policy also surface from participants' practices. The results provide insight into the local reality of a biodistrict and indicate how this could pave the pathway for sustainable food systems through new approaches to sustainability.

Abbreviations

AIAB	Associazione Italiana Agricoltura Biologica (Italian Association of Organic Farming)
CAP	Common Agricultural Policy
CBD	Convention on Biological Diversity
CSA	Community Sustained Agriculture
EU	European Union
FAO	Food and Agriculture Organisation
GHGs	Green House Gasses
IN.N.E.R.	International Network of Ecoregions
IPCC	Intergovernmental Panel on Climate Change
ISTAT	National Institute of Statistics
SDGs	Sustainable Development Goals
SFSs	Sustainable Food Systems
PSN	Piano Strategico Nazionale (Strategic National Plan)
PSR	Piano di Sviluppo Rurale (Rural Development Plan)
TBL	Triple Bottom Line
WHO	World Health Organisation
UN	United Nations
UPF	Ultra-Processed Food

1 Introduction

The global food system has been singled out as, by far, the main cause of biodiversity loss, ecosystems disruption, freshwater consumption, and destabilization of the nitrogen and phosphorus cycles (Rockström et al., 2020, p. 3). It has likewise been identified as one of the major contributors to climate change, health problems, social injustice and conflicts (Arneth et al., 2019; Carolan, 2018; European Commission, 2020, p. 3; HLPE, 2019, 2017; Mbow et al., 2019; Rockström et al., 2020). This compelling evidence, therefore, places the global food system as one of the major hurdles to the attainment of the United Nations (UN) Sustainable Development Goals (SDGs), the Paris Climate Agreement and the Convention on Biological Diversity (CBD) Aichi Conservation targets (FAO, 2022; FAO and WHO, 2019; Mbow et al., 2019). An environmentally safe, socially equitable and healthy planet entails, therefore, the redesign and transformation of the way food is produced and consumed.

While the definition criteria and tools to attain sustainable food systems (SFSs) are contested (Migliorini and Wezel, 2017, p. 2), depending on whether situated in the "agro-industry-oriented discourses" or the "agro-ecology-oriented discourses" (De Cock et al., 2016), consumers are broadly identified as critical to achieving this goal. Transnational organisations emphasise the importance of deepening the "drivers of consumers food choices, and how they are shaped", so as to include all dimensions of sustainability beyond production and the agricultural sector (FAO and WHO, 2019, p. 30). The UN's Food and Agriculture Organisation (FAO) identifies consumer awareness as one of the key triggers to spark the necessary transformative processes in agrifood systems (FAO, 2022, p. 4). It posits that consumers may "actually hold the power to shift demand towards more environmentally and socially responsible, and nutritious food" leading to "deep changes in production systems" (ibid., p. 233). It also highlights that "dietary patterns with better nutritional and environmental outcomes […] have an enormous transformative potential that deliver environmental benefits on a scale not achievable by producers with the introduction of new technologies, including digitalization of agriculture" (ibid., p. 248). In the same line, the Intergovernmental Panel on Climate Change (IPCC) urges the development of policies that prompt consumers to reduce food over-consumption, -loss, and -waste, as a means to counter climate change and increase food security. This would involve improving "food access, utilisation, quality and safety" and promoting "globally equitable diets compatible with lower emissions" (Arneth et al., 2019, pp. 79–80). At the European level, the "Farm to Fork" strategy also advocates for consumers to adopt healthy and sustainable diets to foster sound food production that respects environmental, social and economic parameters in addition to health and ethics (European Commission, 2020). Furthermore, despite the projected increasing share of low- and middle-

income countries under environmental pressure, policy making emphasises that "it is in high-income countries where the greatest dietary changes are needed" (FAO and WHO, 2019, p. 21).

Despite the consensus on the pivotal role of consumers in the trajectory towards sustainable food systems, consumer understanding is not unanimous. Two major contrasting perspectives arise within academia and policy making (Campbell, 2004, p. 342; FAO, 2022, p. 239). One standpoint places the consumer as a passive receiver of retailers and market strategies. The passive consumer is unaware of environmental sustainability and is, therefore, uncapable of triggering a change towards more nutritious and sustainable food habits (FAO, 2022, p. 239). Portrayed at times as an agent "with a weak morality" (de Bakker and Dagevos, 2012, p. 879), this type of consumer is considered unwilling to change behaviour, forcing food policy to resort to "resource-use efficiency, technological innovations, environmental policy, and production structure changes" (ibid., p. 880). This "passive, uncritical, and dependent" consumer can be considered an "industrial eater[s]" (Berry, 1990, p. 151), alienated from the origin of food and its quality. The passive consumer is, therefore, more likely controlled by the global industrialised food system (Campbell, 2004, p. 342). The second perspective sees the consumer as a *food citizen*, and emphasises individual agency to participate in food governance and promote changes through informed choices in food selection (Booth and Coveney, 2015; FAO, 2022, p. 239). Food citizenship, thereby, aims at raising people's awareness in order to favour the transition from "passive consumers to active food citizens" (Booth and Coveney, 2015). The notion of *citizen-consumer* is entrenched in *behaviour change* and the belief that the intertwining of individual consumption and citizenship can lead to enhanced environmental and social sustainability and social change (Barr et al., 2011, p. 1224). The view of an *active consumer* endowed with agency dates back to the historical period when the fight for radical political change entailed individual empowerment and resided in personal ethical or political commitment (Warde, 2016, p. 144). As such, the *food citizen* is innovator and promoter of a more environmentally and socially responsible food supply chain and tends, therefore, to support the alternative food system (Campbell, 2004, p. 342). Nevertheless, the implication of the conception of *food citizen* is twofold. On the one hand, it offers "new opportunities for citizen activism from the international to the local level" (Barr et al., 2011, p. 1225) through rethinking and reshaping the food system upon one's beliefs and values. On the other hand, the notion of consumer choice and power buttresses neo-liberal and New Right policies of "late modernity's 'privatised' society" through, for example, "privatisations of public utilities and services" (ibid.). Similarly, the set of regulatory measures and guidelines developed at national and transnational level to orient consumer behaviour towards sustainable food choices has been linked to governability, and thus the strengthening of the economic system by the generation of profits and the consumption of goods (Dubuisson-Quellier, 2022, p. 8). Against the dichotomy between a passive, indifferent and egoistic consumer versus an activist, responsible and

altruistic citizen, de Bakker and Dagevos argue that consumers conflate all aspects simultaneously, and refer to Dupuis' reflexive consumer as an actor that participates "in the creation of the food system but often without holding strong ideological views" (de Bakker and Dagevos, 2012, pp. 886-887,890). Conversely, rather than agency and decision making in shaping consumer behaviour, theory of practice emphasises the importance of automatic, non-purposive and deliberative actions in consumer food practices (Warde, 2016). Literature has also highlighted categories of consumers based on their values and beliefs. Studies on consumer inclination towards organic food, for example, underlie the importance of awareness, affordability, health, individual values, status symbol and personality in addition to linking organic food to health and social consciousness, ethical concerns, the environment and animal welfare (Rana and Paul, 2019, pp. 167–168). Furthermore, vulnerable consumers, including rural populations, are generally regarded as less prone to consume sustainable food than highly educated and affluent individuals in urban areas with access to alternative food provision (FAO, 2022, p. 248).

Numerous policy interventions have been developed by governments to align with the guidelines of transnational organisations and increase consumer awareness. They include product labelling, information dissemination, communication campaigns, nutrition-, obesity- and school-food education, cooking programmes, nudging strategies, elimination of harmful subsidies, organic production subsidies, certifications, consumption taxes and bans on unhealthy food (FAO, 2022, pp. 240–242; Sedlacko et al., 2013, p. 2). The consumption of organic food is particularly boosted. The near doubling of the European organic food market from 2015 to 2020 (European Commission, 2023, p. 3) seems to reward these policy measures, although the share of organic food sales in the retail food of Denmark and Austria, the world's leading countries, amounts to only 13% and 11% respectively (ibid., p. 21). In Italy, urgent policy intervention is required to change consumption behaviour, given that 34.2% of the Italian population over 18 years of age is overweight and 12% is obese, according to the National Institute of Statistics (ISTAT) (Bologna, 2022). The Italian organic food market, however, is the third fastest growing market in the EU from 2009 to 2019, after France and Germany (*Bioreport 2020 - L'agricoltura biologica in Italia*, 2021, pp. 52–53). Additionally, a recent EU report reveals that 95% of Italian consumers believe that organic food production must comply with specific rules regarding the use of pesticides, fertilisers and antibiotics, and 93% think that organic production entails environmental benefits and improved animal welfare (European Commission, 2023, p. 19). Yet, organic products purchased by Italian households in 2021 represent only 3.9% of the total agri-food market (Giuliano and Pugliese, 2022, p. 84) and the current tendency is one of stagnation or even decline in these purchases (Giuliano and Meo, 2022, p. 24). Insight into consumer motivations involving food choice and procurement appears, therefore, a priority.

Since the reform of the Common Agricultural Policy (CAP) in 1992, the EU recognises the sustainability of organic farming (De Cock et al., 2016, p. 1) and recently the European Commission placed it at the centre of the Farm to Fork strategy (European Commission, 2022, 2020, pp. 8–9). Still, in 2020 the area under organic farming in the EU was only 9.1% of the land utilised for agriculture (European Commission, 2023, p. 5). Italy has the third largest area under organic farming in the EU, after France and Spain (European Commission, 2023, p. 5), with 17.4% of its agricultural land used for organic production in 2021 (Giuliano and Meo, 2022, p. 2). France, in addition to having the fastest growth rate of organic food consumption and organic farmland, is also the only EU country with an explicit national policy for agroecology as early as from 2012 (Wezel and David, 2020, p. 68). Italy, by contrast, lacks a national program dedicated to agroecology (Basile et al., 2016, p. 15) and the Strategic National Plan (PSN) introduced an agroecology-informed approach to develop an organic system only in 2016 (ibid., p.5, 20). The Italian policy on organic agriculture is heavily influenced by EU guidelines through the CAP and, recently, the European Green Deal (Palazzoni and Meo, 2023, p. 5). The recorded increase in agricultural areas converted to organic production, for example, was stimulated by the 2007-2013 Rural Development Plan (PSR), which allocated 1591 million euros, or 11.2% of its total budget, to organic production (MIPAAF, 2016, p. 5). The subsequent 2014-2020 PSR allocated 2474 million euros, or 10.9% of the total PSR budget (*Bioreport 2020 - L'agricoltura biologica in Italia*, 2021, p. 87) and the new 2023-2027 PSR allocates 2108 million euros i.e. 13.2% of its budget to this purpose (Palazzoni and Meo, 2023, pp. 13–16). The Farm to Fork target of 25% of EU farmland cultivated organically by 2030 helped the parties involved in the PSR decision to agree on the final budget (Giuliano and Meo, 2022, p. 25,28). The PSN regulation on organic agriculture is permeated by a number of issues (*Bioreport 2020 - L'agricoltura biologica in Italia*, 2021, pp. 81–82) as reflected, for example, in the decision of several farms to withdraw from certification due to the high costs involved and the increased difficulties in introducing organic products in the market (Giuliano and Meo, 2022, p. 15). Nevertheless, important milestones have been achieved in recent years. The ratification of law number 23, on March 9th, 2022, led to the recognition of the environmental and social value of organic agriculture and the regulation of various subjects related to organic production (Gazzetta Ufficiale della Repubblica Italiana, 2022). The law includes an action plan with interventions to increase organic agricultural production and "to encourage the consumption of organic products through information, training and education initiatives, including environmental- and food education, with particular reference to public catering" (ibid., p. 3) (author's translation). In Article 13, the law also recognises the *biodistricts* or "organic farming districts" (Zanasi et al., 2020, p. 2) and their primary role in implementing sustainable agriculture, environmental protection, the revitalisation of rural areas through social cohesion, and as an ideal breeding ground for research.

Biodistricts have been clustered into two groups (Dara Guccione et al., 2021, p. 8). The first group refers to the original definition of biodistrict developed by the Italian Association of Organic Agriculture (AIAB) as "a geographic area naturally suited to organic production in which the various players in the territory (farmers, private citizens, associations, tourist operators and public administrations) enter into an agreement for the sustainable management of resources, focusing on organic production that involves all the parts of the supply chain up to consumption" (Dara Guccione et al., 2021, p. 8), (author's translation). AIAB's definition highlights the importance of integrating organic producers with tourism and craftmanship in collaboration with public administrations and citizens (Dara Guccione et al., 2021, p. 8). The second group describes a biodistrict as an ecoregion according to the International Network of Ecoregions (IN.N.E.R.) (ibid.), officially constituted in 2014 (Pugliese et al., 2015, p. 1). An ecoregion comprises both AIAB-approved and non-approved areas, and defines a biodistrict as "an area where farmers, citizens, touristic operators, associations, and public actors established an alliance for the sustainable management of local resources based on the principles and model of organic farming in order to boost the economic and socio-cultural development of their territory" (Zanasi et al., 2020, p. 1). Pugliese et al. formulate it as a "geographical zone where farmers, citizens, tourist operators, associations and public actors "sign an agreement" for the sustainable management of local resources, based on organic principles and practices, aiming at the fulfilment of the economic and socio-cultural potential of the territory" (Pugliese et al., 2015, pp. 1–2). The IN.N.E.R.'s definition emphasises the collaboration among local actors, while organic agriculture is referred to in terms of its principles as a method of production and consumption (Dara Guccione et al., 2021, p. 8). As such, biodistricts have catalysed the interest of academic research. Studies have been conducted on the regulatory framework to assess the suitability of a region to become a biodistrict (Assiri et al., 2021) and the territorial and socio-economic characteristics that facilitate the creation of a biodistrict (Mazzocchi et al., 2021). An Ecoregional Vocational Index (EVI) has also been developed to highlight the importance of holistic perspectives for the success of a biodistrict (Assiri et al., 2021). Other studies delved into the formation of biodistricts to identify the guiding principles for designing these areas (Dias et al., 2021). Some scholars analysed biodistricts from the lens of community-based food systems and food citizenship, focusing on governance and sustainability (Mendez, Pappalardo & Farrell, 2021). Biodistricts have also been identified as an ideal arena to apply the principles of agroecology and sustain rural development and, thus, as an avenue towards sustainable food systems based on locally produced organic food in its specific cultural and social contexts (Guareschi et al., 2020).

The agricultural models embedded in the current food systems have affected rural social and environmental landscapes, leading to several negative impacts including depopulation, unemployment and desertification (Dias et al., 2021, p. 1). However, until recently, the food question has mainly focused on urban movements

and urbanisation, while excluding rural and mountain areas in the Global North (Brand and Pettenati, 2022, p. 1). In contrast, the food systems and local identity of these territories should be investigated, and this should come through the "food-related representations, expectations and practices of their inhabitants" (ibid., p. 3). Studies on biodistricts and local consumers should, therefore, receive special attention, moving away from the view of rural and mountain regions as mere *loci* of food production to the benefit of urban areas (ibid., p.2). Each biodistrict, moreover, presents different constituents and processes, and experience gathered during the development of various biodistricts indicates that a lack of civil society participation can jeopardise the success of the biodistrict project (*Biodistretti e valorizzazione del territorio. Webinar ARGAV, 15 gennaio 2021*, 2021). A successful participatory design is therefore crucial, and rests on the knowledge of local consumers. It follows that the perspectives and involvement of local civil society plays a critical role in driving both alternative food systems and sustainable rural development, through the biodistricts. Several projects have been conducted in the biodistricts to connect local organic food producers with consumers and support the rediscovery of local food traditions and territorial protection. Projects tend to consider as stakeholders "production, trade channel[s], research and extension and territorial governance" (Guareschi et al., 2020, p. 12), leaving consumers aside. Other studies have revealed that even in biodistricts, civil society may not be aware of the importance of agriculture in landscape management and of the value of quality food consumption (Dara Guccione et al., 2021, p. 36). Nevertheless, more research is needed to gain an in-depth understanding of the perspectives, practices, and motivations of local consumers towards food and locally produced organic food, in particular. These social practices revealing the processes of daily materialities may also "become indicators of (more or less) sustainability" (Barr et al., 2011, p. 1226). Therefore, shedding light on these questions can benefit both policy makers and the biodistricts, providing valuable knowledge to tailor innovative policies and tools to raise awareness, elicit virtuous behaviour, and even enable the co-creation of new solutions towards more sustainable food practices.

1.1 Research questions

In this master thesis I explore the food practices of consumers in the biodistrict of Valle dei Laghi and their rationale in the light of environmental, social, and economic sustainability of food systems. I also shed light on how these consumers understand and perceive organic food and food production. My research questions are:

1. *To what extent do food practices enacted daily by consumers in the Madruzzo and Cavedine municipalities in the Valle dei Laghi biodistrict, foster, leave unaffected or undermine the trajectory towards sustainable food systems?*
2. *What barriers and enablers influence these practices?*

3. How do these consumers assess, value and approach organic and biodynamic products and production methods?

The overall structure of the thesis takes the form of five chapters, and six appendices. Chapter one, the introduction, outlines the urgency of a transformation towards sustainable food systems and the pivotal role of consumers in achieving this. It gives a brief overview of the policy and guidelines proposed by transnational organisations and lists the most common regulations adopted by governments to facilitate the transition. Thereafter, it frames the ongoing debate on consumers within academia and policy-making, and finally focuses on Italy and the biodistricts. The chapter ends with the research questions. Chapter two, context and methods, begins with laying out the biophysical and social context of the Valle dei Laghi biodistrict. The following part is concerned with the methodology and methods that underpin this research work. The third chapter presents the results of the research from the fieldwork. The data is organised by the most relevant themes. Chapter four furthers the discussion and relates the findings to scientific literature. This chapter has been divided into three sections that address the research questions and focus on the key themes that emerge from the study. Finally, chapter five presents the conclusions of the research study and proposes a possible continuation of the work.

2 Context and methods

2.1 Territory of the Valle dei Laghi biodistrict

The Valle dei Laghi biodistrict, founded in 2014, is located in the Northern Italian Alps and brings together three neighbouring municipalities: Vallelaghi to the North, Madruzzo in the centre and Cavedine to the South, as illustrated in Figure 1. It is part of the Autonomous Province of Trento which covers 620,000 hectares of land and has roughly 540,000 inhabitants (Andreola et al., 2021, p. 8).

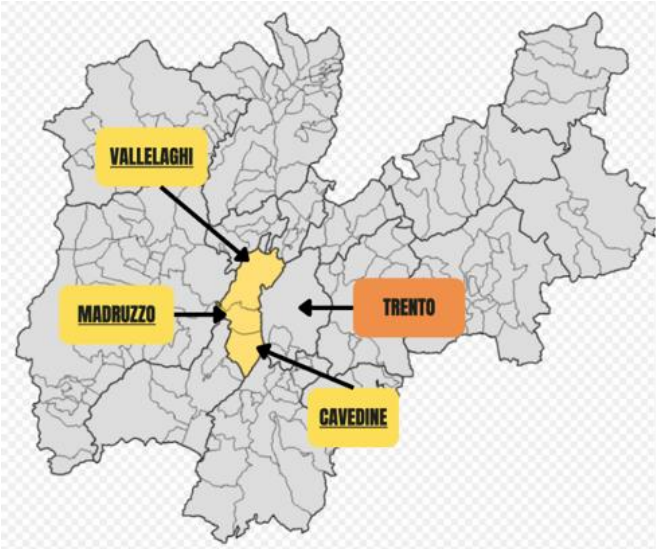


Figure 1: Geographical distribution of three municipalities that form the Valle dei Laghi biodistrict within the Autonomous Province of Trento, Italy.

A dense road network easily connects it to the provincial capital of Trento. The municipality of Madruzzo, conversely, is the smallest, with 28.93 km^2, while it has the highest population density with 102.42 inhabitants per km^2.

Table 1: Demography and topographic characteristics of the three municipalities constituents of the Valle dei Laghi biodistrict[1].

Municipality	Emblem	Inhabitants	Surface (km^2)	Density (inh./km^2)
Vallelaghi		5176	72.45	71.44
Madruzzo		2963	28.93	102.42
Cavedine		3025	38.23	79.13

The area of the Valle dei Laghi biodistrict cultivated by organic agriculture in 2017 is visualised in red in Figure 2, while the distribution of different crops and land use throughout the overall biodistrict is reported in Table 2.

1 Data updated to 2022 from https://www.tuttitalia.it/trentino-alto-adige/provincia-autonoma-di-trento/.

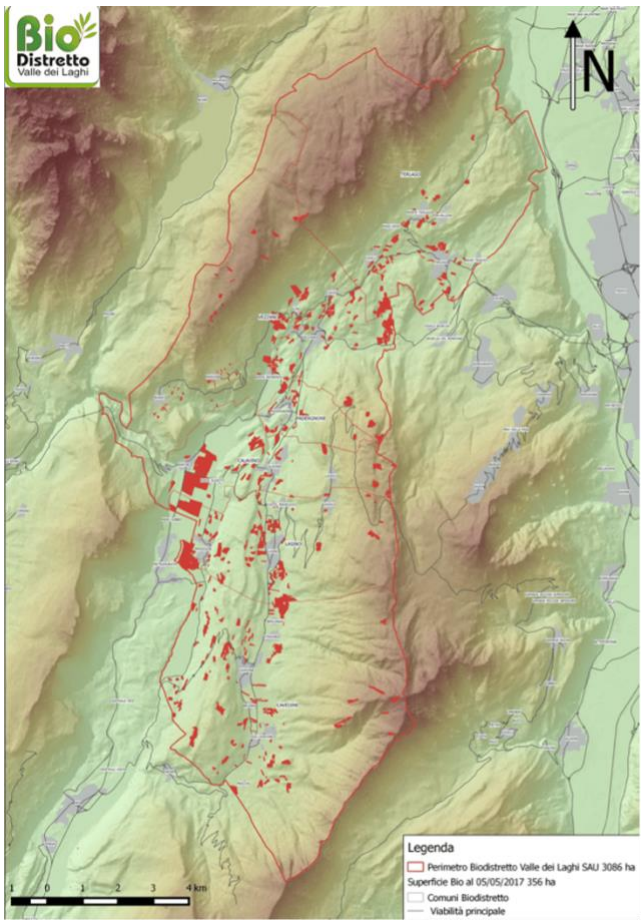


Figure 2: Perimeter of the Valle dei Laghi biodistrict (red line) and surface dedicated to organic agriculture (red areas) by 2017[2].

The overall area of the biodistrict overlaps with the three municipalities that constitute the biodistrict. The total agricultural land dedicated to organic agriculture is 463,3 ha. It can be observed that vineyards cover almost 60% of the organically cultivated area, followed by fruits, mainly apples, with 14% of the area. This reflects the export-oriented character of the local organic and non-organic agricultural production.

2.1.1 Delimitations of research area

Given the limited scope of this master's thesis, the study includes only some aspects of the complex reality of the biodistrict.

Firstly, the investigation focuses on the municipalities of Madruzzo and Cavedine. This is due, on the one hand, to the fact that the municipality of Madruzzo is the smallest in the biodistrict, yet with the highest

2 Picture provided by the Valle dei Laghi biodistrict. No recent information was available at the Office of Biologic Production, in the Province of Trento.

population density, which facilitated research activities. On the other hand, despite the administrative distinction into two municipalities, the inhabitants of the two areas are integrated and connected. Secondly, the participants in this study consist of the people I contacted who were willing and able to participate in the research activities. The initial group of participants was reached through the suggestion of the secretary of the biodistrict. Subsequently, I established contact with other people though the first participants, my personal activities, and the president and vice-president of the biodistrict, as further explained in section 2.4. It is important to note that individuals that would not consent to participate in an interview are more likely not to be drivers of a change in purchasing structure and behaviour. Thirdly, given the complexity of the notion of sustainability, only some dimensions of sustainable food systems and nutrition are included. Finally, due to the limited time, a simple case study was selected rather than a more complex comparative study that would have required the use of mixed methods and therefore more time.

Table 2: Areas dedicated to different cultivations in the Valle dei Laghi biodistrict[3].

Type of cultivation	**Organically cultivated surface [ha]**	**Percentage of total agricultural land [%]**
Grape	276,46	59,7
Fruits	64,85	14,0
Grassland (prati)	51,93	11,2
Crop plants and horticulture	43,87	9,5
Pasture (pascolo)	11,99	2,6
Olive tree	10,12	2,2
Kiwifruit	1,73	0,37
Walnuts and other nuts	0,97	0,21
Chestnut	0,83	0,18
Small fruits	0,27	0,06
Medicinal plants, mushrooms, and other crops	0,27	0,06
Nursery	0,01	0,002
TOTAL AGRICULTURAL LAND	**463,30**	
Woods, hedges, buffer strips and field margins	105,03	
Tares, water, and non-agricultural use	17,17	
TOTAL AREA	**585,50**	

3 Data provided by the Valle dei Laghi biodistrict.

2.1.2 Municipalities of Madruzzo e Cavedine

The municipalities of Madruzzo and Cavedine extend across two valleys: the wide Sarca valley to the west and the Cavedine valley to the east. They contain several hamlets located as illustrated in Figure 3: Sarche, Ponte Oliveti and Pergolese located in the Sarca valley, whereas Calavino, Castel Madruzzo, Lasino, Stravino, Cavedine, Brusino and Vigo are found in the parallel Cavedine valley.

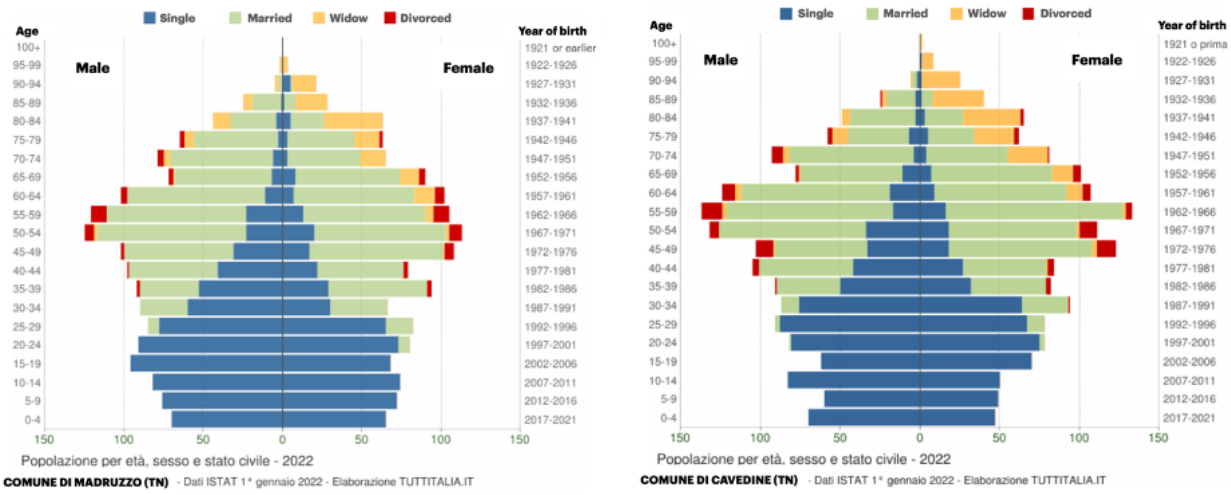
Figure 3: Location of the hamlets in the municipalities of Madruzzo and Cavedine.

The number of inhabitants in each hamlet by 2015 is presented in Table 3.

Table 3: Number of inhabitants in the main hamlets of the municipality of Madruzzo and Cavedine[4] by 2015.

Main hamlets of municipality of Madruzzo and Cavedine	Inhabitants
Calavino	667
Castel Madruzzo	38
Lagolo	15
Lasino	513
Pergolese	450
Ponte Oliveti	58
Sarche	340
Berlonga	36
Brusino	118
Stravino	146
Vigo	690

The distribution of the population of the municipality of Madruzzo and Cavedine based on age, gender and civic status is reported in Figure 4 (a) and Figure 4 (b) respectively.



(a) (b)

Figure 4: Distribution of the population in the municipality of Madruzzo[5] (a) and Cavedine[6] (b) based on age, gender, and civil status.

The Sarca valley is intersected by the busy state road SS45, which connects Trento to Riva del Garda. The hamlet of Sarche, in the municipality of Madruzzo, hosts the area's shopping centre with the largest supermarket, Orvea, owned by the Poli Group. Right beside it, you find the family-run fruit and vegetable

4 Information from Madruzzo, Trentino-Alto Adige, Italy and Cavedine Italian Comune.

5 Picture available at Statistiche Demografiche - Madruzzo - Popolazione per età, sesso e stato civile 2022

6 Picture available at Statistiche Demografiche - Cavedine - Popolazione per età, sesso e stato civile 2022

shop, Isabella. A few kilometres further east, in the hamlet of Ponte Oliveti, is the cement plant owned by Italcementi, since 2016 part of the German Haidelberg Cement Group. In operation since the 1960s, the cement plant reactivated its baking line at the beginning of 2022, employing fifty people ("Investimenti e sostenibilità per il territorio," n.d.). Despite claims of improved SCR (Selective Catalytic Reduction) system to reduce the environmental impact, this decision caused concern and unleashed protests from part of the local community and environmental groups ("Sarche, il cementificio è in produzione, con il mistero delle 'fumate' sulla valle," 2022) including the Valle dei Laghi biodistrict. The Sarca valley borders the municipality of Dro to the South and closes in at Lake Cavedine. The valley is dominated by monocultures of vineyards and apples as illustrated in Figure 5.

Figure 5: Monoculture in the Sarca valley (photo by Maddalena Cirani).

Moving eastwards, the parallel Cavedine valley is narrower and traversed by the less heavy trafficked SP84 provincial road, which starts at Padergnone and leads to Drena. The area here is also cultivated mainly with vineyards and apples, but also some wheat. This valley is served by small Margherita supermarkets owned by the DAO cooperative which has been partnering with Conad since 2004 ("Chi siamo," 2019). Other smaller shops are also found in the area.

2.2 Methodology

The nature and complexity of this research is best explored by constructivism and its recognition of individual beliefs in constructing reality (Bernard, 2018, p. 2) rather than the positivistic assumption of an objective external reality that can be explained (ibid.). Given this ontological approach, interpretative and critical methodologies were preferred to unearth the motivations behind human behaviour and the possible underlying societal power dynamics (Hesse-Biber, Sharlene Nagy, 2014, p. 12). Although a methodological

approach does not dictate the use of quantitative or qualitative methods (ibid., p.12) and although mixed methods may be better suited to investigate topics with a high degree of complexity (ibid., p. 2), this study builds on a qualitative approach and its emphasis on words (Bryman, 2016, p. 32). This decision rests, on the one hand, on the intention to delve deeper into consumers' perspectives and motives related to food practices and, on the other hand, on the limited time and scope of this work. Constructivism and qualitative research also interlink with an inductive approach to research (ibid., p. 33, 375), meaning that "theory is the outcome of research which involves drawing generalizable inferences out of observation" (ibid., p. 22). Therefore, theory originates from research findings of individual representation of social properties.

2.3 Methods

Methodology, intended as a theoretical perspective, serves to bridge "the research questions with specific methods that address these questions" (Hesse-Biber, Sharlene Nagy, 2014, p. 14). Therefore, the theoretical framework outlined in paragraph 2.2 underpins the selection of methods of inquiry that capture multidimensional factors and personal views. The following sections explain each method utilised in this work and detail how it was applied. Firstly, the research topic fulfils the characteristics of the *case study*, and section 2.3.1 outlines the characteristics of this method and the related ongoing debate within academia. Secondly, the *rich picture* described in section 2.3.2 was employed to describe the complexity of the case study and provide an overview of the bio-physical, sociocultural, economic, and historical parameters and dynamics that characterise the context. Furthermore, although at the beginning of the fieldwork the use of *multimethods* (Hesse-Biber, Sharlene Nagy, 2014, p. 3) in the form of interviews, direct observation, photovoice and a focus group in that order had been planned, in the end the work was confined to interviews and direct observation. This was due to the richness and strength of the collected data, but also to the limited available time for the fieldwork. The description of the latter two methods is illustrated in sections 2.3.3 and 2.3.4 respectively.

2.3.1 Case study

The research project is designed as a single case study under the hypothesis that consumers living in a biodistrict would display higher support for and understanding of sustainable food practices and organic agriculture, than consumers living in industrial districts or urban areas. A case study has been defined in different ways. Gerring (2004) describes it as "an intense study of a single unit for the purpose of understanding a larger class of (similar) units" (Gerring, 2004, p. 342), highlighting the contribution of the case study to the generation and development of theory. The two-fold definition provided by Yin (2009) is more articulated. First, Yin defines a case study as an in-depth empirical inquiry of "a contemporary

phenomenon […] within its real-life context" with no clear boundaries between phenomenon and context (Yin, 2009, p. 18). Therefore, by focusing on "the holistic and meaningful characteristic of real-life events" (ibid., p. 4) and returning a snapshot of an ongoing phenomenon that cannot be manipulated (ibid., p. 2, 13), this research falls into the category of the case study. Second, Yin details that due to the complexity and entanglement of phenomenon and context, a case study involves "many more variables of interest than data points" (ibid.). In Yazan's comparative study (Yazan, 2015), he refers to Stake's and Merriam's constructivist approach, and their definition of case study aligns better with my work than the Yinian "positivistic leaning", although Yin never explicitly expresses reference to positivism as epistemological orientation (Yazan, 2015, pp. 136–137). In Merriam's view, in fact, research should shed light on "the way people make sense of their world and their experiences in this world" (ibid., p. 137). The articulation of the research questions as "to what extent" or "how" and "what" -questions indicate the exploratory and explanatory character of the research (Yin, 2002, p. 6) although a descriptive dimension is also comprised. The criticism of "loosiness of the case study research" (Gerring, 2004, p. 350) is refuted by Yin's methodological strategy to ensure design quality through construct validity, internal validity, external validity and reliability (Yin, 2009, p. 24). To construct validity he recommends to collect "multiple sources of evidence" and prove their convergence (Yin, 2002, p. 36,83), which was obtained through interviews and direct observation. In addition, the images shown to the participants at the end of the interview also functioned as a triangulation in that they led to corrections or elaborations of statements that had been made during the first part of the interview. "Validity refers to the accuracy and trustworthiness of instruments, data, and findings in research" (Bernard, 2018, p. 41) and it is attempted to obtain this by documenting the procedure applied throughout the research work including selection of participants, data collection and analysis described in paragraphs 2.3.3, 2.3.4, 2.4, and 2.5. The aim is to provide transparency about how the research was conducted. Reliability refers to "whether or not you get the same answer by using an instrument to measure something more than once" (ibid., p. 42). On a couple of occasions, I conducted interviews with different members of the same family. This offered an opportunity to confirm the trustworthiness of the retrieved data. In one situation this was done on purpose, and, in another incident, this emerged at a later stage of the fieldwork. In a third instance, it was intentional as I wanted to triangulate the information and perceptions received by the different participants.

Although the case study method has generally been questioned and left aside by methodologists, high scientific value has been awarded to some classic case studies and the number of publications has increased over the years (Gerring, 2004, p. 341) in areas such as psychology, anthropology, and education, but also in political science, business and economics (Yin 2009, p. 4). Five misunderstandings tend to cast shadow over the case study as a method in terms of theory generation, reliability and validity (Flyvbjerg, 2006, p.

221). The misconception on the non-generalizability of the case study has particularly undermined the value of this research method. On the one hand, smart selection of a case study can be conducive to generalizable results, as for famous single scientific experiments (ibid., pp. 225-226). However, more often, similarly to science where numerous experiments are conducted to lead to generalizability, also in social science multiple case studies should be used to "expand and generalize theories (*analytic generalization*) and not to enumerate frequencies (*statistical generalization*)" (Yin 2009, p. 15). Therefore, instead of focusing on generalizing the findings, the case study focuses on "how well the researcher generates theory out of the findings" (Bryman, 2016, p. 64). To put it another way, "the force of example" is here preferred as the ground for scientific development, rather than the often overvalued formal generalisation (Flyvbjerg, 2006, p. 228). On the other hand, generalizability in the process of knowledge accumulation has been overestimated (ibid.). While some scholars claim that "the problem of representativeness cannot be ignored if the ambition of the case study is to reflect on a broader population of cases" (Seawright and Gerring, 2008, p. 294), it can also be argued that "a purely descriptive, phenomenological case study without any attempt to generalise can certainly be of value in this process and has often helped cut a path toward scientific innovation" (Flyvbjerg, 2006, p. 227). Case studies are also essential for human learning since the condition of expertise originates, in fact, from the knowledge of a number of specific cases rather than context-independent theoretical knowledge (ibid., p. 222). In this sense, "concrete, context-dependent knowledge is […] more valuable than vain search for predictive theories and universals" (ibid., p. 224). Therefore, a case study on consumer perspectives and food practices in the Valle dei Laghi biodistrict intends to shed light on an aspect of the local reality, providing a descriptive review of the local practices, an explanatory understanding of consumer behaviour in relation to the biodistrict and an exploratory account of unexpected habits and rationales.

2.3.2 Rich picture

The use of rich picture is recommended when dealing with messy situations. While ordered domains, i.e. simple or complicated domains, can in fact be predicted and solved through different strategies and levels of expertise (Guijt, 2010, p. 286), unordered domains, i.e. complex and chaotic domains, require a different approach. Complex domains follow unpredictable trajectories and cannot be replicated, while chaotic domains present unclear cause-effect linkages in addition to hidden unknowns (ibid., p. 287). Put in another way, chaotic domains relate to wicked problems or a mess that "defy definition" (Armson, 2011, p. 15). In this sense, the rich picture utilised within the Systems Thinking framework (Armson, 2011) efficiently captures in an unstructured way "things, ideas, people and connections" but also "character, feelings, conflicts and prejudices" of messy situations (ibid., p. 57). Therefore, a rich picture reproduces in a glimpse

the messiness of the multi-layered complexity of a local reality. The impressions, elements and recurrent topics observed and registered during the fieldwork were collected in a scattered way through this method, as shown in Figure 6. Some of the interesting emerging elements are the presence of kitchen gardens, time as a factor of stress or serenity, family connection, cooking, tap water versus water in plastic bottles, monoculture of apples and vineyards, baking bread, walking in nature, the cement plant, the cost and aesthetics of organic food, organic agriculture, biodynamic agriculture. *Glocalization*, defined as "the interpenetration of the global and the local, resulting in unique outcomes in different geographic areas" (Ritzer, 2010, p. 362), also emerges not only in terms of the interconnection of local production for the global market, or international tourism visiting the area, but also in terms of local people having studied abroad or working abroad or with connection with "the global".

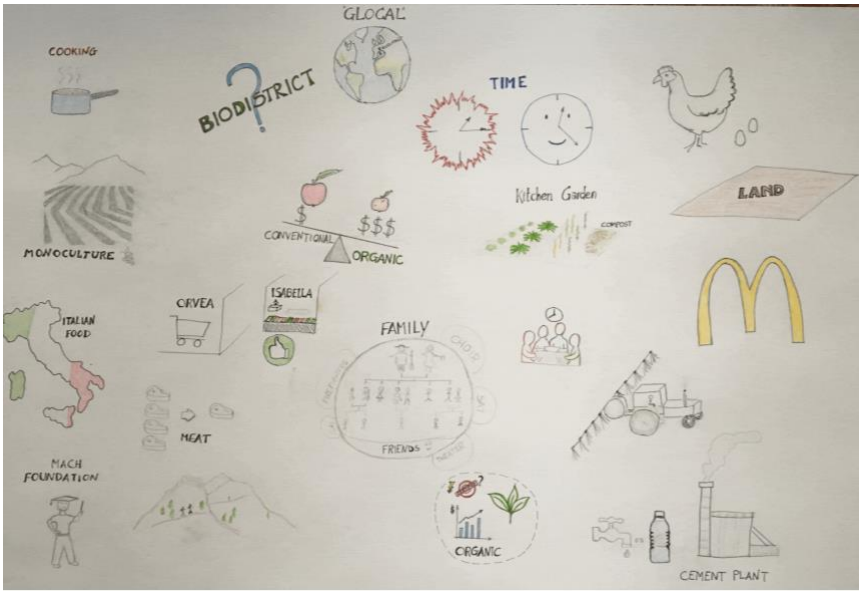


Figure 6: Rich picture describing the Madruzzo and Cavedine local reality.

2.3.3 Interview

The fieldwork took place in February and March 2023 and resulted in 34 interviews with consumers. Nine local producers of organic food (vegetables, honey, bread, and apples) were also contacted, but only two agreed to be interviewed. In addition, interviews were conducted with the current president of the biodistrict and two former presidents. The interviews with consumers and producers built on two dedicated interview guides designed as semi structured interviews with open-ended questions. The initial text was devised in English, see Appendix 2 - Interview guide for consumers and Appendix 3 – Interview guide for producers, and then translated into Italian by the author. The use of an interview guide enabled all participants to answer the same questions and therefore collect "reliable, comparable qualitative data" (Bernard, 2018, p.

165). The interviews with consumers started with a general inquiry to situate the participant in his/her daily life and family context. Subsequent questions focused on food practices starting from the very practical case of the most recent supper or the most recent purchased food. This opened the possibility for me to inquire about the cooking habits of the household, the organisation of food provisioning and how they selected whom to buy from or what to buy, and their rationale for these choices. Thereafter, specific questions were dedicated to the biodistrict and organic products and farming. Finally, the interview turned into comments on pictures related to both current and alternative food systems[7]. The interview guide was structured to address most of the indicators that characterise the different dimensions of sustainable food systems, as presented in Appendix 1 – Extensive literature review. Additional unexpected variables of sustainability emerged during the interviews, such as the wide use of kitchen gardens, food sharing, rearing hens and making compost. The presidents of the biodistrict, in contrast, were interviewed through unstructured interviews with open-ended questions to facilitate a freer exposure of their experience and understanding of the biodistrict. For all interviews, the informed consent was sent or handed over to the participant. Prior to the start of the interview, the interviewee was always informed on his or her right to withdraw from the research project at any time, meaning that none of the data provided in the interview would be used and published. Furthermore, personal data such health-related topics were carefully avoided in order not to incur a violation of the personal data policy. The informed consent is available in Appendix 4 – Informed consent.

2.3.4 Direct observation

Fieldwork in the municipality of Madruzzo provided me with several opportunities to observe the site and experience certain aspects of local people's daily lives, leading to a wide range of qualitative data in the form of fieldnotes and photographs (Bernard, 2018, p. 273). Walking to the homes of the interviewees I could observe the area directly and confirm, for example, the spread of kitchen gardens and their produce during winter, as recounted by the participants. The presence of kitchen gardens in many of the biodistrict's gardens and sometimes between the rows of vines is documented in Figure 12 in Appendix 6 – Comprehensive results. Walking, or sometimes taking public transportation in the area, also allowed me to talk to different people and gather opinions and impressions from individuals that otherwise would not have been contacted. This way I was able to recruit three more interviewees. Renting the apartment above the house of the secretary of the biodistrict also allowed me to see their lives and made it easier to be present on a couple of meetings organised by the biodistrict. Similarly, the invitation to have lunch together with a

7 Alternative food systems have developed historically in different movements. One of them is the community food security movement which has been defined as providing "access to affordable, nutritious, and culturally appropriate food for all people at all times" in the context of "a system of growing, manufacturing, processing, making available, and selling food that is regionally based and grounded in the principles of justice, democracy, and sustainability" (Campbell, 2004, p. 346).

participant and her family members offered an insight on cooking, eating habits, recipes, and that family's relationship with food. Furthermore, being in the area during carnival time was also the occasion to observe a food-related event called "The Grand Carnival" where every village organizes special gastronomic events for the community often for a free donation. Participating in some of these events also provided me with the opportunity to observe people's relation to and interest in traditional food as well as other aspects of the food system such as the various approaches in different villages concerning the use of plastic plates and glasses.

2.4 Selection of participants

With reference to paragraph 2.3.1, the case study method does not intend to statistically represent the practices and opinions of the population in the selected area, but rather extend and generalize theories through *analytic generalization* (Yin 2009, p. 15). Hence, this research study avails of a non-probability sampling strategy, particularly *convenience sampling* and *snowball sampling* to generate useful results as a "springboard for further research" (Bryman, 2016, pp. 187–188). The non-statistically representative group of informants of this study, although it does not mirror the characteristics of the population in the territory, yet includes various randomly distributed parameters that define the category of *consumer* such as age, gender, profession, marital status, economic conditions, personal interests, land ownership or relationship with people owing a kitchen garden. The inability or disinterest of some people to participate in a research study, or simply their unattainability, furthermore, does not affect the results emerging from the study as highlighted earlier. Initially, eight interviewees were proposed by the secretary of the biodistrict of the Valle dei Laghi. This resulted in eight formal interviews, and one informal interview, five with individuals from Madruzzo municipality and four with individuals from Cavedine municipality. After the interviews, participants were asked to provide the names of other potential interviewees, as done in other case studies (Yin, 2002, p. 90). Some participants did not provide any name, while others proposed other candidates willing to be interviewed. One respondent with strong roots in several local organisations suggested, in fact, many respondents and other information turning this person into an "informant" (ibid.). From the standpoint of classic research method permeated by "sampling procedures and design" (Noy, 2008, p. 332), this procedure could be accused to contain an inherent "distortion of representativeness of the sample" since some members of the population "stand little or no chance of being selected" (Bryman 2012, p.187). However, from a case study stance, this does not affect the value of the results in terms of representation of a specific slice of local reality. The *snowball sampling* by affording access to new participants "through contact information […] provided by other informants" (Noy, 2008, p. 330) shifts, in fact, the control over the sampling phase from the researcher to the informants (ibid., p. 332). The

informants' territorial distribution deriving from this sampling method is visually illustrated in Figure 7. At the centre of the image is the "origin", that is the secretary of the biodistrict that provided the first names. The first generation of informants (ibid.) provided by the origin is represented by the blue-light squares near the innermost blue-light circle. The number at the centre of the squares refers to the chronological order of the interviews, number 1 being the first interview, number 2 the second interview and so on. The radii at different angles indicate the different hamlets in the Madruzzo and Cavedine municipalities, so that the placement of each square near a radius indicates where the respondent lives. The pink squares by the second concentric ring in pink indicate the second-generation interviews, that is individuals suggested by the first-generation informants.

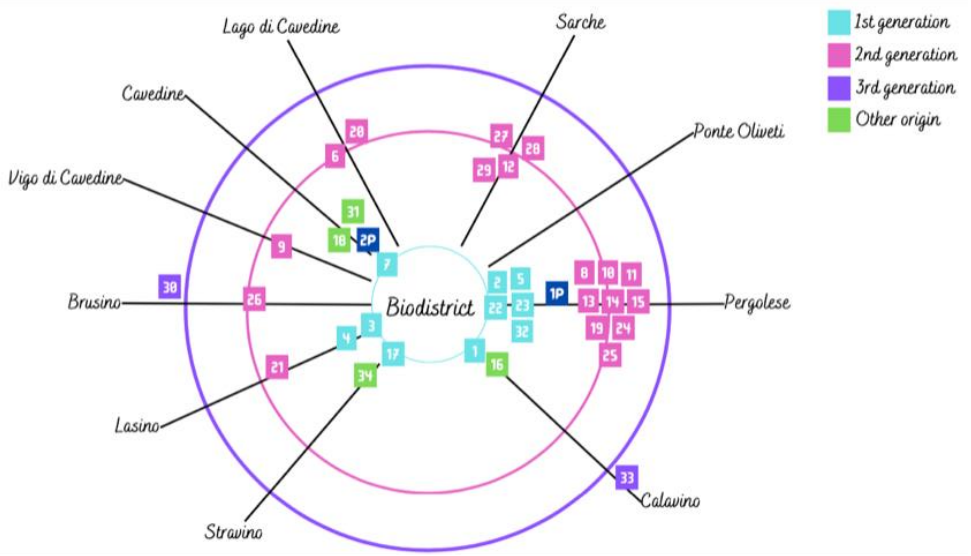


Figure 7: Visual representation of the snowball sampling process by territorial distribution (graph developed by Maddalena Cirani).

Similarly, the numbers in the squares and their location indicates the interviewee's place of residence. The third outermost concentric ring in purple and the purple squares refers to the third-generation interviewees suggested by the second-generation participants. The green squares are individuals met in other contexts independent of the origin i.e. the biodistrict secretary. Finally, the blue squares marked with "P" indicate the producers willing to be interviewed. In addition to the snowball method, other individuals were met by chance during the fieldwork and accepted to be interviewed. The *network information* that underlies the snowball sampling is "essentially social because it both uses and activates existing social network" (Noy, 2008, pp. 332–333). The snapshot of this dynamic process is represented by the sampling-tree in Figure 8.

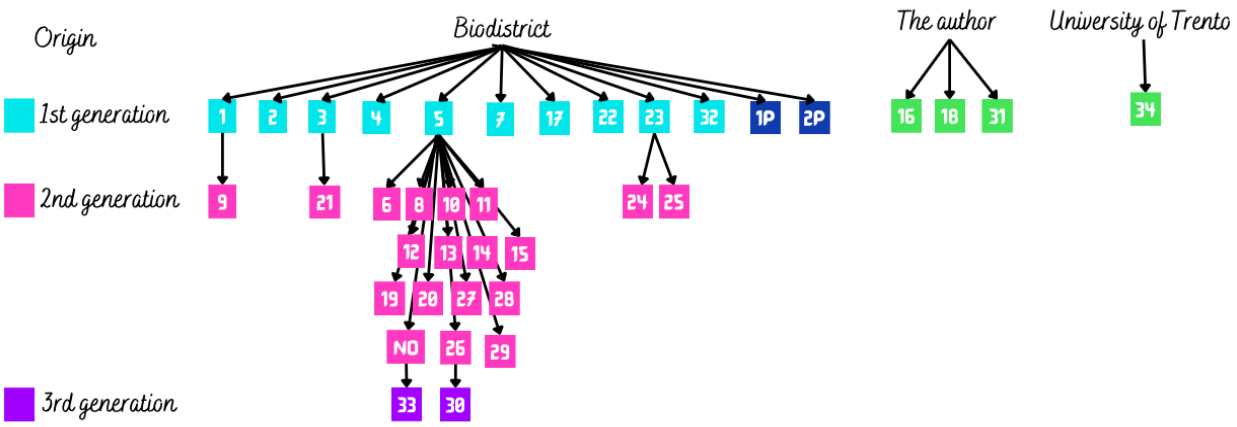


Figure 8: Snowball "sampling tree".

The list of participants is presented in Appendix 5– List of participants, where the gender, age, residence, and profession of each interviewee are reported, while the participants have been anonymised. All personal data of the producers have been omitted to protect the participants.

2.5 Analysis

The interviews were recorded and transcribed *verbatim* partly manually and partly with Microsoft assisted transcription software. The process of analysis was initiated parallel to the work of transcription and reading of the fieldnotes, and consisted firstly in coding, notably highlighting in different colours selected excerpts based on their *meaning units*, i.e. "words, sentences or paragraphs containing aspects related to each other through their content and context" (Graneheim and Lundman, 2004, p. 106). The rich picture described in paragraph 2.3.1 offered an additional supportive tool to identify recurrent topics and, therefore, cluster codes in sub-categories and categories. During the process of analysis attention was paid to the possible relationship between the different dimensions of sustainability, and the planning and enactment of food practices. Some sub-categories and categories stem deductively from the research questions and interview guide, such as the biodistrict and organic and biodynamic farming, while others emerged inductively from the fieldwork such own food production, food sharing and lack of time. The process of analysis was carried out in Excel where all sub-categories (ibid., p. 107) were placed in rows and, after assigning each participant an individual column, the codes pertaining to each sub-category were reported. The excerpts from the interviews were entered in Italian using the participants' own words. The sub-categories were aggregated into unifying categories and a subsequent process of abstraction bringing "descriptions and interpretations on a higher logical level" (ibid.) led to the identification of the analytic themes. The biodistrict conversely was explored as single building block given the limited data. The analytic themes have been identified in "Range of food practices on the sustainability spectrum", "Drivers of change towards sustainable food

practices and food systems", "View of the Biodistrict", "Considerations over organic and biodynamic farming". A further theme emerged related to sustainability although not strictly linked to food practices. The sub-categories, categories and themes resulting from this process are reported in Table 4.

Table 4: Process of analysis to identify the theme.

Codes	Sub-category	Category	Theme
	Sustainable food practices	Kitchen gardens	Range of food practices on the sustainability spectrum
	Own food production		
	Food sharing to other people	Food sharing	
	Food from family members		
	Food from friends/acquaintances	Purchasing of Italian products	
	Non-sustainable food practices		
	Tradeoffs on sustainability/pragmatism	Seasonal food	
	Automatic choices (instinctive behavior)	Meat consumption	
	Family/friends happiness	Cooking	
	Tradition	Waste management	
	Lack of time	Time availability	Drivers of change towards sustainable food practices and food systems
	Epistemology, discourse	Access to land	
	Understanding food and food systems	Taste and food quality	
	Confidence in food quality	Attitudes to food and food production	
	Taste and food quality		
	Community		
	Knowledge of the biodistrict	Biodistrict	View of the biodistrict
	Organic and biodynamic food and food production	Organic and biodynamic farming	Considerations over organic and biodynamic farming
	Understanding biodiversity		
	Food and health		
	Health - Pollution	Understanding of sustainability	Non-food related dimensions of sustainability
	Epistemology, discourse		

The selection of appropriate theories to make sense of the fieldwork data was finalised after analysis although reflection over suitable theoretical frameworks and concepts occurred continuously during data collection. Albeit this approach contrasts with Yinian advocacy for the development of a theoretical framework during the design phase of a case study, as opposed to ethnography and grounded theory (Yin, 2002, p. 28), it was nevertheless considered appropriate to maintain open perspectives during the fieldwork using "experiences from participation and observation to generate knowledge" (Lieblein et al., 2020, p. 7).

2.6 Positionality

The constructivist framework of this research project subtends that "there is no neutral or apolitical research" (Vanner, 2015, p. 3) and that knowledge is situated, therefore, neither neutral nor universal (Rose, 1997,

pp. 306–307). The view that the "researcher's positionality (in terms of race, nationality, age, gender, social and economic status, sexuality) may influence the "data" collected" (Rose, 1997, p. 308) was partly tackled by explaining in a transparent way the procedure followed in the data collection and analysis process as a means to limit personal bias in the research results. Furthermore, the critique of research as a hierarchical process can be turned into an advantage by enhancing the collaboration with participants "within and also potentially outside the immediate scope of the research project" (Vanner, 2015, p. 3), and was implemented by supporting the biodistrict with ideas for the application to a European research project and an event[8] which was eventually held in October 2023. However, acknowledging the mutual constitutive effect of knowledge creation, i.e. "researcher, researched and research make each other" (Rose, 1997, p. 316), seems a more suitable stance than exposing one's personal values and beliefs or positioning oneself in the structure of power in relation to the research object (ibid., pp.311-314). particularly in terms of sustainable food systems and sustainable food production.

3 Results

This chapter presents some of the data collected during the fieldwork clustered in particularly relevant macro-areas. The four sub-chapters read: "Food practices", "Clinchers for change towards sustainable food practices", "Organic and biodynamic food and food production," and "The Valle dei Laghi biodistrict". Albeit these themes originate deductively from the research questions and the interview guide, some specific context-dependent subthemes illustrated in the sub-chapters emerged from the fieldwork inductively. Given the richness of the data collected during the fieldwork and the space limitations of this document, it was not possible to report the material in its entirety in this chapter. However, it was considered essential to give ample space for the unfiltered voice of the participants and the motivations and thoughts that drive these practices. Therefore, a broader representation of the collected data and the rationale behind the structure of the relevant thematic categories analysed in each sub-chapter are provided in Appendix 6 – Comprehensive results. Appendix 6 also includes a final sub-chapter, "Non-food related dimensions of sustainability", which also stems inductively from the fieldwork and intends to enrich and complement the view of some participants on sustainability. Instead, chapter 3 provides a summary of the most meaningful material presented in Appendix 6, sometimes supported by a few reduced excerpts from the interviews.

8 The event was named "Biogreen festival" and its presentation can be found in the following link: https://www.biodistrettovallelaghi.it/biogreenfestival2023/

3.1 Food practices

The local food practice implemented by the participants that stands out the most, is the cultivation of kitchen gardens which can also generate high amount of produce. Most interviewees or their family directly own a land and cultivate a kitchen garden. Some of them also have hens and other animals and make compost. Most retired participants who own a plot tend to be self-sufficient in vegetables, especially in the summertime. One of them applies integrated agriculture but most adopt organic agriculture methods or do not use any synthetic chemicals at all. Although it is believed that many people cultivate their vegetables to save money, other reasons besides economics emerge, such as the lack of trust for the food one purchases in supermarkets or the impact of tradition. Rebecca explains:

"I don't do it to save money […]. It is because I am sure of my product, I know what I am eating, I want to have it all year round."

Shirley, when asked about why she chooses to produce her own vegetables, answers:

"It's a question of mentality, I don't know, what it depends on honestly. Maybe […] as a family footprint, the fact that we always ate things that came from our own work."

Sharing kitchen garden's produce with family, friends and acquaintances is also common and I was also offered some food during my fieldwork by one participant. The occasional use of food as barter between neighbours was also mentioned. Shirley, for instance, when helping her aunt to pick up chestnuts, explains:

"I always say, 'I don't want money. It's enough for me if you give me apples and pears, and some rabbits'."

Most participants show higher trust local and Italian products compared to products from other countries including EU countries. Several people like to support economically local producers and friends. The consumption of local products to reduce the environmental impact of transportation is rarely mentioned. One interviewee, in contrast, shows a penchant for Italian *terroir* products. He does not trust the excellences sold in supermarkets and is willing to travel long distances to purchase them from small local producers.

Almost all participants report having reduced meat consumption. Only a few people state that they are currently vegetarians. One interviewee has also switched to eating game meat from hunting. Many participants, particularly some young women who went to university, are aware of the negative aspects of industrial meat production and try to reduce their meat consumption even if, as they still live in the family of origin, they must conform to family habits. Nevertheless, several youngsters admit to eating with friends at McDonald's from time to time, but they feel reassured that meat is from Italy. A general lack of trust for

the quality of meat, including from a health perspective, surfaces in several interviews. Katrina, for instance, is concerned about the use of hormones and antibiotics. They decided to reduce meat consumption because:

"Once upon a time it was more individual producers, everyone had their own animal and so you knew what you were eating, let's say. Buying it now, you no longer have these certainties, to make things grow quickly."

Patrick recalls:

"When I bought [meat] at Orvea, reading the label it said, 'reared in Belgium', 'slaughtered in France' and 'sold in Italy'."

He and other participants curb this problem by buying locally produced meat at the "Federazione Provinciale Allevatori Trento"[9]. They do this because they know the surrounding valleys and recognise if the animal comes from a good area. Some of them also know the breeder. One household also reports having even started to buy plant-based hamburgers as a substitute for meat.

Purchasing seasonal food is also common. Contact with vegetable production in kitchen gardens accustoms one to seasonal fruit and vegetables. Besides automatically choosing seasonal foods, these individuals have also sharpened taste making it unattractive buying tasteless tomatoes or strawberries in winter. In contrast, supermarkets are often criticised for offering any kind of vegetable and fruit all year around. Many respondents seem not to fall in the marketing trap of buying the beautiful, shiny, and perfect veggies and fruits displayed in supermarkets, although some respondents report being attracted to these products.
Cooking is another widespread practice among the respondents. Women are generally more involved in cooking despite several of them admit that they dislike it. In contrast, several male participants, regardless of their age, enjoy cooking. Respondents tend to cook from basic ingredients and can cook traditional food, whereas they often avoid UPFs. Several of them bake bread by using a machine, and one young man also bakes bread with mother dough. Those who own a kitchen garden and do not consume the vegetables directly, cook them for the winter as preserves, jams or froze them to cook them later. Exceptions are families with children who buy sometimes ready-made pizzas or precooked fried fish for emergencies when they are short of time or to satisfy children's tastes.

9 The "Federazione Provinciale Allevatori Trento" is a cooperative of cattle breeders in Trentino founded on 16 June 1957 and composed of approximately 1,100 members. The objective of the FPA is to promote the livestock sector and improve the production conditions of livestock farms while respecting animal welfare and the environment, at the same time providing consumers with quality products that are attested at the point of sale, such as meat, cheese and sausages made and produced with high safety standards" (https://www.fpatrento.it).

Interviewees generally abhor waste. Harsh critique arises regarding the indiscriminate use of plastic and several strategies are implemented to reduce plastic waste. The connection between plastic and diseases emerged a couple of time. Likewise, almost everyone detests food waste. Some people carefully plan their weekly menus and buy accordingly to avoid having food that spoils in the fridge. Other avoid buying large amounts of food. Leftovers still exist and they disposed of in the municipality's humid recycling facilities. The leftovers from families with hens and compost are first used to feed the animals, while the residues are added to the compost. People habit not to eat the food ordered in restaurants is also taken up as a cultural malpractice. Food policy in school is also criticised, such as the decision to substitute meat with pulses which, not being cooked in an appealing way for children, results in considerable food waste. Isabel observes:

"How much stuff is thrown away, that1s something that's not even educational for children to see all this waste of food."

3.2 Driving forces for change towards sustainable food practices

Some key factors stick out as critical to implementing sustainable food practices, particularly time availability, access to land, affordability of organic products, attitudes towards food in supermarkets and reflections on food and food production.

Lack of time is one of the main reasons why many people who work, especially families with children, resort to unsustainable practices, such as buying UPFs or salad in plastic packets. Brenda and her husband tend to cook with fresh ingredients for most of their meals. However, she points out:

"Anyway, maybe sometimes for reasons of time, we buy something already made because then it is easier to prepare."

Similarly, Adam and Erik buy frozen pizzas for emergencies and to simplify the cooking in the evenings when needed. Melody comments:

"[Cooking] in any case takes time, so it is easier to buy vegetables ready in bags, washed."

Time constraints also prevent other sustainable practices, such as trying new recipes, shopping at farmers' markets, or growing a vegetable garden. At the same time, producing one's own vegetables, raising animals, or making compost depend on access to land. Most of the interviewees own land or several land plots in different areas in the region where they grow different produce. Those who don't have a piece of land would like to get one. Adam, for instance, admits:

“One of the things I would like to do is just to get a field myself, to have the possibility of having an orchard, because […] you are autonomous for one person with 100 square metres, both fruit and vegetables.”

The prices of organic products also affect the establishment of sustainable food practices, such as the purchasing of organic food. The current prices of organic food are regarded unequal by some interviewees. Dave and Erik, for instance, think the prices are inflated and feel they are being cheated. On the other hand, Shirley, who raises her own chickens, questions the reliability of the organic chickens sold in supermarkets as she regards the prices too low. Adam also emphasises that only well-to-do people can afford them. Cindy echoes that she would like to purchase at NaturaSì but “it costs a lot unfortunately. [...]. At the moment, I don't have the possibility to shop [there] that often”. At the same time other participants choose to prioritise organic food despite the high prices, such as Daniel who states:

“So yes, organic is still a priority choice, until I can both economically for now and in terms of time.”

Most of foods sold in supermarkets, while conforming to modern lifestyles, hinders, in fact, the trajectory towards sustainable food systems and sustainable nutrition. The response of consumers requires therefore, careful consideration. Beautiful, evenly sized, and perfect vegetables and fruits displayed in supermarkets, although appealing to some interviewees, are criticised or looked upon with suspicion by the majority of participants. Therefore, for example, while Nancie comments:

“Beautiful colours. Looks like very well-kept fruit. Yes, very beautiful!”,

Patrick observes:

“I don't care if it’s nice or big or... that it ‘looks good’ in quotes, rather that it tastes good. So, the sensory characteristics, rather than the visual ones.”

In addition, the requirement for long-lasting produce, by both supermarkets and consumers, prevents the sale of other varieties, such as local ancient varieties of pears which preserve for months, but suddenly ripen in a few days. Some individuals prioritise the social dimension of production, such as Ken who says:

“Rather than choosing organic, I lean more towards Fair Trade.”

Other participants show how they care about animal wellbeing, like Brenda who prefers to purchase from “hens that live happily” or participants who advocate better lives for livestock. On the other hand, some interviewees show no special awareness on the impacts of meat production. Patrick, for instance, says:

“I never paid attention to whether an animal was pasture-raised or intensively farmed.”

The organic label of some supermarkets is not regarded as high quality, while that of other supermarkets is appreciated. It also emerges that contact with nature and the experience gained from growing vegetables

and raising animals increase consumer awareness of food and, therefore, the assessment of product quality. UPFs, such as chips and soft drinks sold in supermarkets, are a temptation for many respondents, despite the general awareness that they are harmful to health.

Consumers' reflections on food and food production also offer a litmus test on the penchant for sustainable food practices. Some participant does not pay particular attention to food and consequently organic food. Others occasionally purchase organic food, but do not make it a priority. At times, even mocking comments towards those who prioritise organic food and food production emerge. Frank for instance says:

"My mum is the fundamentalist; I mean she really is... I would say she buys almost exclusively organic."

Lucy describes a friend who refuses to use any kind of synthetic chemicals in her vegetable garden as follows:

"She is fixated on the natural and what comes, comes. [...]. Too fixated."

It seems that expensive organic food is not the prerogative of the rich and that some wealthier people buy cheap, low-quality products. In contrast, it appears that less prosperous people purchase the expensive organic food at NaturaSì. MTB_16 who is retired and worked as cleaning lady in hospices, says:

"I don't lack money, no. But when it comes to food, I don't lack money at all. If I must spend, I prefer to spend on food."

Lack of trust in organic food reflects the scepticism of part of the population in the region towards organic production methods and, even more, towards biodynamic methods. Media-reiterated information on economy related issues such as inflation or energy prices also contribute to shift the attention and preference of consumers towards the cheapest food. As Erik points out:

"We are bombarded, so at the level of the head there is a focus on the economic aspect, i.e. every day plus 10, plus 10 plus 10, so one unconsciously, when one goes to buy, pays attention to the price, and forgets. For me it is like that."

Sharon emphasises the same aspect. She says:

"Unfortunately, when we put economy in front of all our choices it is not good […] because maybe you make choices that are not exactly right for our body, for our health."

The responsibility of the policy makers, rather than that of the consumers, is thus invoked by Daniel as the solution to change the shortcomings of the system.

3.3 Organic and biodynamic food and food production

The participants exhibit conflicting views on the agricultural methods put into practice in the region, which impinge on several health considerations. Regarding the consumption of apples in relation to the use of pesticides, there are opposing perspectives. This is well described by Nancie who says:

"It is always very difficult to understand. I have a friend who grows apples, and he says they are safe. I have another friend who says that no, they treat them a lot."

One participant report eating treated apples but being used to peel them as he read the poison from pesticides resides on the outside. Another interviewee states that, if she eats apples, they must be organic because those produced with conventional methods are very irrorated. Despite being a biodistrict, a certain scepticism towards organic production pops up frequently. Several people observe that, given the presence of adjacent conventional and organic fields, organic production cannot be completely pesticide-free. However, Rebecca observes:

"But were it not also, you practically for 10 metres in your land have to harvest conventional, normal, even if it is organic because it is treated organically."

Other interviewees question the trustworthiness of the organic vegetables produced and sold locally, since they cannot make sense of the difference between the produce from their kitchen gardens and the size of the organic vegetables in markets. Scandals involving organic producers at the national level has likewise undermined the trust in organic products. The certification system dominated by private certifying bodies rather than state controllers is also a reason for distrust. Daniel observes:

"It strikes me, sometimes, that the certifications, as in many other realities, are often consortia and paid for by the same entities that produce, and so when the controller is also the controlled, let's say this, it is never good."

Regarding EU initiatives to broaden consumer purchases of organic products with the European organic label, Cindy complains:

"[…] Then why do you keep selling me the rest, sorry, or do you keep financing it? [...] Giving funds to intensive breeding, intensive agriculture? […] And then, of course it costs less those things there. But in the meantime, you want me to understand quality? Then you work seriously on it and offer me a viable alternative […]."

The organoleptic quality of organic food is nevertheless acknowledged. Patrick, for instance, states:

"All things being equal, one organic and the other non-organic, I go more willingly to the organic one, precisely, because it is generally also a bit tastier, more flavourful and doesn't have that same need […] to be also very flashy."

MTB_16, on the other hand, thinks that organic food means not nutritious food. Speaking about her daughter who produces berries with conventional agriculture, MTB_16 reports:

"She always tells me 'If I want my strawberries to become beautiful, I have to feed them. If I don't eat, I don't live. Then if my strawberries don't eat, they don't live either'. [...]. For me, organic is not nutritious."

Biodynamic agriculture is often unknown to participants. Cindy has heard of it but finds it "a bit esoteric" and she is not sure if it can be trusted. Patrick is also familiar with organic and biodynamic farming and believes that the farmer's involvement is decisive for the quality of the product. He reflects:

"Afterwards, for both organic and biodynamic, I think it is very important [...] that it is the farmer or the producer who believes in it and does, in fact, what the specifications recommend and that he also puts his own spin on it."

Brenda points out that it would be desirable that organic production transformed into biodynamic agricultural practices, but this entails an increased consumers responsibility in purchasing vegetables and fruit not upon aesthetics and perfection. While almost all participants would accept vegetables that are not perfect in size and shape and would be interested in purchasing a CSA box with produce still covered with soil, it emerges that other individuals in the area require vegetables to be of standard size and sold clean. However, considerations about price emerge like Dave who points out:

"I go to the organic or farmer's market but one moment ... just as I accept that it is imperfect, you have to sell it to me as imperfect."

3.4 The Valle dei Laghi biodistrict

No participant is acquainted with the concept of biodistrict and the vast majority of the interviewees had never heard about the existence of the Valle dei Laghi biodistrict. A few recognise the word and link it to the spread of organic agriculture. Adam had read about a meeting regarding the biodistrict on the notice board of the municipality of Madruzzo a few years ago and connected it to organic farming. He explains:

"From the name I think it is an association that aims to enhance the organic peculiarities of the area at the level of production."

Cindy had read about the definition of biodistrict and defines it as:

"A vision […] of agriculture free of toxic substances, but, however, also something at the tourism level: of enhancing the territory itself, of total well-being in the round, also to give a boost to tourism of a certain type, therefore more sustainable, slower than mass tourism."

Some heard about the term biodistrict when a referendum was held to make the entire Trentino a biodistrict in 2021. Frank interpreted the referendum to mean that organic farming would become compulsory in the

county and considered it unfair, as it predicted that this would increase the price of food for everyone in the region. He comments:

"I heard [about the biodistrict] because of the referendum, although I was not in favour because in my opinion it should be the market that creates the biodistrict and not obligations, because forcing people."

Daniel, on the other hand, was favourable and hoped for a positive outcome.

Some people link the Valle dei Laghi biodistrict with the protests for the reopening of the cement plant in Ponte Oliveti contested on environmental grounds. Different opinions emerge on this topic. Debra thinks that the health concerns do not subsist since filters were added. She also thinks about the people working there. Dave questions if a biodistrict should be there at all given the entire context. He reflects:

"But in addition to the cement plant, which has [...] its own problems [...] I wonder about everything around it, the use of pesticides and so on. I mean, to talk about a biodistrict in this situation is meaningless."

Cindy thinks that having a biodistrict can be used as a form of greenwashing to sponsor an area as attractive without implementing any real change. She points out:

"They had a festival in October here in Pergolese. They told me they had waiters' shirts sponsored by Italcementi, which is the cement factory company. It brings jobs here, 50 jobs. And you don't think about how many jobs it could bring, maybe do something a little more geared towards tourism of a certain type. Agriculture, frankly speaking, I see pesticides left and right at all hours of the day."

However, Erik defends the positive effect of a biodistrict. He explains:

"I see it as a good driving force also to bring forward dynamics and thoughts that can make people reflect beyond the relapse that there is, indeed, an evolution in strong organics."

4 Discussion

In this chapter I discuss the possible meanings and interpretations of the results emerging from the fieldwork by relating them to scientific literature and theory. Each of the following subchapters is intended to answer the three research questions. In doing so, the red thread of the discussion sheds light on the inconsistency of policy on sustainable food systems from different angles. It also reveals the crucial role of the territory and the related cultural and environmental aspects in shaping consumers practices.

4.1 Food practices and sustainable food systems

Although this study provides only a descriptive prospect of a group of individuals, the findings nevertheless unearth the existence of a spectrum of consumer profiles rather than the simplistic duality of *citizen-consumer* and *passive consumer* adopted in policy making (FAO, 2022, p. 239). Despite the limited

number of interviews, two further distinctive behavioural patterns emerge, which were termed *pragmatic consumer* and *tradition-driven consumer*. These categorisations do not originate from the interviewees' self-assessment, but from the researcher's evaluation of their everyday activities. The *citizen-consumer* and *passive consumer* represent, instead, the extremes of this gamut of consumer categories, albeit with more nuanced traits than generally described in literature. Consumers' understanding of sustainability in food systems and the application of sustainable practices are not necessarily interconnected in a consequential manner and the relationship of these variables is illustrated in Figure 9 for the different consumer categories.

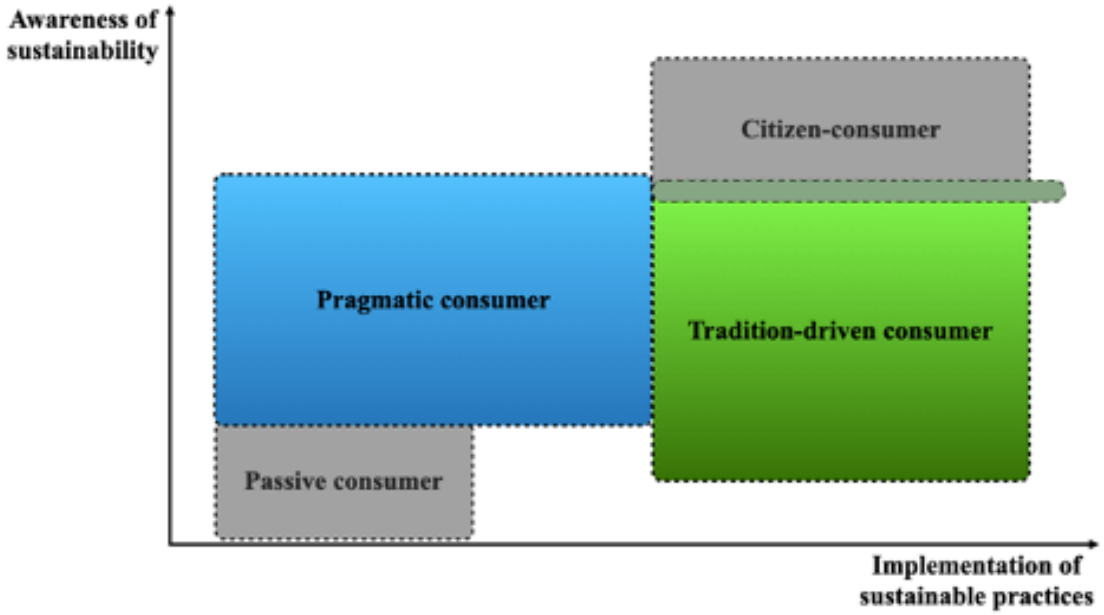


Figure 9: Sustainability awareness-implementation qualitative diagram for the different consumer profiles (diagram by Maddalena Cirani).

At one hand of the spectrum, the *citizen-consumer* or *food citizen* displays a remarkable understanding of several of the dimensions that characterize the sustainability of food systems. While not committed to "the development of a democratic, socially and economically just and environmentally sustainable food system" (Booth and Coveney, 2015, p. 16), the *citizen-consumer* in this territory enacts nevertheless, daily responsible food choices such as purchasing organic food, eating seasonal food, avoiding plastic packaging, cooking, drinking tap water rather than soda or water in plastic bottles, and reducing waste. The level of personal commitment of these individuals is significant, even if, due to life contingencies, they must sometimes compromise on certain aspects.

At the other end of the spectrum, the *passive consumer* is embedded in the global food system and food industry. This consumer profile exhibits low understanding of sustainability in food production and

consumption and tends to source unsustainable food within the industrialised food system. This is revealed, for instance, in greater instinctive inclination to like and to purchase the shining and perfect horticultural products on display in supermarket or to eat in fast food restaurants, such as McDonald's. Other respondents admit taking no special interest in food or attaching no special value to it. Yet, all the interviewees in this consumer category implement some sustainable practices such as cooking, recycling, or reducing the indiscriminate use of plastic packaging and food waste. These habits, therefore, deviate from the careless or unaware choices that characterise the epitome of the *passive consumer* portrayed in the literature. Nevertheless, the stories told by some interviewees indicate the existence of individuals who engage in significantly unsustainable practices and could therefore realign with the typical *passive consumer* category described in literature.

The *pragmatic consumer* is aware about several dimensions of sustainability, including the food system, but pragmatically adapts food provisioning, preparation, and consumption to contextual conditions. In other words, the cognitive understanding of the implications of non-sustainable food practices is not decisive in his or her decision-making process. These individuals, as a matter of fact, decide to implement sustainable food practices, such as purchasing regionally produced meat and organic food or cooking from scratch, whenever possible or desired. However, depending on, for instance, their children's food preferences, own taste inclination or economic constraints, may also buy ultra-processed foods, plastic packaged food or choose low-cost supermarkets. This consumer profile comprises the largest number of respondents and includes the entire age spectrum, including those of working age with dependent children. Some young people in this group still live at home with their parents and must adhere to their purchasing or eating practices, even if they sometimes do not share their parents' values and preferences.

Finally, the *tradition-driven consumer* deploys highly sustainable practices daily, such as cultivating a kitchen garden, sharing food, cooking, preserving summer produce for the winter, keeping compost, or raising hens or other animals. These positive activities have been defined as "counter-handicaps" of living in rural areas (Plessz and Gojard, 2012, p. 1). Some of them produce their own corn flour for polenta and wheat flour. Some raise chickens or other animals which, combined with compost, helps them to reduce food waste. In addition, they cook and make their own vegetables and fruit available all year round, by preparing preserves and jams or freezing them. Food sharing is also common. This consumer profile is almost exclusively populated by retired people. The food practices of the *tradition-driven consumer*, thus, seem to be tightly intertwined with the local cultural heritage and the social sphere. The quasi-self-sufficiency achieved by several of these individuals reproduces, in fact, local traditions, as reflected in the accounts of the custom, until a few decades ago, of cultivating vegetable gardens and raising a cow or pig

for personal meat consumption or to share with friends or acquaintances for a fee. Furthermore, buying local food, such as from Isabella's vegetable shop, is not motivated by environmental concerns, such as emission reduction, nor by "defensive localism" understood as "a conservative orientation of communities wishing to defend themselves against global forces" (Andreola et al., 2021, p. 4). It is rather linked to friendship and trust in the quality of the food produced by a person within the community, apart from the freshness of the product. Some of these individuals cultivate vegetables resorting to conventional or integrated agriculture, although the majority employs organic farming or even rejects the use of any form of synthetic chemicals, preferring less abundant but pesticide-free crops. The adoption of conventional or integrated agriculture to grow kitchen gardens, or travelling many kilometres to buy organic gourmet food indicates that these practices are not necessarily anchored in an understanding of sustainability in relation to food. A few interviewees openly criticise, in fact, the global food system, while most of them express health concerns and scepticism towards industrial food production, as emerged in previous studies (Hughner et al., 2007, p. 8). According to some interviewees, however, the local habit of keeping a vegetable garden often stems from an interest in saving money. When the *tradition-driven consumer* intersects with the *citizen-consumer* the potential for implementing sustainable practices increases compared to the two categories separately, as illustrated in Figure 9.

The four consumer profiles enact food practices that, in fact, highlight the contradictions and limited understanding of sustainability on the part of the current food policy. These policies embody integrative practices developed by statutory regulatory state agencies that "attempt to regulate performances – prescribe rules, prohibit or discourage particular form of behaviour, teach acceptable conduct […] and so on" (Warde, 2016, p. 45). However, while advocating a shift to sustainable food systems, they continue to support the global food system built on, *inter alia*, industrial agriculture, transport infrastructure and plastic packaged UPFs. Given that "it is the context which makes the conduct possible and sensible" (Warde, 2016, p. 115), the material context i.e. the institutionalised food system, should facilitate the same behavioural changes that policy deems necessary. If sustainable *food environment* is defined as "the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food" (HLPE, 2017, p. 28), it appears that the non-sustainable food environment in which consumers are embedded is likely to breed non-sustainable food practices. Firstly, local supermarkets, for instance, appear to hamper consumer possibility to act sustainably due to limited availability of varied, organic, seasonal, local, and plastic packaging-free products. Those interested in organic food have no choice but to head to the expensive NaturaSì food shops northwards in Trento or southwards in Arco, or to the farmers' market in Riva del Garda, or to cultivate their own vegetable garden. Similarly, although several respondents are not sensitive to or aware of the environmental and health

implications of industrially produced meat, others resort to the local producers' market in Trento to buy pasture-raised meat to be sure of avoiding meat of non-Italian origin from supermarkets. Consumers have therefore limited opportunities to carry out real sustainable choices in food provisioning, which indicates how policy fosters the formation of rural areas that can be considered as an *organic-food desert*[10]. Secondly, consumers who try to balance their needs and beliefs on sustainability clash with the non-sustainable rules and praxes of the conventional food supply chain. Hygiene regulation, for instance, blocks those who try to reduce plastic packaging by taking their own boxes to the supermarket. As another example, buying food on offer was cited by one respondent as an opportunity to reduce household spending and food waste in the supply chain, as well as a chance to try some new products that children might like. However, this often involves taking home a lot of plastic. Thirdly, nutrition policy urges consumers to reduce meat consumption and solicits substitution with plant-based diets (FAO, 2022, pp. 238–239; FAO and WHO, 2019) including plant-based meat alternatives (UN Environment, 2019, p. 42,79). "Hybrid look-alikes" such as "burgers or sausages composed of partly meat and partly plant-based ingredients" are also advocated in some study, which situates this consumer choice into ""weak" sustainable consumption" (de Bakker and Dagevos, 2012, p. 891). These policy recommendations have been embraced by several participants who stated having reduced their meat intake in recent years compared to the past. This tendency applies to all consumer categories, albeit more prominent in the food citizen and pragmatic consumer categories, and is in line with other studies confirming the existence of a group of "meat-reducers" (de Bakker and Dagevos, 2012, p. 882). In addition, one interviewee, referring to her brother's eating habits, mentioned his recent switch from meat consumption to plant-based hamburgers. The dietary guidelines to reduce meat consumption, however, should warn that plant-based meat is, in fact, UPF (Ohlau et al., 2022, p. 2), which causes "well-known deleterious health implications for consumers" (FAO, 2022, p. 26). Instead, an explicit and strong emphasis should be given to "a diet of plant-based foods such as nuts, seeds, and legumes, which are rich of protein and many other nutrients but less industrially processed" (ibid., p. 11). Furthermore, the often reductionist approach and guidelines adopted by policy do not distinguish between harmful industrial intensive meat production and the regenerative functions of pasture animals under proper grazing management (Teague and Kreuter, 2020). Several interviewees state that they prefer Italian products and, as far as meat is concerned, feel reassured that Italian origin equates quality. Another consideration concerns policy guidelines on reducing meat consumption in schools. Legislation on food spur on "school scheme to enhance its contribution to sustainable food consumption and in particular to strengthen educational messages on the importance of healthy nutrition, sustainable food production and reducing food waste"

10 By modifying the definition provided by the HLPE report, an "organic food desert" can be defined as a "geographic areas where residents' access to [organic] food is restricted or non-existent due to the absence or low density of [organic] "food entry points" within a practical travelling distance" (HLPE, 2017, p. 27).

(European Commission, 2020, p. 13). Although waste management in public facilities has sometimes been praised for being more effective than household habits (Plessz, 2016), some participants complained about the high amount of food waste in schools. They accuse the poorly prepared meat substitutes in school meals that, rejected by children, result in large amounts of waste which, moreover, conveys a counter-educational message for children. Conversely, household waste management by individuals and families in the area through meal planning, limiting purchases, consuming leftovers, composting, or raising chickens enable waste to be reduced and recycled effectively by feeding the soil or animals. Families with dependent children are, however, more prone to food waste. It was argued that "without an enabling environment it is very improbable that initiatives promoting sustainable food consumption will yield much effect" (de Bakker and Dagevos, 2012, p. 890). The regulations and guidelines described above are not developed upon a systemic analysis and a process of anamnesis to identify the root causes of the non-sustainability of food systems, but through simplistic interventions grounded on a reductionist approach. They provide, in fact, only partial, incremental, or even obstructive modifications of the industrial food system, rather than facilitating radical and far-reaching structural changes towards sustainability. In this sense the above examples demonstrate the weakness and shortcomings in driving sustainable consumption of institutionalised integrative practices through performance regulation, in contrast to the greater effectiveness of traditional local practices.

Conversely, sustainable food practices enacted by the *tradition-driven consumer* deviate from technological solutions and market logic and, instead, arise from the reproduction of customary habits, have no place in current policy. They range from production to preparation, consumption and sharing of food. The habit of cultivating a vegetable garden encompasses a series of relevant sustainable practices which affect, for instance, biodiversity, climate change, and soil and human health. Cooking from basic ingredients, as reported by all consumer profiles, including the *passive consumer*, also falls within these traditions. Cooking skills are widespread among participants regardless of gender and age, although women are slightly more represented, as opposed to the growing number of deskilled consumers, unwilling or uncapable to cook due to "longer working hours, more working food providers […] and small households" (Booth and Coveney, 2015, p. 23). Since "home cooking or 'cooking from scratch'" within the household is regarded as "the epicentre of food democracy in action" (Booth and Coveney, 2015, p. 22) this consumers' habit represents a pivotal pathway towards sustainable diets and food systems. From this lens, the widespread habit of eating also holds special value. Food sharing, embedded in the social context and tradition, is common. While distrust and anxiety accompany gifts of food in the context of London (Plessz, 2016), in the biodistrict, sharing horticultural products with families, friends, neighbours, and acquaintances, particularly during the abundant summer vegetable production, conveys meanings of love, care,

appreciation, or simply neighbourly relations beyond the simple exchange of goods. In this sense, "the consumer, as reproducer of culture, has epistemological access to a world beyond the commodity fetish. […] the world of meaning in which things are embedded, in which things and people interact" (Goodman and DuPuis, 2002, p. 14). Family-based meat production practices based on tradition also appear more sustainable than the current production system. Waste management provides another example of tradition-driven sustainable practices in the form of symbolic meaning, where respect for food translates in a sense of discomfort and even contempt towards food waste. Several strategies are used to prevent it. Those who own some land tend to recycle leftovers in compost or give them to hens. Among those who do not have land, some, after carefully planning weekly menus, prepare meals and consume them accordingly, others buy a minimal amount of food to prevent it from accumulating and eventually spoiling in the refrigerator. It is common to eat leftovers. One interviewee explains that, when alone, he puts up with eating even passed salad, that he calls "humid salad", which confirms how consumption of leftovers is linked to the company and formality of the meal (Warde, 2016, p. 64). These sustainable practices are rooted in tradition rather than stemming from policy and, as such, are "'embedded within prevailing organisation of practices which in turn relate to the collective development of what people take to be 'normal' way of life'" (Plessz, 2016). Framed as tradition rather than an act of agency against the corporate food system, kitchen gardens and orchards offer a local alternative for production and consumption, that could provide mountain territories with the ability to survive against the encroachment of the global agrifood market (Brand and Pettenati, 2022, p. 2). As opposed to this dominant model, these consumers produce and consume a considerable share of their food, and therefore, reproduce a world in which **"**producer cultures and consumer cultures are not 'purified', separate categories of social life but rather mutually constitutive" (Goodman and DuPuis, 2002, p. 9). As "the person incorporates aspects of the environment" (Warde, 2016, p. 114), these practices reconstruct the socio-cultural context. This whole set of practices is not guided by thoughtful, deliberative decisions against the dominant agribusiness, but rather by "mental processes which are automatic, intuitive and emotion driven" (Warde, 2016, p. 113) b tradition. This cultural environment of inherited and transmitted knowledge, habits and social relations, in which food implicitly constitutes the hub linking land, family and friends, contributes to culture, viewed as "the interactions of vast amounts of information, a restricted number of mental schemata […] and an external or objectivated symbolic universe" (Warde, 2016, p. 113). These practices fall under the umbrella of *quiet sustainability* in that they generate environmental or social benefits beyond direct or indirect market transactions, although their direct contribution to environmental or sustainability goals has been overlooked by policy-makers (Smith and Jehlička, 2013, p. 28). "Cultures of sharing, repairing, gifting and bartering characterise *quiet sustainability*" (ibid.). These practices represent a declination of alternative food systems in terms of providing local, seasonal, affordable nutritious food through environmentally sustainable production methods, although the conscious and

deliberative intention "to create change in all levels of the food system" (Campbell, 2004, pp. 345–346) is missing. Policy has therefore disregarded instead of acknowledging and accommodating this set of practices. Since the different declinations of *quiet sustainability* risk being lost without an academic and financial effort to preserve them, policy should urgently create the context to sustain these practices and support, document, disseminate and facilitate their implementation.

4.2 Enablers and barriers to sustainable food practices

Several factors contribute to forming the external *food environment* which is conducive to the implementation of sustainable food practices, as discussed in paragraph 4.1. In particular, sustainability of food practices depends on context-dependent determinants that involve the "temporal, spatial, and modal facets of the everyday" (Forno et al., 2022, p. 203). Some of these variables are qualitatively illustrated in Figure 10.

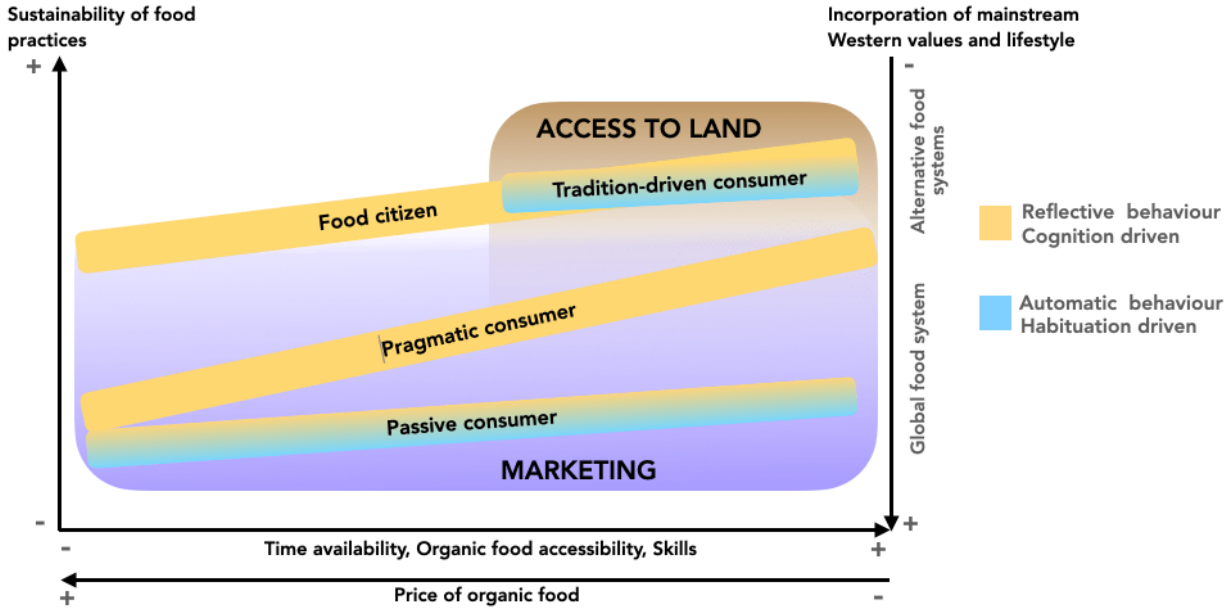


Figure 10: Relevant factors affecting sustainable food practices (diagram by Maddalena Cirani).

In addition to access to land and exposure to marketing, affordability of organic food, time availability, skills and consumers' worldviews emerge as particularly relevant. First, land availability represents a prerequisite for implementing *quiet sustainability*, such as growing a vegetable garden. Lack of access to land, therefore, forces local consumers interested in organic food to dispose of financial means to buy the more expensive organic foods in supermarkets and specialised stores, as well as more time to procure them in the distant specialised grocery stores. Second, exposure to marketing through advertising or sales strategies in supermarkets tends to spark non-sustainable food practices, particularly for consumer

categories ingrained in the global food system, that is the *passive consumers* and individuals less aware of sustainability within the *pragmatic consumer* category. Therefore, aesthetically appealing vegetables in supermarkets from conventional agriculture, such as big, shiny apples tend to attract these consumers, as shown in previous studies that highlighted the reluctance of certain consumers to accept the visual imperfections often present in organic foods (Hughner et al., 2007, p. 11). Although marketing targets in fact all consumers and tailors sales strategies to different types of consumption (Dubuisson-Quellier, 2022, pp. 12–14), organic food stores continue to be a more sustainable choice. Therefore, through "branding, labelling, advertising, packaging and merchandising" as well as variety, novelty, and availability, marketing technologies not only "govern consumption in orienting consumers' choices" but also shape their "value regimes" in food selection (ibid., pp. 9-10). This influence on consumers' disposition to purchasing confirms the importance of external environment in non-deliberative decisions (Warde, 2016, p. 111), since exposure to "structure of consumption" orients consumers towards certain products (Dubuisson-Quellier, 2022, p. 9,11). Third, affordability of food is confirmed to affect sustainable food systems. Affordability of food includes, on the one hand, market price in relation to other household expenses and income, and, on the other hand, the time and effort of those who prepare food (FAO and WHO, 2019, p. 25). Greater availability and lower price of organic foods seem to foster more consumption of these foods, as proved in previous studies (Hughner et al., 2007, pp. 10–11), thereby increasing their market share, with consequent environmental benefits.

Fourth, time availability arises as a critical prerequisite for sustainable food practices for all consumer profiles. With respect to the consumption of UPFs, for instance, although consumer preference for convenience food has been correlated with lack of culinary skills (HLPE, 2017, p. 32), time scarcity surfaces in many interviews as a bottleneck and recurring refrain. Unlocking time may, in fact, potentially increase the time dedicated to culinary activities such as the time-consuming preparation of veggies. This seems reflected in studies on the impact of the COVID pandemic which indicate how "the deceleration of everyday activities became a source of development toward sustainability" (Forno et al., 2022, p. 210). Families with children, for instance, could elaborate recipes to prepare foods that their children find more palatable, reducing the purchase of processed foods. Other consumers might decide to buy fresh salad and avoid the one in plastic bags, or they would have the time to procure organic food. For people in the position to grow vegetables, the extra time would also be an opportunity to grow a vegetable garden, partially shifting them to the *tradition-driven consumer* category. Indeed, the highly sustainable practices of the *tradition-driven consumer* require time, which may explain why this category is populated mainly by retirees. This is openly expressed by Erik, who regrets not being able to devote more time to growing a kitchen garden, rearing hens, or cooking, unlike his mother who can be self-sufficient because she is retired

and has time. The benefits of increased time, therefore, could potentially expand sustainable diets and several other sustainable practices. The current economic system entrenched in economic growth, however, supports lifestyles framed in pressing working hours which leave little or no space for implementing sustainable practices. Policy makers should, therefore, work towards freeing up time by restructuring the economic system by reducing working hours to secure human needs and well-being (Gómez-Baggethun and Naredo, 2015, p. 393; Hickel et al., 2022, pp. 400–401). This would also expand the meaning of sustainability to include human well-being, as contended by Seghezzo (Seghezzo, 2009). Nevertheless, it would be misguiding to equate increased time availability with implementing sustainable food practices in that "one aspect of the differences in the performances of a given practice is the degree of commitment to the practice" (Plessz and Gojard, 2012, p. 6). In fact, it was found that both commitment and time availability determine the implementation of sustainable practices since "no disposition is sufficiently strong to completely outweigh time constraints but also […] time constraints alone cannot explain differences" in the implementation of a practice (ibid., p.20). At a higher level, commitment to enact sustainable practices seems to link to consumers' values and an act of deliberation. Albeit often true, in some cases, however, the implementation of sustainable practices may also arise from habituation. Commitment seems to refer to consumers driven by conscious decisions i.e. those who act within the *orthodox model* of behaviour based on "voluntary decisions and conscious acts" (Warde, 2016, p. 100). Conscious decisions rooted in the critique of the global food system mould, for instance, the category of the *food citizen*, who is committed to sustainable practices. The part of the *tradition-driven consumers* prompted to reproduce tradition, also acts voluntarily to produce food according to tradition. Commitment might therefore exist, but towards tradition. Both groups operate within alternative food systems. The *pragmatic consumer*, in contrast, even if intentionally deliberates based on contextual convenience does not exhibit commitment and oscillates between the global or alternative food systems. On the other hand, the other consumers seem anchored on the *portfolio model* characterised by "habituation, practical reason, routine and convention, limited deliberation" (ibid., p. 150). They are, therefore, not committed to sustainability, but inclined to reproduce automatic behaviour and exhibit "a strong tendency […] to repeat their actions when in similar situation" (Warde, 2016, p. 104). The *passive consumer* either supports the current food system or is unconsciously stuck in it. In both cases these individuals sit in global food system without commitment to adopt sustainable practices. By contrast, the part of *tradition-driven consumers* unconsciously steered by tradition implement sustainable practices but without commitment to sustainability.

Finally, in this context, ontological perspectives seem to provide alternative explanations for individual food practices, more than deterministic causalities of gender or wealth. This confirms the importance of

modality in the formation of practice, intended as "the individual and collective agentic capacity" (Forno et al., 2022, p. 204) i.e. the underlying "why and how practices are enacted" (Forno et al., 2022, p. 210). For instance, although single men have been reported to be less inclined than single women to buy organic products and other prescribed healthy food (Plessz et al., 2016, pp. 10–11), the educated single male participants in this study care about healthy food as part of a healthy lifestyle. As a result, they have a propensity to buy organic products, cook from scratch, and some even make sourdough bread. Similarly, it is acknowledged that wealthy people are more likely to buy organic food (Forno et al., 2022, p. 205). This aligns with policy assertions that, as "nutritious foods are more expensive than energy-dense foods" (FAO and WHO, 2019, p. 25), "some consumers may be more likely to purchase lower-cost foods purely for budgetary reasons" (HLPE, 2017, p. 32). However, in this study, respondents from affluent social classes and high professional background show, in fact, no special inclination towards organic food and prefer often quality-price ratio in their food procurement. Lack of knowledge of the implications of the global food chain, logistical convenience, or perceived better quality of certain products may explain this behaviour. A further explanation, however, can be traced back to people's worldviews emerging from different contexts. A cue arises from an interviewee's observation that affluent people with luxury cars and in a position to afford expensive, nutritious, and healthy food buy, instead, low-quality products in supermarkets, while less affluent people with apparently lower financial resources purchase the expensive organic food of NaturaSì. This reflection accords with another interviewee's comment that some people care more about the quality of the oil to fill into their cars than the oil they eat. The apparent contradiction between consumers' financial capacity and the purchasing of organic food can be unravelled by their value system, rather than a mechanistic divide between high- and low-income individuals. This value system grants full legitimacy to conventional food production and conveys low awareness or ascribes little or no importance to healthy and sustainable foods produced by organic and biodynamic methods. The mockery towards those who reject the use of pesticides to grow vegetables, or those who consume only organic food, branded as "organic maniac", "fundamentalists" or "fixated" can similarly be situated within the same worldview. The comments of Linda, a medical doctor, such as "all those ecological things interest us relatively" or "I cannot get caught up in this ideology of organic", echo this attitude which relegates ecology and the distrust for synthetic chemicals to irrelevant topics. The stories reported by some students from the Agricultural Institute of San Michele all' Adige, recounted by a couple of interviewees, about some teachers who portray biodynamic agriculture as "witchcraft" or limit their teaching to cattle or monocultures of apples and vines, seem to fall into the same framework. This framework exposes the general lack understanding of, on the one hand, the benefits of the systems approach offered by organic and biodynamic practices, and, on the other, what have been termed the long-term environmental and social impacts of the classical reductionist approach in agriculture (Shiva, 2016, pp. 21–22). The appreciation of a meadow as

"nicer" than a kitchen garden can also relate to the view of nature as more aesthetically appealing if not connected to family food production. This multitude of epithets, comments, sentences, and epistemological positions surrounding organic and biodynamic production, constitute scattered, fragmented, heterogeneous and unrelated sources that seem to reveal the existence of a discourse that translates into the worldview of these people. According to Foucault (Foucault, 2002), *discourse formation* emerges "whenever one can describe, between a number of statements, […] a system of dispersion, whenever, between objects, types of statement, concepts, or thematic choices, one can define a regularity (an order, correlations, positions and functionings, transformations)" (Foucault, 2002, p. 41). The underlying discourse seems rooted, on the one hand, in modernity "as a progressive movement marked by the increasing mastery of nature" and whose regime of knowledge is anchored in "universal science" claiming "to be able to get to the Truth while disqualifying all other ways of knowing as beliefs" (Blaser, 2013, p. 555). The comments that relegate organic and biodynamic agriculture to a lower position in the ladder of power can be positioned in this frame. On the other hand, this discourse also rests on "techno-economic arguments and cost-benefit analyses" (Geels, 2014, p. 34), including the use of "economic problems to argue for a weakening of social and environmental policies" (Geels, 2014, p. 33). This stance celebrates technological advances that translate in the narrative of the supremacy of conventional agriculture over nature through technology (Shiva, 2016, pp. 23–24). Innovation is intertwined with technological development, without recognizing the new and comprehensive definition of food systems innovation as a process that engenders "changes in practices, norms, markets and institutional arrangements, which may foster new networks of food production, processing, distribution and consumption that may challenge the status quo" (HLPE, 2019, p. 15). Additionally, current regulation on food production is embedded in the notion of *sustainable development* (European Commission, 2020), that promises social and environmental sustainability through economic growth, trade liberalisation and technocracy (Gómez-Baggethun and Naredo, 2015). This is despite the causality relationship between economic growth and loss of biodiversity, high material footprint, and GHGs emissions (Otero et al., 2020). As individuals "start to internalize a specific discourse", they "begin to structure their thoughts and acts on the basis of it" (De Cock et al., 2016, p. 2), and begin to behave on a set of unspoken, unquestioned, societally agreed set of principles, values, behaviours and beliefs, which are reminiscent of Bourdieu's *doxa* (Grenfell, 2012, p. 56,58,68). Therefore, conscious or unconscious incorporation of the techno-economic arguments, including what was defined as "the corporate agri-chemical intensive agriculture" (Anguelovski, 2015, p. 194), determines the attitude towards food. Discourse formation originates from the hegemonic regimes of truth produced by every structure of power (Foucault, 1980, p. 131). In Western ontology, the regime of truth is hinged in Western episteme, defined by the "scientific discourse and the institutions which produce it" and disseminated through schools and media (Foucault, 1980, pp. 131–132). Thus, support for technocratic discourse from universities endows it

with high status, particularly from respondents trained within dominant disciplines and institutions, such as physicians, engineers, agricultural technicians, or professors. As a result, distrust and disbelief spill over other worldviews, such as organic and biodynamic production methods or concern about pesticide exposure. This attitude may justify the more widespread acceptance and adoption of prescription food by the upper educated rather than the lower classes (Plessz et al., 2012, p. 20). It can also explain why a segment of consumers in Italy, including with a medium-high culture, seems not yet to have understood the guarantees and environmental benefits of organic food (Giuliano and Meo, 2022, p. 25).

It has been argued that dominant discourses are crafted by policymakers and incumbent firms "to shape not only *what* is being discussed (thus setting agendas) but also *how* issues are discussed" (Geels, 2014, p. 29). However, "discourses are both constitutive of social practices and institutions […] and at the same time constituted (i.e. re-produced or transformed) in the enactments of these practices and institutions" (De Cock et al., 2016, p. 2). Thus, discourses can mould people food-related disposition and product choices as well as policy regulation but, on the other hand, people agency or habits, such as cooking or cultivating a kitchen garden, can conversely spark new discourses on food. Therefore, *food citizen* and *tradition-driven consumers* may potentially foster a discourse change and shape new worldviews.

4.3 Organic and biodynamic food, food production and the biodistrict

Both supportive and distrustful opinions on organic agriculture and products emerge within each consumer profile. Those who support organic production tend to work in the sector. Their opinion could therefore be influenced by first-hand knowledge and the implementation of the regulations, but also on their personal economic interest. Consumers who do not trust organic production, by contrast, tend to be either local inhabitants who observe agricultural practices as "spectators", without being farmers, or people familiar with the topic through informed acquaintances or through readings. Scepticism towards and distrust in the organic certification system is often mentioned. This view also emerges in other studies that ascribe this attitude to consumers' unawareness of the "certification rules and the meaning of the logo" of European Organic Agriculture (Guareschi et al., 2020, p. 3). On the one hand, the doubts concern the management of risk edges established by the statutory law, which ensures pesticide-free products even in the case of borders with conventional agriculture. Although legislation bans organic labelling of produce from areas comprised within a specific distance from adjacent conventional production, the all-weather spraying of pesticides undermines the confidence that the poison remains confined without contaminating the approved organic products. The ease of accidental contamination of organic production is also recognised as a weakness of the 2016 PSN (MIPAAF, 2016, p. 11). On the other hand, suspicion of conflict of interests between the

auditor and the audited firm casts a shadow over the trustworthiness of the organic certification system in terms of, for instance, prior agreement on the date for control visits or the procedure of the inspection. Literature confirms how this phenomenon, defined as "auditor shopping" (Zezza et al., 2020, p. 2), can impinge on consumer trust in the certification system (Hughner et al., 2007, p. 11; Zezza et al., 2020, p. 4,13). The scandal of a renamed organic poultry farm, recently caught in cheating by not following the rules, corroborates that there is a reason for this lack of trust. Contrasting opinions are expressed depending on whether production systems are small and large. Some think, for example, that large production facilities are more likely to be controlled and think they are safer, while other people consider them to be at high risk of corruption. Regarding the certification system for biodynamic farming, (Demeter, Biodynamic®[11]) provided by Demeter International, "a network of individual certification organizations in 45 countries worldwide" (Beluhova-Uzunava and Atanasov, 2017, p. 42), this is perceived by some interviewees as even less trustworthy than the organic certification system. This is because it is defined, regulated, and managed internally by the Biodynamic Federation Demeter International. Furthermore, biodynamic farming is generally unknown to most of my participants. Those who recognise it are either unfamiliar with the related agricultural practices and management or express doubts about biodynamic farming defined, for instance, as "esoteric". This contrasts with other research which found that "consumers tend to respond positively" to biodynamic produce (Jaeger et al., 2023). The doubtful attitude, however, is likely to reflect the scepticism of part of the scientific community towards biodynamic farming (Beluhova-Uzunava and Atanasov, 2017, p. 40). This transpires even though scientific studies confirm the systemic benefits of this agricultural method (Brock et al., 2019) and despite the conspicuous, although often not peer-reviewed, number of articles on biodynamic practices (Beluhova-Uzunava and Atanasov, 2017, p. 45). The mistrust towards alternative production methods other than organic was also voiced by a senior AIAB official who, when contacted by telephone and asked, among other things, his opinion about agroecology, he described it as "nebulous" ("nebulosa"). Contrasting views also emerge with respect to the health implications of consuming organic versus conventional food (Mie Axel, 2017), where the *food citizen* and *tradition-driven* categories appear more aware of the possible health risks and carefully select organic food, while those in the *passive consumer* and the *pragmatic consumer* categories seem unaware of or show no concern in this regard.

These attitudes clash with the EU's goal to increase organic agriculture through the "Farm to Fork" strategy and to encourage consumers' purchasing of EU-produced organic food, as in the recent call to "promote

11 The Biodynamic Federation Demeter International is the only agricultural association that has built up a network of individual certification bodies for biodynamic farmers worldwide. The description of the Biodynamic Federation and the current certification standards are available at https://demeter.net

high quality and sustainable EU agri-food products" (European Commission, 2022). Consumers often feel distrust towards the bipartisan and inconsistent policies of the EU and the Italian state, as Cindy explained well:

"[…] Then why do you keep selling me the rest, sorry, or do you keep financing it? [...] Giving funds to intensive breeding, intensive agriculture? [...] And then, of course it costs less those things there. But in the meantime, you want me to understand quality? Then you work seriously on it and offer me a viable alternative, and the rest you slowly abandon or, in my opinion, it's just a façade there too."

Literature highlights that high prices and lack of confidence in the absence of pesticides in organic products constitute a barrier to the purchase of these products by Italian consumers (Giuliano and Meo, 2022, p. 24). Transnational policy, moreover, calls on states to remove "subsidies for degrading practices while giving incentives for sustainable food production methods, or managing multi-functional landscapes including wild species" (HLPE, 2019, p. 100). Yet, although the latest CAP somewhat increases the support for organic farming and agroecology-informed practices through the eco-schemes (European Commission, 2021), member states' agricultural legislation often facilitates protectionism and the *status quo* of current agricultural interests, particularly when sectoral lobbying and party ideology intertwine (Malang and Holzinger, 2020, pp. 758, 760). This way, the incumbent economic interests are protected at the expense of sustainable transition pathways (Geels, 2014, pp. 28, 34–36), including sustainable production systems which promote care for the environment, ethics and consumer health. It follows that "the sustainability of an agroecosystem is not only the result of a series of physical and biological properties, but also a reflection of power relations" (Gonzalez de Molina, 2019, p. 59). Thus, limited effort is dedicated to ensure "that healthier foods are cheaper and less healthy foods are more expensive […] to stimulate consumers to purchase certain foods over others" (HLPE, 2017, p. 30). Additionally, politics continue to fund intensive production systems which perpetuate the market of cheap, conventional products. In doing so, and expecting consumers to switch to organic, the onus of changing the food system is put on the consumer while politics is relieved of the responsibility to deliberate on the regulation needed to initiate the urgent and necessary changes.

Against this setting, biodistricts play a privileged role in creating the conditions for a change in food systems, and potentially lead the transition pathway. They also offer an alternative solution that, as advocated by some scholars, moves away from "'upstream' large-scale technologies" in favour of those "on the ground", i.e. through "interactions between businesses, citizens, politicians and social movements" (Geels, 2014, p. 32). The territory of the Valle dei Laghi biodistrict is striking on the one hand for the dominance of monoculture of vineyards and apple orchards, and, on the other hand, for the scarcity of food production, particularly organic and biodynamic. This cultivation arrangement heralds the transformation that affected

rural areas after World War II. In the second half of the 20th century, a process of linearization of territorial metabolism occurred where urbanisation, industrialisation, and technological advances intertwined with the global food system, resulting in the social and spatial distancing of rural areas of production from urban regions as privileged spaces of consumption (Buyck et al., 2021, pp. 321–322). In recent decades, however, rural areas and many mountain valleys have increasingly lost their characteristic qualities as spaces of food production and shifted to a gradual specialisation in "agrifood production for external or tourist markets" within the liberal-production system (Brand and Pettenati, 2022, p. 2). The monoculture of wine and apple production in the Valle dei Laghi biodistrict falls into this context and, albeit these local products represent a "cultural heritage and element of local identity" (Basile et al., 2016, p. 9), this system fails to meet the expectations that biodistricts should safeguard the territory, biodiversity and the landscape (ibid., p.11). Although organic agriculture favours environmental protection more than conventional agriculture, the biodistrict, rather than fulfilling "the function of putting the EU Biodiversity Strategy into practice" (Mazzocchi et al., 2021, p. 21), is framed within the Trentino production structure, oriented towards putting "economic sustainability before the environmental one" (Andreola et al., 2021, p. 16). Nevertheless, the biodistrict of the Valle dei Laghi has the potential to become an "agroecology-territory" defined as a place "engaging in a transition process towards sustainable agricultural and food systems" (Wezel et al., 2016, p. 135). The specialised agricultural system of the region is s not incompatible, in principle, with an agroecology-territory if sustainable agricultural practices are deployed (ibid., p. 136). The shift to agroecology territories, however, implies the adaptation to sustainable agricultural practices, the conservation of biodiversity and natural resources, and the embeddedness of food systems (ibid., pp. 135-140). In the Valle dei Laghi biodistrict, by contrast, sustainable agricultural practices are currently implemented only in a minor part of the territory, the landscape is uniform and marked by monoculture, and sale of local food in supermarkets, as well as community supported agriculture (CSA) systems, are nearly absent. Nevertheless, the widespread use of individual kitchen gardens among the local population could provide an unexpected but favorable version of agroecology-territory. Kitchen gardens offer, in fact, high agro-biocultural diversity, food security and increased resilience (Mattalia et al., 2018). The biodistrict, with the support of a university specialised in agroecology, such as the Sant'Anna School of Advanced Studies in Pisa or the School of Gastronomic Sciences of Pollenzo, could avail of this fertile civil society fabric to disseminate knowledge on agroecology-informed agricultural practices to the local community, provide extension services and offer a space for knowledge creation and sharing. Since awareness campaigns have proven ineffective in sustaining changes in sustainable food systems, as opposed to "sharing information and knowledge across networks, addressing social problems and co-producing solutions among communities and researchers" (HLPE, 2019, p. 103), this type of activities would align with policy requirements at the transnational level. The biodistrict, through the collaboration between

public administration and organic and biodynamic producers, could also work towards the conservation of biodiversity through, for instance, the management of green networks such as hedgerows, vegetation strips and crop diversity. Such a trajectory requires, however, an enlightened and knowledgeable policy, capable of envisioning this future and willing to invest in it over and above contingent obstacles and short-sighted interests. In this sense, the biodistrict could play a privileged role in supporting the creation of local knowledge and the deployment of innovative sustainable practices, beyond the old paradigm of dominant technocratic methods perpetrated by mainstream agricultural institutes and scientifically proven to be detrimental to the environment at large. Biodistricts could, therefore, also offer the arena for the implementation of agroecology, which, as a powerful tool for "a massive redesign of the economic structure that govern our food systems" (Gonzalez de Molina, 2019, p. 56), undermines regime actors and, therefore, has often been "side-lined or marginalized on the policy agenda" similar to other potential transition pathways (Geels, 2014, p. 31).

5 Conclusions

The aim of this master thesis was to explore how the daily food practices of consumers in the Valle di Laghi biodistrict and their understanding of sustainable food and food production relate to and affect the pathway towards sustainable food systems. It also set out to investigate the conditions which favour or hinder this trajectory. An insight into consumers' conception of and relationship with organic and biodynamic food and food production was also pursued. The consumer categories of *food citizen* and *passive consumer* widely described in the scientific and policy literature, have been integrated with the two novel additional profiles defined as *pragmatic consumer* and *tradition-oriented consumer*. The former characterises individuals who, albeit with a certain understanding of food sustainability, adapt their food related behaviour to contingent needs or desires. The latter, on the other hand, involves people implementing practices rooted in tradition and the social fabric, such as growing a vegetable garden and sharing food, and are, therefore, well within the concept of *quiet sustainability*. Automatic rather than deliberative behaviour impacts strongly on actions and choices, especially of *passive consumer*, who appears to be more influenced by marketing, and some *tradition-oriented consumers*, who reproduce tradition. All categories of consumers implement both sustainable practices, such as cooking from scratch, reducing plastic packaging and food waste, and non-sustainable practices such as purchasing non-sustainable products. The *food citizen* and the *tradition-driven consumer*, however, employ often practices that promote sustainability in food systems in their daily lives. Conversely, the remaining consumer profiles tend to engage in practices that hinder this conversion. By purchasing UPFs or produce grown and distributed in unsustainable ways, or by eating industrially produced meat from corporate mass chains, in fact, they increase the market for these

products, halting the transformation of food systems. The results suggest also that certain conditions, such as access to land and exposure to marketing as well as the price and supply of organic food and time availability, affect the implementation of sustainability. Notably, it emerges that consumers' acceptance and incorporation of the global industrialised food system is reinforced by the entrenchment of their worldview in the Western paradigm of modernisation; grounded in the primacy of science, technocracy and an economic system intertwined with economic growth. Although the research was conducted in a biodistrict, contrasting opinions about organic and biodynamic food and food production exist, and doubts are expressed about, for instance, risk edges and the reliability of the certification systems. Furthermore, only a limited number of participants are familiar with the Valle dei Laghi biodistrict. Nevertheless, the biodistrict potentially provides political, economic, cultural, and environmental opportunities to lead the way towards sustainable food systems. For instance, it could facilitate the repositioning of this rural area, currently dominated by monoculture for the global market, as a locus of food production also through the vegetable gardens cultivated by the local community. The findings reported here also confirm the two-facedness of politics; urging a shift in consumer behaviour while implementing ineffective legislative changes that preserve the *status quo* and foster power actors. This study was restricted to the most isolated municipalities in the Valle dei Laghi biodistrict, namely Madruzzo and Cavedine. Moreover, as a case study, the work is not intended to provide generalizable results but a cross-section of a specific and limited reality. Notwithstanding the relatively limited number of interviewees, this work offers valuable insights into local dynamics and opens up the possibility for policy improvements. At the end of the thesis work, a presentation of the findings was held in Sarche, at the Toblino Winery, at a conference organised by the biodistrict. Participants at the conference included representatives from Italian universities, one of which is strongly involved in Agroecology programmes, the representative of the Chianti biodistrict, producers using agroecology-informed agricultural methods and students. The work helped to gather different stakeholders and to start possible collaborations for knowledge sharing and establishing new pathways. A natural progression of this work could be a study that involves a sampling of the population to offer the frequency of different behaviours within the local society. The extension of the study to the Vallelaghi municipality could also complement this work and offer a glimpse of the entire territory of the biodistrict. Involving civil society in understanding and implementing agroecology-based practices could also represent innovative research to test the relationship between hands-on activities in agricultural practices and sustainable behaviour in food systems.

6 Recommendations to policy makers and the biodistrict

Policy makers can lay the foundations for greater sustainability of food systems, at times in collaboration with the biodistrict. Some recommendations have been extrapolated and summarised below.

1. **Organic certification**

To increase sales of organic products, consumers must be able to trust the labels "organic" and "biodynamic". Better standards for certification bodies need to be developed. This would require a number of changes including; unexpected control visits, regulated number of prove samplings, and rotation of the certifying bodies, as proposed in literature (Zezza et al., 2020). Regulation of risk edges should also be improved. This could entail a drastic restriction on the spraying of synthetic chemicals by conventional farmers in the vicinity of organic and biodynamic crops and under certain weather conditions.

2. **Subsidy system for agriculture**

Subsidies affect the price of food. The high price of organic and biodynamic food has emerged as decisive for the food choices of a considerable segment of consumers. To orient consumers towards purchasing organic and biodynamic produce, thus, these products should be priced, at least, comparable to conventional products. A more efficient food pricing that reflects the externalities linked to food production would however be fairer and more effective. Thus, given the negative health and environmental impacts of conventionally produced food, its price should be based on the "polluter pays" principle. Paying subsidies on farm labour, rather than on the "per hectare" basis, for instance, would support labour-intensive organic and biodynamic farms and help to reduce the price of organic and biodynamic products, in addition to populating rural areas and increasing biodiversity.

3. **Support programmes for "quiet sustainability"**

The food practices devised by the *tradition-driven consumer*, such as having a kitchen garden or food sharing, stand out for their high degree of sustainability. These practices should be recognised and supported by policy through, for instance, specific activities. The biodistrict, by operating at a local level, is particularly suitable to bridge policy and consumers. Courses on sustainable agricultural practices informed by agroecology could be organised as an educational outreach to consumers, but also to stimulate the sharing of knowledge about personal experiences or seeds of local or interesting varieties. A further by-product of this activity would probably be greater social cohesion. The biodistrict could coordinate such courses and offer, for example, the location for demonstration plots. This activity, rather than superficial and volatile information based on labelling, has the potential to foster deep understanding and awareness of sustainability at the individual level, on topics such as soil health and biodiversity, but also healthy food and diets.

4. **School canteens**

Policy leveraged the reduction of meat consumption through alternative meals in schools. However, the menus implemented by the schools are, according to some participants, not appreciated by children who refuse to eat ostensibly unappetising lunches. In practice, the schools described by participants opt for substitution of meat by vegetable products, but the change is not supported by care in the choice of recipes. This results in hungry children, food waste and a counter-educational message for children. Policy should arrange that cooks in school canteens receive support from experts to cook substitute, palatable recipes.

5. **Elimination of plastic packaging**

Plastic packaging is regarded by many participants as unnecessary and polluting waste. They often complain about how quickly the plastic recycling container is filled immediately after shopping at the supermarket. Changing the environment in which consumers operate affects their behaviour. Policy should thus require the elimination of plastic packaging and favour other solutions such as paper, cardboard, and the use of own packaging.

6. **Education in Agroecology**

Society needs to be updated with innovative and alternative perspectives to the current dominant, technocratic discourse. Holistic and systemic approaches are required, and agroecology offers this vision. Relevant groups in society such as administrators, teachers, politicians, and journalists should be exposed to courses, seminars, workshops, and interventions, to be updated by experts in the field. Expertise in agroecology should therefore be created through dedicated programmes and training courses.

7. **Science-informed advertising and education on the impacts of Ultra Processed Foods**

People are exposed to marketing of UPFs but are often unaware of the growing scientific literature on the adverse health effects from consumption of UPFs. At the same time as watching advertisements for UPFs, people should receive scientifically based information on the health effects of these products. This is likely to lead to different consumption behaviour and healthier eating patterns. Furthermore, as prompted by transnational organisations, we must introduce "holistic and competence-based food education programmes into national primary and secondary curricula which has the potential, together with enabling school food environments, to foster food competent, resilient, critical and proactive food citizens" (FAO, 2022, p. 242). The biodistrict has the opportunity to contribute in this task.

8. **Freeing up time**

Time shortage was identified as a bottleneck to sustainable food practices. Thus, flexibility of the economic system towards increased consumer leisure appears as a necessary condition for the implementation of these practices. Based on previous research, freeing up time could be achieved by a reduction of working hours (Gómez-Baggethun and Naredo, 2015, p. 393; Hickel et al., 2022, pp. 400–401). Although this measure alone might not necessarily spark sustainable practices, positive effects might arise, however, if implemented in parallel with measures 6 and 7.

7 References

Agroecology Europe, n.d. The 13 principles of Agroecology. Agroecol. Eur. URL https://www.agroecology-europe.org/the-13-principles-of-agroecology/ (accessed 7.10.23).

Andreola, M., Pianegonda, A., Favargiotti, S., Forno, F., 2021. Urban Food Strategy in the Making: Context, Conventions and Contestations. Agriculture 11, 1–25. https://doi.org/10.3390/agriculture11020177

Anguelovski, I., 2015. Urban Gardening, in: Degrowth - A Vocabulary for a New Era. Routledge, New York, pp. 192–194.

Armson, R., 2011. Growing wings on the way: systems thinking for messy situations. Triarchy Press, Devon.

Arneth, A., Denton, F., Agus, F., Elbehri, A., Erb, K., Elasha, B.O., Rahimi, M., Rounsevell, M., Spence, A., Velentini, Ri., 2019. Framing and Context, in: IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems. IPCC, pp. 77–129.

Assiri, M., Barone, V., Silvestri, F., Tassinari, M., 2021. Planning sustainable development of local productive systems: A methodological approach for the analytical identification of Ecoregions. J. Clean. Prod. 287, 1–13. https://doi.org/10.1016/j.jclepro.2020.125006

Barr, S., Gilg, A., Shaw, G., 2011. Citizens, consumers and sustainability: (Re)Framing environmental practice in an age of climate change. Glob. Environ. Change 21, 1224–1233. https://doi.org/10.1016/j.gloenvcha.2011.07.009

Basile, S., Nicoletti, D., Paladino, A., 2016. Rapporto sull'approccio all'Agroecologia in Italia. Osservatorio Europeo del Paesaggio, Padula (SA), Italy.

Beluhova-Uzunava, R., Atanasov, D., 2017. Biodynamic Farming – Method for Sustainable Production of Quality Food. Bulg. J. Agric. Econ. Manag. Upr. Na Selskoto Stop. 62, 40–48.

Bernard, R.H., 2018. Research Methods in Anthropology - Qualitative and Quantitative Approaches, Sixth. ed. Rowman & Littlefield, Lanham, Maryland.

Berry, W., 1990. The Pleasures of Eating. What Are People For 145–151.

Bezner Kerr, R., Madsen, S., Stüber, M., Liebert, J., Enloe, S., Borghino, N., Parros, P., Mutyambai, D.M., Prudhon, M., Wezel, A., 2021. Can agroecology improve food security and nutrition? A review. Glob. Food Secur. 29. https://doi.org/10.1016/j.gfs.2021.100540

Biodistretti e valorizzazione del territorio. Webinar ARGAV, 15 gennaio 2021, 2021.

Bioreport 2020 - L'agricoltura biologica in Italia, 2021. . Ministero delle politiche agricole alimentari e forestali, Roma.

Blaser, M., 2013. Ontological Conflicts and the Stories of Peoples in Spite of Europe: Toward a Conversation on Political Ontology. Curr. Anthropol. 54, 547–568. https://doi.org/10.1086/672270

Blay-Palmer, A., Sonnino, R., Custot, J., 2016. A food politics of the possible? Growing sustainable food systems through networks of knowledge. Agric. Hum. Values 33, 27–43. https://doi.org/10.1007/s10460-015-9592-0

Bolis, I., Morioka, S.N., Sznelwar, L.I., 2014. When sustainable development risks losing its meaning. Delimiting the concept with a comprehensive literature review and a conceptual model. J. Clean. Prod. 83, 7–20. https://doi.org/10.1016/j.jclepro.2014.06.041

Bologna, E., 2022. Fattori di rischio per la salute: fumo, obesità, alcol e sedentarietà - Anno 2021 [WWW Document]. ISTAT Ist. Naz. Stat. URL https://www.istat.it/it/archivio/270163 (accessed 6.9.23).

Booth, S., Coveney, J., 2015. Food Democracy From consumers to food citizen. SpringerBriefs in Public Health, Torrazza Piemonte (TO), Italy.

Brand, C., Pettenati, G., 2022. Mountains and Food: Current Trends and Challenges in Europe's Mountain Regions. J. Alp. Res. Rev. Géographie Alp. https://doi.org/10.4000/rga.10885

Brock, C., Geier, U., Greiner, R., Olbrich-Majer, M., Fritz, J., 2019. Research in biodynamic food and farming – a review. Open Agric. 4, 743–757. https://doi.org/10.1515/opag-2019-0064

Brundtland, G.H., 1987. Our Common Future: Report of the World Commission on Environment and Development. U. N. Comm. 4, 300. https://doi.org/10.1080/07488008808408783

Bryman, A., 2016. Social Research Methods, Fifth. ed. Oxford University Press, Oxford.

Buyck, J., Meyfroidt, A., Brand, C., Jourdan, G., 2021. Bringing sustainable urban planning down to earth through food: the experience of the food transects of Grenoble and Caen. Rev. Agric. Food Environ. Stud. 102, 319–347. https://doi.org/10.1007/s41130-021-00147-x

Campbell, M.C., 2004. Building a Common Table: The Role for Planning in Community Food Systems. J. Plan. Educ. Res. 23, 341–355. https://doi.org/10.1177/0739456X04264916

Carolan, M., 2018. The Real Cost of Cheap Food, Second. ed. Routledge, Oxon, UK.

Chi siamo, 2019. . DAO Coop. URL https://www.dao.it/il-gruppo/chi-siamo/ (accessed 9.19.23).

Dara Guccione, G., Sturla, A., Bergamelli, C., Vaccaro, A., Viganò, L., 2021. Approccio agroecologico e biodistretti - Analisi di due casi studio. Ministero delle politiche agricole alimentari e forestali, Rome.

de Bakker, E., Dagevos, H., 2012. Reducing Meat Consumption in Today's Consumer Society: Questioning the Citizen-Consumer Gap. J. Agric. Environ. Ethics 25, 877–894. https://doi.org/10.1007/s10806-011-9345-z

De Cock, L., Dessein, J., de Krom, M.P., 2016. Understanding the development of organic agriculture in Flanders (Belgium): A discourse analytical approach. NJAS - Wagening. J. Life Sci. 79, 1–10. https://doi.org/10.1016/j.njas.2016.04.002

De Schutter, O., 2010. Agroecology and the right to food. Report of the Special Rapporteur on the right to food. United Nations.

Dias, R.S., Costa, D.V.T.A., Correia, H.E., Costa, C.A., 2021. Building bio-districts or eco-regions: Participative processes supported by focal groups. Agric. Switz. 11, 1–14. https://doi.org/10.3390/agriculture11060511

Dubuisson-Quellier, S., 2022. How does affluent consumption come to consumers? A research agenda for exploring the foundations and lock-ins of affluent consumption. Consum. Soc. 1, 31–50. https://doi.org/10.1332/UHIW3894

Esnouf, C., Russel, M., Bricas, N. (Eds.), 2013. Food system sustainability: insights from duALIne. Cambridge University Press, Cambridge ; New York.

European Commission, 2023. Organic farming in the EU - A decade of organic growth (Agricultural Market Brief No. 20), Agriculture and Rural Development. Brussels.

European Commission, 2022. €186 million to promote high quality and sustainable EU agri-food products [WWW Document]. Eur. Comm. - 2023 Promot. Policy Work Programme. URL https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7769 (accessed 7.8.23).

European Commission, 2021. List of potential Agricultural Practices that Eco-schemes could support.

European Commission, 2020. A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system. Brussels.

FAO, 2022. The future of food and agriculture - Drivers and triggers for transformation, 3. Food and Agriculture Organization of the United Nations, Rome.

FAO and WHO, 2019. Sustainable healthy diets - Guiding principles. Rome.

Flyvbjerg, B., 2006. Five Misunderstandings About Case-Study Research. Qual. Inq. 12, 419–445. https://doi.org/10.1177/1077800405284363.CITATIONS

Forno, F., Laamanen, M., Wahlen, S., 2022. (Un-)sustainable transformations: everyday food practices in Italy during COVID-19. Sustain. Sci. Pract. Policy 18, 201–214. https://doi.org/10.1080/15487733.2022.2037341

Foucault, M., 2002. Archaeology of knowledge, Routledge classics. Routledge, London ; New York.

Foucault, M., 1980. Power/knowledge : selected interviews and other writings, 1972-1977. Pantheon Books, New York.

Francis, C., Lieblein, G., Gliessman, S., Breland, T.A., Creamer, N., Harwood, R., Salomonsson, L., Helenius, J., Rickerl, D., Salvador, R., Wiedenhoeft, M., Simmons, S., Allen, P., Altieri, M., Flora,

C., Poincelot, R., 2003. Agroecology: The Ecology of Food Systems. J. Sustain. Agric. 22, 99–118. https://doi.org/10.1300/J064v22n03_10

Geels, F.W., 2014. Regime Resistance against Low-Carbon Transitions: Introducing Politics and Power into the Multi-Level Perspective. Theory Cult. Soc. 31, 21–40. https://doi.org/10.1177/0263276414531627

Gerring, J., 2004. What Is a Case Study and What Is It Good for? What Is a Case Study and What Is It Good fo. Source Am. Polit. Sci. Rev. Am. Polit. Sci. Rev. 98, 341–354. https://doi.org/10.1017/S0003055404001182

Giuliano, A., Meo, Ri., 2022. Il Biologico nel 2021 e il futuro del settore - Anticipazioni "Bio in cifre 2022." ISMEA - Istituto di Servizi per il Mercato Agricolo Alimentare.

Giuliano, A., Pugliese, P., 2022. BIO IN CIFRE 2022. ISMEA - Istituto di Servizi per il Mercato Agricolo Alimentare.

Gómez-Baggethun, E., Naredo, J.M., 2015. In search of lost time: the rise and fall of limits to growth in international sustainability policy. Sustain. Sci. 10, 385–395. https://doi.org/10.1007/s11625-015-0308-6

Gonzalez de Molina, M., 2019. Political Agroecology - An Essential Tool to Promote Agrarian Sustainability, in: Agroecology - A Transdisciplinary, Participatory and Action-Oriented Approach. CRC Press, Gonzalez de, pp. 55–71.

Goodman, D., DuPuis, E.M., 2002. Knowing food and growing food: Beyond the production-consumption debate in the sociology of agriculture. Sociol. Rural. 42, 5–22. https://doi.org/10.1111/1467-9523.00199

Graneheim, U.H., Lundman, B., 2004. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. Nurse Educ. Today 24, 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Grenfell, M. (Ed.), 2012. Pierre Bourdieu: key concepts, 2. ed. ed, Key concepts. Routledge, London.

Guareschi, M., Maccari, M., Sciurano, J.P., Arfini, F., Pronti, A., 2020. A methodological approach to upscale toward an agroecology system in EU-LAFSs: The case of the parma bio-district. Sustain. Switz. 12. https://doi.org/10.3390/su12135398

Guijt, I., 2010. Accountability and Learning. Capacity Dev. Pract. 277–291.

Hesse-Biber, Sharlene Nagy, 2014. Introduction to Mixed Methods Research, in: Mixed Methods Research: Merging Theory with Practice. Guilford, New York, pp. 1–26.

Hickel, J., Kallis, G., Jackson, T., O'Neill, D.W., Schor, J.B., Steinberger, J.K., Victor, P.A., Ürge-Vorsatz, D., 2022. Degrowth can work — here's how science can help. Nature 612, 400–403. https://doi.org/10.1038/d41586-022-04412-x

HLPE, 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition., A report by the of The High Level Panel of Experts on Food Security and Nutrition. Rome.

HLPE, 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Committee on World Food Security (CFS). Rome.

HLPE, 2014. Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome.

Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J., Stanton, J., 2007. Who are organic food consumers? A compilation and review of why people purchase organic food. J. Consum. Behav. 6, 94–110. https://doi.org/10.1002/cb.210

Investimenti e sostenibilità per il territorio [WWW Document], n.d. . Italcementi. URL https://www.italcementi.it/it/sarche (accessed 9.18.23).

Jaeger, S.R., Harker, F.R., Ares, G., 2023. Consumer insights about sustainable and 'beyond organic' agriculture: A study of biodynamics in the United Kingdom, Australia, Singapore, and Germany. J. Clean. Prod. 401, 136744. https://doi.org/10.1016/j.jclepro.2023.136744

Lieblein, G., Breland, T.A., Nicolaysem, A.M., Melin, M., Francis, C., 2020. D3.1: Educational approaches. NMBU.

Malang, T., Holzinger, K., 2020. The political economy of differentiated integration: The case of common agricultural policy. Rev. Int. Organ. 15, 741–766. https://doi.org/10.1007/s11558-020-09384-z

Mattalia, G., Calvo, A., Migliorini, P., 2018. Alpine home gardens in the Western Italian Alps: the role of gender on the local agro-biodiversity and its management. Biodiversity 19, 179–187. https://doi.org/10.1080/14888386.2018.1504692

Mazzocchi, C., Orsi, L., Bergamelli, C., Sturla, A., 2021. Bio-districts and the territory: evidence from a regression approach. Aestimum 79, 5–23. https://doi.org/10.36253/aestim-12163

Mbow, C., Rosenzweig, C., Barioni, L.G., Benton, T.G., Herrero, M., Krishnapillai, M., Liwenga, E., Pradhan, P., Rivera-Ferre, M.G., Sapkota, T., Tubiello, F.N., Xu, Y., 2019. Food Security, in: Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems. pp. 437–450.

Mendez, G.R., Pappalardo, G., Farrell, B., 2021. Practicing fair and sustainable local food systems: Elements of food citizenship in the simeto river valley. Agric. Switz. 11, 1–22. https://doi.org/10.3390/agriculture11010056

Mie Axel, A.H.R., 2017. Human health implications of organic food and organic agriculture: a comprehensive. Environ. Health 16, 1–22. https://doi.org/10.1186/s12940-017-0315-4

Migliorini, P., Wezel, A., 2017. Converging and diverging principles and practices of organic agriculture regulations and agroecology. A review. Agron. Sustain. Dev. 37. https://doi.org/10.1007/s13593-017-0472-4

MIPAAF, 2016. Piano strategico nazionale per lo sviluppo del sistema biologico. Ministero delle politiche agricole alimentari e forestali.

Noy, C., 2008. Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. Int. J. Soc. Res. Methodol. 11, 327–344. https://doi.org/10.1080/13645570701401305

Ohlau, M., Spiller, A., Risius, A., 2022. Plant-Based Diets Are Not Enough? Understanding the Consumption of Plant-Based Meat Alternatives Along Ultra-processed Foods in Different Dietary Patterns in Germany. Front. Nutr. 9, 1–17. https://doi.org/10.3389/fnut.2022.852936

Otero, I., Farrell, K.N., Pueyo, S., Kallis, G., Kehoe, L., Haberl, H., Plutzar, C., Hobson, P., García-Márquez, J., Rodríguez-Labajos, B., Martin, J.L., Erb, K.H., Schindler, S., Nielsen, J., Skorin, T., Settele, J., Essl, F., Gómez-Baggethun, E., Brotons, L., Rabitsch, W., Schneider, F., Pe'er, G., 2020. Biodiversity policy beyond economic growth. Conserv. Lett. 13, 1–18. https://doi.org/10.1111/conl.12713

Palazzoni, L., Meo, Ri., 2023. L'Agricoltura Biologica Nel Piano Strategico Della PAC Italiano. Ministero dell'agriocoltura, della sovranità alimentare e delle foreste, Roma.

Plessz, M., 2016. Evans D., 2014, Food waste: home consumption, material culture and everyday life, London: Bloomsbury, 119 p. Rev. Agric. Food Environ. Stud. 97, 71–73. https://doi.org/10.1007/s41130-016-0001-x

Plessz, M., Dubuisson-Quellier, S., Gojard, S., Barrey, S., 2016. How consumption prescriptions affect food practices: Assessing the roles of household resources and life-course events. J. Consum. Cult. 16, 101–123. https://doi.org/10.1177/1469540514521077

Plessz, M., Dubuisson-Quellier, S., Gojard, S., Barrey, S., 2012. How consumption prescriptions change food practices. Assessing the role of household resources and life course events. 3 BSA Food Study Group Conf. 1–22.

Plessz, M., Gojard, S., 2012. Fresh is best? Social position, time, and the consumption of fresh vs. processed vegetables in France.

Pugliese, P., Antonelli, A., Basile, S., 2015. Full Case Study Report, Bio-Distretto Cilento - Italy. CIHEANM-Bari, Bari.

Rana, J., Paul, J., 2019. Health motive and the purchase of organic food: A meta-analytic review. Int. J. Consum. Stud. 44, 162–171. https://doi.org/10.1111/ijcs.12556

Ritzer, G., 2010. Rethinking Globalization: Glocalization/Growbalization and Something/Nothing, in: Readings in Globalization: Key Concepts and Major Debates. Wiley-Blackwell, Chichester, West Sussex, U.K. ; Malden, MA, pp. 361–372.

Rockström, J., Edenhofer, O., Gaertner, J., DeClerck, F., 2020. Planet-proofing the global food system. Nat. Food 1, 3–5. https://doi.org/10.1038/s43016-019-0010-4

Rose, G., 1997. Situating knowledges: positionality,reflexivities and other tactics. Prog. Hum. Geogr. 21, 305–320. https://doi.org/10.1191/030913297673302122

Sarche, il cementificio è in produzione, con il mistero delle "fumate" sulla valle: la preoccupazione della popolazione - Cronaca | l'Adige.it [WWW Document], 2022. . l'Adige. URL https://www.ladige.it/cronaca/2022/06/03/sarche-da-ieri-il-cementificio-e-in-produzione-con-il-mistero-delle-fumate-sulla-valle-la-preoccupazione-della-popolazione-1.3229091 (accessed 9.18.23).

Seawright, J., Gerring, J., 2008. Case Selection Techniques in Case Study Research. Polit. Res. Q. 61, 294–308. https://doi.org/10.1177/1065912907313077

Sedlacko, M., Reisch, L., Scholl, G., 2013. Sustainable food consumption: when evidence-based policy making meets policy-minded research–Introduction to the special issue. Sustain. Sci. Pract. Policy 9, 1–6. https://doi.org/10.1080/15487733.2013.11908110

Seghezzo, L., 2009. The five dimensions of sustainability. Environ. Polit. 18, 539–556. https://doi.org/10.1080/09644010903063669

Shiva, V., 2016. The violence of the Green Revolution: Third World agriculture, ecology and politics, Culture of the land. University Press of Kentucky, Lexington.

Slaper, T., Hall, T., 2011. The Triple Bottom Line : What Is It and How Does It Work? Indiana Univ. Kelley Sch. Bus. 2, 4–8.

Smith, J., Jehlička, P., 2013. Quiet sustainability: Fertile lessons from Europe's productive gardeners. J. Rural Stud. 32, 148–157. https://doi.org/10.1016/j.jrurstud.2013.05.002

Solow, R.M., 1993. Sustainability: An Economist's Perspective. Econ. Environ. Sel. Read. 3, 179–187.

Teague, R., Kreuter, U., 2020. Managing Grazing to Restore Soil Health, Ecosystem Function, and Ecosystem Services. Front. Sustain. Food Syst. 4, 534187. https://doi.org/10.3389/fsufs.2020.534187

UN Environment (Ed.), 2019. Global Environment Outlook – GEO-6: Healthy Planet, Healthy People:, 1st ed. Cambridge University Press. https://doi.org/10.1017/9781108627146

Vanner, C., 2015. Positionality at the Center : Constructing an Epistemological and Methodological Approach for a Western Feminist Doctoral Candidate Conducting Research in the Postcolonial. Int. J. Qual. Methods 14, 1–12. https://doi.org/10.1177/1609406915618094

Warde, A., 2016. The practice of eating. Polity Press, Cambridge, UK ; Malden, MA.

Warde, A., Cheng, S.-L., Olsen, W., Southerton, D., 2007. Changes in the Practice of Eating: A Comparative Analysis of Time-Use. Acta Sociol. 50, 363–385. https://doi.org/10.1177/0001699307083978

Wezel, A., Bellon, S., Doré, T., Francis, C., Vallod, D., David, 509), 2009. Agroecology as a science, a movement and a practice. Sustain. Agric. 2, 27–43. https://doi.org/10.1007/978-94-007-0394-0_3

Wezel, A., Brives, H., Casagrande, M., Clément, C., Dufour, A., Vandenbroucke, P., 2016. Agroecology territories: places for sustainable agricultural and food systems and biodiversity conservation. Agroecol. Sustain. Food Syst. 40, 132–144. https://doi.org/10.1080/21683565.2015.1115799

Wezel, A., David, C., 2020. Policies for agroecology in France: implementation and impact in practice, research and education. Landbauforsch. J. Sustain. Org. Agric. Syst. 66–76. https://doi.org/10.3220/LBF1608660604000

Wezel, A., Herren, B.G., Kerr, R.B., Barrios, E., Gonçalves, A.L.R., Sinclair, F., 2020. Agroecological principles and elements and their implications for transitioning to sustainable food systems. A review. Agron. Sustain. Dev. 40. https://doi.org/10.1007/s13593-020-00646-z

Yazan, B., 2015. Three Approaches to Case Study Methods in Education: Yin, Merriam, and Stake. Qual. Rep. https://doi.org/10.46743/2160-3715/2015.2102

Yin, R.K., 2009. Case Study Research - Design and Methods, Fourth. ed. SAGE, Thousand Oaks, California.

Yin, R.K., 2002. Case Study Research - Design and Methods, Third. ed. Sage Publications Inc., Thousand Oaks, California.

Zanasi, C., Basile, S., Paoletti, F., Pugliese, P., Rota, C., 2020. Design of a Monitoring Tool for Eco-Regions. Front. Sustain. Food Syst. 4, 1–21. https://doi.org/10.3389/fsufs.2020.536392

Zezza, A., Demaria, F., Laureti, T., Secondi, L., 2020. Supervising third-party control bodies for certification: the case of organic farming in Italy. Agric. Food Econ. 8, 26. https://doi.org/10.1186/s40100-020-00171-3

8 Appendix 1 – Extensive literature review

This section explores and provides a background about the conceptual pillars of the thesis namely sustainable food practices and agroecological territories. The analysis of these concepts provides the specific cut given to these concepts on which, in turn, the investigation of the work is built.

Sustainability and sustainable food systems

To frame the discussion on how consumer food provision and consumption patterns impinges on the transition towards sustainable food systems, a brief overview of the complexity and controversies surrounding the notion of sustainability will first be provided. Subsequently, an insight on the approach adopted in policy making towards SFSs will be described and a mapping of the most relevant indicators will be presented. This section intends to shore up the structure of the investigation on the research questions.

Framing the concept of sustainability

The concept of sustainability is nuanced and contingent on the different disciplines and perspectives adopted, so no consensus has been reached on a unanimous definition. Historically, the sustainability debate can be traced back to the clash between anthropocentric and non-anthropocentric worldviews (Seghezzo, 2009, p. 541). Anthropocentrism privileges human values and human wellbeing at the expenses of the environment and generally assumes that "technical and managerial approaches could solve well the environmental crisis" (Seghezzo, 2009, p. 541). Non-anthropocentrism, in contrast, rejects the view of nature having a value solely in relation to human interests and questions "large-scale technological developments and the commitment of big corporations to environmental matters" (ibid.). These approaches are embedded into the distinctive notions of *weak sustainability* and *strong sustainability* (ibid, p.542). The anthropocentric-based *weak sustainability* builds on the principle of inputs substitutability between natural capital and man-made capital, entailing that "what we are obligated to leave behind is a generalized capacity to create well-being, not any particular thing or any particular natural resource" (Solow, 1993, p. 182). The non-anthropocentric-driven *strong sustainability*, in contrast, attributes an intrinsic and irreplaceable value to natural resources and ecological functions over man-made capital, underlying the no remedy or reversibility in case of damage (Bolis et al., 2014, p. 12). A widespread approach to sustainability is the Triple Bottom Line (TBL), defined as "an accounting framework that incorporates three dimensions of performance: social, environmental and financial" (Slaper and Hall, 2011, p. 1). However, although the TBL concept allows for the inclusion of these different aspects of sustainability, it does not, in fact, ensure

their compatibility (Bolis et al., 2014, p. 11). Mainstream academia has been widely flattened on the TBL definition of sustainability. Similarly, policies have been moulded on the concept of *sustainable development* (Brundtland, 1987), anchored in *weak sustainability* and the TBL (Seghezzo, 2009, pp. 539, 542), to address sustainability challenges. However, critique and alternative views have also been developed. A more embracing approach to sustainability was developed, for instance, by Seghezzo (Seghezzo, 2009) who proposes five dimensions of sustainability. His definition syntheses the dichotomy between nature and culture through the biunivocal interconnection between territory and cultural identity, as well as lifestyles and human physical and psychological health (Seghezzo, 2009, p. 548). He redirects the attention towards intrageneration and intergenerational equity and justice and introduces the importance of personal well-being as a key component of sustainability. Nevertheless, while the various definitions of sustainability emphasise the critical dimensions of sustainability, from the point of view of policy making "the trick is in measuring it", i.e. identifying the variables, what to measure and finding the unit of measurement (Slaper and Hall, 2011, pp. 1–2).

Sustainable food systems in policy and literature

A food system is defined as "all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes" (HLPE, 2014, p. 29). Transnational organisations define a sustainable food system as "a food system that ensures food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition of future generations are not compromised" (HLPE, 2017, p. 23). It follows that "sustainability is not a condition but a process" that affects the entire supply chain and intertwines the environment and the socio-cultural characteristics of rural communities (Guareschi et al., 2020, pp. 1–2). Although acting on "production and consumption in environmental, social and economic dimensions" appears crucial (ibid.), global human diets also stand as "a major driver of both human health and environmental sustainability" (HLPE, 2019, p. 99), suggesting that "health and nutrition" should complement TBL's environmental, social and economic dimensions of sustainability. Furthermore, beyond fulfilling quantitative and health related nutritional needs, "the food system is also profoundly cultural, consumeristic, social, economic and local" (Esnouf et al., 2013, p. 2) and some scholars have emphasised how food systems that "support social justice, ecological regeneration, are democratically inclusive and contribute to local economies" (Blay-Palmer et al., 2016, p. 27). A more encompassing approach to sustainability is provided by agroecology, defined as "the ecology of the food systems" (Francis et al., 2003). Agroecology's systemic and transdisciplinary approach is reflected in the underlying thirteen

principles, which further innovative elements to the understanding of sustainability in food systems, such as a cultural dimension in the form of care for culture, identity and tradition, and “ethics” in relation to the attention to animal welfare.

Determinants of sustainable food systems

In this thesis, the assessment of how consumer food practices may shape the trajectory towards sustainable food systems was simplified by extracting and aggregating in a comparative table the critical indicators towards SFSs mentioned in relevant documents issued by policy makers, particularly transnational organisations and European Union. The selected documents are:

(1) “The future of food and agriculture – Drivers and triggers for transformation” (FAO, 2022);
(2) “Sustainable healthy diets – Guiding principles” (FAO and WHO, 2019);
(3) “Farm to Fork” strategy (European Commission, 2020);
(4) “Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition” (HLPE, 2019);
(5) “Global Environment Outlook – GEO-6: Healthy Planet, Healthy People” (UN Environment, 2019).

The most frequent indicators of sustainability for SFSs have been clustered under six main domains of sustainability, i.e. “health & nutrition”, “environment”, “society”, “economy”, “culture” and “ethics”, as illustrated in Table 5 illustrates that domains “health & nutrition” and “environment” tend to be more populated, i.e. policy emphasises the metrics of theses domains over indicators belonging to, for instance, “culture” or “ethics”. This observation was also expressed in document (5) which states that ”regulations are concerned primarily with human heath” (UN Environment, 2019, p. 432).

Table 5. Some indicators can be placed in several domains but have only been written in one. This is the case, for example, of “meat consumption”, which falls under “health and nutrition”, “environment” and “ethics”, but was only compiled in the “health and nutrition” domain. Table 5 illustrates that domains “health & nutrition” and “environment” tend to be more populated, i.e. policy emphasises the metrics of theses domains over indicators belonging to, for instance, “culture” or “ethics”. This observation was also expressed in document (5) which states that ”regulations are concerned primarily with human heath” (UN Environment, 2019, p. 432).

Table 5: Determinants of consumers' practices to attain sustainable food systems based on policy making literature.

Indicators of SFSs	(1)	(2)	(3)	(4)	(5)
Health & Nutrition					
Ultra-Processed Foods[12]	X	X		X	
Vegetable and fruit intake	X	X	X		X
Intake of cereals and whole grains	X	X	X		X
Seasonal foods	X		X	X	
Meat consumption	X	X	X	X	X
Environment					
Biodiversity	X	X	X	X	X
Organic production	X	X	X	X	
Alternative production models			X	X	
Climate change (GHGs emissions)	X	X	X	X	X
Transportation		X	X		
(Plastic) packaging	X	X	X		
Waste management	X	X	X	X	X
Land use	X	X			X
Water pollution	X		X		X
Society (social justice, justice and equity)					
Agricultural labour rights	X		X		
Retribution of farmers	X	X	X		
Retribution of agricultural workers			X		
Local food markets	X		X	X	
Economy (contribution to local economy)					
Supermarkets / retailers	X	X	X		
Food price	X		X	X	
Food market-price	X	X			
Food preparer's time		X			
Culture (Place, Identity, belonging)					
Traditional cuisine	X			X	
Corporate mass food culture		X			
Cooking		X			
Eating out	X				
Ethics					
Animal health and welfare			X	X	
Nature			X		

12 Ultra-processed foods (UPFs) "are made from processed substances extracted or refined from whole foods – e.g. oils, hydrogenated oils and fats, flours and starches, variants of sugar, and cheap parts of remnants of animal foods - with little or no whole foods" (Booth and Coveney, 2015, p. 5). Examples of ultra-processed food are "pre-prepared mixed dishes, refined-grain breads, ready-to-eat cereals, salty snacks, cookies, candy, sugar sweetened beverages (SSBs), ketchup, margarine, mayonnaise" (HLPE, 2017, p. 27).

Fundamentals of theory of practice

Theories of practices resolve and synthesise ”the structure-agency dilemma” (Warde, 2016, p. 38) through practice, regarded as a recursive process between individual action and social structure (Warde, 2016, p. 40). The starting point, thus, is not “individual decision making, as with rational action theory”, nor “functioning systems, where the operation of the society or the organization accounts for the behaviour of its member” (Warde et al., 2007). Rather than action, decisions and deliberation, theory of practice emphasises the role of routine, dispositions and practical consciousness (Warde, 2016, p. 4). It is argued that people’s behaviour tends to be regulated by habituation which provides “consistency and effectiveness to behaviour in familiar situations” (Warde, 2016, p. 130). In everyday life, therefore, where behaviour is characterised by “no plans or conscious decisions” (ibid., p. 111), “automatism” dominates human brain through “uncontrolled, effortless, associative, fast, unconscious and skilled” behaviour (ibid., p. 101). In this context, environment plays a crucial role both in terms of external and social settings. Information about food practices can be found in Appendix 6 – Comprehensive results.

Brief introduction to Agroecology

Agroecology is currently used to indicate “either a scientific discipline, agricultural practice, or political or social movement” (Wezel et al., 2009, p. 503). It is also emerging as policy (Wezel et al., 2016, p. 133), particularly under the name of political agroecology (Gonzalez de Molina, 2019). During the first phase of its evolution, between 1930s and 1960s, agroecology mainly focused on “plot and field scale” but widened lately, between 1970s and 2000s, to embrace “farm, [..] landscape agroecosystems, and […] food systems scales” (ibid., p. 509). Agroecology has also been defined as “the ecology of the food systems” (Francis et al., 2003), in that it represents “the integrative study of the ecology of the entire food systems, encompassing ecological, economic and social dimensions” (ibid.). The interconnectedness, scale and complexity of the elements and activities involved in food systems, including their socio-economic and environmental domains, underlie the emphasis and reference to ecology and systemic approaches. The above definitions also highlight why agroecology requires transdisciplinary, participatory and principle-based approaches (Mendez et al., 2021, pp. 5–8). The whole literature related to agroecology was collected, condensed and distilled in a comprehensive and meticulous work that led to the elaboration and consolidation of 13 principles (Wezel et al., 2020, pp. 3–4) that involve agricultural, ecological, socio-economic, cultural and political dimensions at different scales (HLPE, 2019, pp. 39–41). These principles have been concisely articulated in recycling, input reduction, soil health, animal health, biodiversity, synergy, economic diversification, co-creation of knowledge, social values and diets, fairness, connectivity, land and natural

resource governance and participation (Agroecology Europe, n.d.). These principles are “generically formulated” but “locally applied” which enables stakeholders to develop and implement tailored agroecological practice through knowledge creation and sharing (Wezel et al., 2020, p. 10). The capability of farming and food systems rooted in agroecology and its approaches were also proved to improved food security and nutrition (Bezner Kerr et al., 2021, p. 9). “The long-term perspective and holistic approaches” that inform agroecology make it particularly suited to supporting the transition towards sustainable food and agricultural systems (Wezel et al., 2020, p. 2). The foundational role of agroecology to offer solutions to the damages caused by conventional agriculture and the global food system has been recognised by transnational organisations and increasing attention and support is given by policy (De Schutter, 2010; European Commission, 2020; HLPE, 2019).

9 Appendix 2 - Interview guide for consumers

The interview guide used for the semi-structured interviews is reported below. Each part of the interview covers a specific purpose which is described at the beginning of every interview section.

Category 1: Situate the respondent's mindset and set of values.

Objectives:

- Make the interviewee feel more comfortable.
- Have a rough idea about this person's everyday life.
- Have a feeling of what is important for this individual, his/her values.

1. What is your name?
2. Where are you from? Were you born here? If not, when, and why did you arrive here?
3. Can you tell me something about yourself: your age, your family, your work, your home?
4. What do you like to do in your spare time or in the weekend? Do you have some hobby?

Category 2: Understand the interviewee's relation with food.

Objectives:

- Investigate the meaning of food for the interviewee.
- Provide information about how sustainability is implemented in everyday life.
- Uncover the interviewee's associated practices with food e.g., purchasing, cooking, eating, disposal.

5. Can you comment on what you ate yesterday evening?
6. How do you organise about cooking? Do you cook? How do you consume the meals in your family?
7. Can you tell me something about your eating-out habits? If you decide to eat out, where do you go? What types of food do you choose?
8. Can you tell me something about how you/your family organise your food purchasing?
9. Where do you usually do your grocery shopping?
10. Why do you choose these shops? What do you like or don't like about these shops?

Category 3: Relation between food and the territory.

Objectives:

- Clarify the interviewee's understanding of the connection between food and territory.

- Awareness of the existence of the biodistrict and its meaning

11. Can you think of some products that you can obtain through friends, relatives or directly from the producer that are grown here in the Valle dei Laghi biodistrict or the surrounding areas? For example, oil, honey, meat, eggs, or other things? How does this work?
12. Do you buy organic food? What do you think about organic food?
13. What do you know about the biodistrict? How did you find out about it and what do you think?

Category 4: Notion of sustainable food systems (e.g. large retailer, small-scale production, packaging, aspect of non-industrially produced vegetables and fruits, different varieties, UPF, traditional food, famers markets, artisanal bread, food waste)

Objectives:

- Assess the knowledge of some implications of industrial global food systems versus some alternative

I will show you some images now. For each image, I ask you to tell me whether what you see is for you a sustainable or unsustainable practice, and why? If you do not have an opinion, simply tell me what you observe and what comes to mind.

PHOTO 1 – Supermarkets

PHOTO 2– Farmer Markets

PHOTO 3 – Packaging

PHOTO 4 – CSA Box

PHOTO 5 – Biodiversity Corn

PHOTO 6 – Biodiversity Carrots

PHOTO 7 – Ultra Processed Food

PHOTO 8 – Traditional Food

PHOTO 9 – Artisanal Bakery

PHOTO 10 – Farm Labour

PHOTO 11 – Local Producers

PHOTO 12 - Waste

PHOTO 13 - Hens

10 Appendix 3 – Interview guide for producers

Interview guide producers

- Have at hand a map of the biodistrict, to see the land they own
- Tell about yourself and what you are doing. Create a comfortable environment.
- Assure people anonymity and confidentiality.
- Explain why their opinion is important for the topic and that they can take their time to answer.
- You are going to learn from them.
- Encourage them to interrupt you if they want to say something they consider important.
- Ask permission to record

Category 1: Situate the producer and his/her mindset.

Objectives:

- Make the interviewee feel more comfortable.
- Have a feeling of what this individual's values are.
- Verify how the interviewee's actions might reflect these values.
- What is your name?

1. Where are you from? Were you born in this region? (If yes) Can you show me where on the map? (If no) When and why did you come here?
2. Can you present yourself and tell me about your age, your family, your work, your home?
3. What do you do like to do in your spare time or in the weekend? Do you have some hobby?

Category 2: Understand the producers's relation with food.

Objectives:

- Investigate the meaning of food for the producer.
- Provide information about how sustainability is implemented in everyday life.
- Uncover the producer's associated practices with food e.g. purchasing, cooking, eating, disposal.

4. Can you comment on what you ate yesterday evening?
5. How do you organise about cooking? Do you cook? How do you consume the meals in your family?
6. Can you tell me something about your eating-out habits? If you decide to eat out where do you go? What types of food do you choose?
7. Can you tell me something about how you/your family organise your food purchasing?

8. Where do you usually do your grocery shopping?
9. Why do you choose these shops? What do you like about these shops and what do you not like?

Category 3: Investigate the food production practices in relation with the territory and sustainability

Objectives:

- Clarify the producer's understanding of sustainable food practices
- Relation with the biodistrict

10. Can you tell me something about how you became a farmer?
11. What do you cultivate/produce in the different periods of the year?
12. How many hectare do you have? (Can you show me on the map?) Do you own the land?
13. Are you organic certified?
14. Why did you choose to become organic?
15. How often are you controlled and what are the controls you are tested on?
16. What agricultural practices do you apply?
17. What kind of agriculture are the owners of the land neighbouring your fields practicing?
18. How is the relation with the bio-district? What kind of support do you have or would you like to have?

Category 4: Relation with customers and consumers

Objectives:

- Clarify what are the current sale methods and the rationale behind
- Map the current customers
- Understand the relation with local consumers
- Clarify the potential of selling to local consumers
- Assess the knowledge of some implications of industrial global food systems versus some alternative

19. What are your current sale practices and why did you choose them? (e.g. Online? Direct sales? Farmers' markets?)
20. To whom do you sell?
21. To what extent are you in contact with local consumers?
22. What difficulties do you encounter in selling your products to local consumers?
23. What is your opinion about selling your products to local consumers?

11 Appendix 4 – Informed consent

The informed consent was based on the template provided by the Norwegian University of Life Sciences. Below is the document in English, while the participants were given Italian version translated by the author.

Are you interested in taking part in the research project **"Consumers' Perspectives of the Vallelaghi Biodistrict on Sustainable Food and Scenarios for its Purchase"?**

This is an inquiry about participation in a research project where the main purpose is to to explore the notion of sustainable food for consumers in the Vallelaghi biodistrict, in particular the municipality of Madruzzo. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

This research project constitutes a thesis work within the European Master in Agroecology. The aim of the project is to understand how consumers in the municipality of Madruzzo in the Vallelaghi biodistrict understand, interpret and use sustainable food in their daily lives and how they imagine scenarios for its purchase that are competitive with the current supply system. The research questions are:

1. In what terms do consumers in the Vallelaghi Biodistrict perceive and understand the concept of sustainable food and its social and environmental impact? Where do they buy it and how do they consume it?
2. How do they envision sustainable food purchasing scenarios that would make this experience attractive and preferable to current options?

The result of the study could be used by the biodistrict in the implementation of a point of sale.

Who is responsible for the research project?

The project is based on the collaboration of three institutes that are simultaneously responsible for the project:
University of Trento, Department of Sociology and Social Research
Norwegian University of Biological Sciences (NMBU)
AGRAPOLE-ISARA, Laboratory of Rural Studies

NMBU is the Data Controller for the project.

The project is in collaboration with the Vallelaghi biodistrict.

Why are you being asked to participate?

The initial sample of participants consists of twelve consumers over the age of 18 and resident in the municipality of Madruzzo. The participants are consumers both interested and not interested in sustainable food issues. The initial names were provided by Cinzia Zandonai, project manager and art director of the Vallelaghi biodistrict cultural events. The idea is to gradually expand the number of participants by receiving the names of other possible candidates to interview from the first participants. At the end of March, a sample of 8 to 10 people will be asked to contribute further to the research by participating in a focus group and a visionary thinking exercise.

What does participation involve for you?

If you choose to participate in the project, you will have to take part in an interview and answer 14 questions, including a comment on images related to sustainable food. The interview will be conducted face-to-face and the questions will be open-ended to give you the opportunity to answer fully expressing your point of view. The duration of the interview is approximately one hour. The audio will be recorded electronically so that the interview can be transcribed and analysed. You will also be asked to send a photograph of your last major food expenditure before the interview.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purposes specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

Only the student and NMBU will have access to your personal data. We will replace your name and contact details with a code. The list of names, contact details and respective codes will be stored separately from the rest of the data collected, the data will be stored on an encrypted search server.

If you participate in the project your statements may appear in the publication but you will not be recognisable. The personal information that will be published about you will concern your age group, occupation and family status, if none of this information can reveal your identity.

What will happen to your personal data at the end of the research project?

The project is scheduled to end on 30 September 2023. At the end of the project all personal data will be deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with NMBU, Data Protection Services has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project or wish to exercise your rights, please contact:
-NMBU via Anna Marie NICOLAYSEN, anna.marie.nicolaysen@nmbu.no
-NMBU's Data Protection Officer, Hanne Pernille Gulbrandsen, personvernombud@nmbu.no
-Maddalena CIRANI, maddalena.cirani@nmbu.no
-Francesca FORNO, francesca.forno@unitn.it
-Perrine VANDERBROUCKE, pvandenbroucke@isara.fr
- Data Protection Services, by e-mail: (personverntjenester@sikt.no)) or by phone: +47 53 21 15 00.

Yours sincerely,

Project Leader
(Researcher/supervisor)

Consent form

I have received and understood information about the project “Consumers' Perspectives of the Vallelaghi biodistrict on Sustainable Food and Scenarios for its Purchase” and have been given the opportunity to ask questions. I give consent:

- ☐ to participate in an interview

I give consent for my personal data to be processed until the end date of the project, approx. 30 September 2023.

(Signed by participant, date)

12 Appendix 5– List of participants

The list of respondents and their data are reported in anonymised form in the table below.

List of consumers that participated to the research project through interviews.

Interviewee number	Participant anonymised name	Gender	Age	Residence	Profession
MTB_01	Isabel	F	62	Calavino	Kinder garden schoolteacher
MTB_02	Debra	F	66	Pergolese	Retired (former state employee)
MTB_03	Adam	M	50	Lasino	Schoolteacher
MTB_04	Dave	M	69	Lasino	Retired (former university teacher)
MTB_05	Betty	F	55	Pergolese	State employee
MTB_06	Ken	M	38	Lago di Cavedine	Magistral Master - Project manager
MTB_07	Ralph	M	57	Brusino	State employee
MTB_08	Melody	F	20	Pergolese	Student – Technical agrarian
MTB_09	Miranda	F	53	Vigo di Cavedine	Schoolteacher
MTB_10	Patrick	M	26	Pergolese	Magistral Master - Winery
MTB_11	Katrina	F	25	Pergolese	Schoolteacher
MTB_12	Linda	F	61	Sarche	Medical doctor
MTB_13	Frank	M	30	Pergolese	Magistral Master IT engineer
MTB_14	Jennifer	F	26	Pergolese	Magistral Master Landscape
MTB_15	Virginia	F	52	Pergolese	Unemployed
MTB_16	Dorothy	F	71	Calavino	Retired (cleaning lady)
MTB_17	Erik	M	49	Stravino	Bank manager
MTB_18	John	M	62	Cavedine	Retired (accountant, former bank
MTB_19	Rebecca	F	67	Pergolese	Helps the husband in the farm,
MTB_20	Sharon	F	50	Lago di Cavedine	Accountant, manager of family
MTB_21	Nancie	F	43	Lasino	Housewife and volunteering
MTB_22	Kevin	M	56	Pergolese	Winemaker
MTB_23	Karen	F	91	Pergolese	Retired
MTB_24	Amy	F	23	Pergolese	Tourism-oriented Technical
MTB_25	Janet	F	60	Pergolese	Housewife (bar attendant)
MTB_26	Lucy	F	65	Brusino	Social worker
MTB_27	Vera	F	52	Sarche	Commercial technical institute
MTB_28	Brenda	F	46	Sarche	Unions official
MTB_29	Mary	F	44	Sarche	Office worker
MTB_30	Shirley	F	65	Brusino	Retired (no studies, Manager)
MTB_31	Ralph	M	63	Cavedine	Retired (mechanical technician)

MTB_32	Cindy	F	24	Pergolese	University Student (literature,
MTB_33	Helen	F	65	Calavino	Retired (former schoolteacher)
MTB_34	Daniel	M	48	Stravino	Journalist
MTB_01P	Ivan	-	-	-	Organic bread producer
MTB_02P	Susan	-	-	-	Organic producer

13 Appendix 6 – Comprehensive results

This section presents the interviews' most valuable information to answer the research questions. Each topic will be briefly introduced, although most space will be given to the interviewees' own words. The order of the sub-chapters, i.e. food practices, drivers of change towards sustainable food practices, organic and biodynamic food and food production, and the Valle dei Laghi biodistrict, reflects the research questions. The final sub-chapter, non-food related dimensions of sustainability, was reported to complement the information on food-related areas, offering an insight of some participants' broader views on sustainability.

Food practices

The food practices adopted by participants encompass various actions on the sustainability spectrum and range from the automatic reproduction of family habits and local traditions to conscious choices aimed at enhancing sustainability. This sub-chapter articulates the presentation of the specific food practices collected during the fieldwork along two components: the food system, i.e. production, processing, distribution, preparation, consumption and waste, and food consumption, particularly the concept of provisioning, sometimes studied as shopping, budgeting and cooking (Warde, 2016, p. 14). The performance of eating, i.e. occasions, menus and techniques of incorporation (Warde, 2016, p. 76), was not given particular emphasis, although material was retrieved also in this area, due to the limited space and non-direct connection with sustainable food systems. From the consumer perspective, provisioning includes the process of production and distribution within the food system, while cooking comprises food processing and preparation. In relation to the information retrieved, provisioning includes therefore, kitchen gardens, food sharing, purchasing of Italian products, seasonal food and meat consumption. Waste management is part of both food systems and consumer practices. The integration among the tree components is illustrated in Figure 11, where the food system is represented in the circular form advocated by policy making despite the linear structure of the current food system.

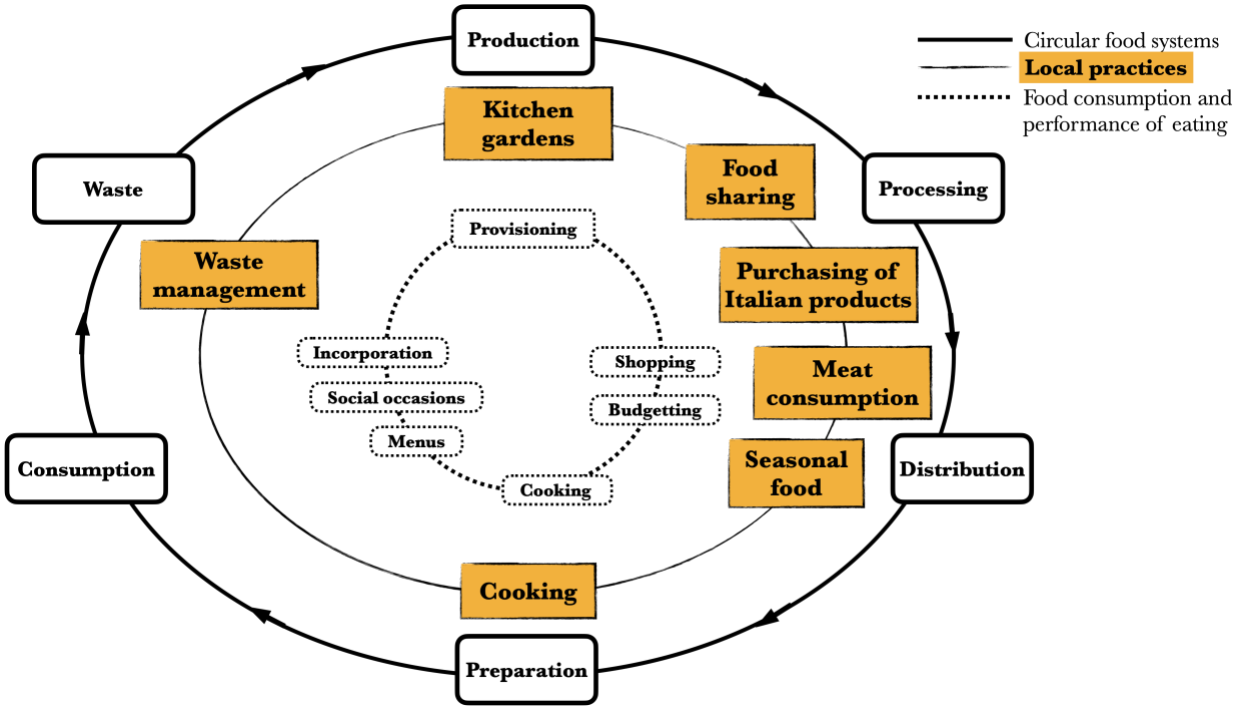


Figure 11: Interconnection between food systems, food consumption and local food practices (diagram by Maddalena Cirani).

Family kitchen gardens and own food production

Kitchen gardens represent a local practice not foreseen at the beginning of the fieldwork. All respondents either own a vegetable garden directly or can benefit indirectly from some garden produce through relatives or friends. Participants implement various types of agricultural practices in their kitchen gardens and report different quantities of produce and. Several of them, for instance, gauge being able to produce 80% to 100% of the vegetables they consume during summertime. Debra, for instance, owns two to three hectares of land where she produces copious amounts of food including apples, kiwi, cherries, peaches, legumes, olive oil, wine, corn flour for polenta. Last year they produced one quintal and eight of tomatoes. Additionally, they have hens, chickens, and rabbits. They make use of integrated agriculture, which she describes as:

"I mean it's not organic though [my husband] […] only applies the essentials. Because organic, you throw copper in organic, it's not that the stuff comes up like that ... No, integrated is that which is not conventional, integrated is very controlled. Everything is done with the head in short.".

Dave also has a great variety of products in his kitchen garden, such as pears, apples, apricots, plums, cherries, persimmons, pomegranates, legumes, tomatoes, potatoes, salads, and turnips. During the summer and autumn their purchases of horticultural products is very limited and, as they freeze excess vegetables, they consume many of their vegetables throughout the year. He uses polyvinyl chloride (PVC) for mulching,

although he plans to switch eventually to dissolving mulching and, although he emphasises that he is not "a maniac of organic", he adds:

"I treat as little as possible. It means that all summer production sees nothing, no copper, no sulphur, nothing",

and later again,

"The vegetables are all stuff from the kitchen garden that is not organic, it's more. I mean, we use nothing."

Shirley firmly refuses to spray any synthetic chemicals at all in her large vegetable garden. She is basically self-sufficient on vegetables and says:

"I don't buy any veggies."

She produces many different types of vegetables including salads of all kinds, radicchio, carrots, borlotti beans, green beans, long beans, or yellow ones, peas, black cabbage, cabbage, savoy cabbage, tomatoes, cucumbers, courgettes, pumpkins, potatoes, aubergines, and strawberries. She also has cherries, apricots, plums, peaches, apples, pears, one chestnut, but she reports having problems with fruit trees as she does not use any pesticide. She uses to cultivate her own corn and grinds it to produce her own polenta flour which covers the consumption for her and her husband throughout the year. She also produced ten quintals of ancient wheat a few years ago within a project in the area. In addition to vegetables Shirley has also hens and geese which provide her with eggs. Three or four years ago she also had goats and prepared a very appreciated goat cheese. This year she plans in fact to get a small goat and start doing again. She recalls from her childhood:

"We were used to running on the mountain nearby, doing our runs, we had all the nature at our disposal. We learnt a lot being there, then we also had animals, we had the vegetable garden, we had the countryside. We had the river, so my dad would go fishing, so there was everything we could need."

Nevertheless, other respondents have lower productions. Isabel tries to plant as much as possible in her kitchen garden. In summer they have tomatoes, various types of salads, chicory, aubergines, peppers including kiwi, while in winter they produce leeks, cauliflower, some chicory and cabbage. She is also very careful to avoid any kind of synthetic chemicals. Nancie has a small kitchen garden in the backyard with limited production, and says:

"In summer we have a small vegetable garden. [...]. We usually put in tomatoes, cucumbers, aromatic herbs, salad, courgettes, but it's been two or three years they don't grow, so this year we put pumpkins, but then they need space. And basil, I put lots of basil, so I make pesto for the winter, and parsley."

She points out that in summer they are self-sufficient in herbs as they have basil, parsley, mint, oregano, thyme, sage and rosemary.

Some interviewees also produce their own olive oil, like Miranda who, in addition to a kitchen garden where she produces her own vegetables, shares a family plot of land with a hundred olive trees near Lake Cavedine with another family member. Adam doesn't own a land for a kitchen garden. However, he wishes:

"One of the things I would like to do is just to get a field myself, to have the possibility of having an orchard, because with 100 metres you are autonomous for one person, with 100 square metres, both fruit and vegetables. So, this is a beautiful thing for many reasons."

Rebecca believes that many people cultivate a kitchen garden driven by economic motives and comments:

"I insist that we have a culture of doing the kitchen garden to save money."

As for her, however, she says she does it because she wants to be sure of the quality of the vegetable she eats, and she explains:

"I don't do it to save money, because surely my garden if I went to buy vegetables, even organic ones, since I produce for three families … It is what my husband tells me: 'Go and buy your own organic vegetables, you spend less anyway'. But I don't do it for that. It is because I am sure of my product, I know what I am eating, I want to have it all year round."

Shirley also reflects:

"It's not even a question of economy, in my opinion, because if I have to look at economy, I keep track of all my expenses, I spend more on my vegetable garden than I do on shopping at the supermarket. It's a question of mentality, I don't know, what it depends on honestly. Maybe as a family, as a family footprint, the fact that we always ate things that came from our own work."

Pictures of some of the kitchen gardens observed during the fieldwork are presented in Figure 12, although the production is either non-existent or limited to a few vegetables during the winter.

Figure 12: Pictures of some kitchen gardens in the municipalities of Madruzzo and Cavedine in February-March (photos by Maddalena Cirani).

Food sharing

Food sharing is a common practice among family members, as well as friends and acquaintances. Food sharing entails that self-produced food such as vegetables in kitchen gardens, fruits or eggs is at times given for free to family members, friends, neighbours, or acquaintances. Frank, for example, receives vegetables from his mother all year around. He says:

"We never buy vegetables, except every now and then [...], like now the winter radicchio is finished and there's nothing, nothing, nothing in the kitchen garden. My mum has thousands of square metres of vegetable garden that she gives away. She maintains three families, in addition to what she gives away and what she throws away. In short, we rarely buy vegetables."

Dorothy who doesn't have a kitchen garden buys vegetables at Cavedine's market on Monday morning or at Isabella. However, in the summer she asks her sister:

"There's my sister who has a kitchen garden. […]. She has a large kitchen garden for her family and so many times I go to her. "Give me some salad" and then she gives me some."

Food sharing also represents an act of friendship and appreciation. Daniel lived in Cavedine for years, and had a few neighbours and acquaintances who provided him with such plentiful quantities of tomatoes in the summer that he had to make preserves or otherwise cook them not to waste them. He recalls:

"I regularly found tomatoes, courgettes, aubergines, potatoes, and cherries outside the door. And what else? Swiss chards. And so, you know, it would happen that neighbours who had bigger plots of land would leave something outside. It was a very habitual thing."

Similarly, Nancie confirms:

"My neighbour sows corn and then makes flour for polenta [...]. He gives some to me. We have a friendship and sometimes we exchange things. [...]. We give [in exchange] some products from some cooperatives, some jam, some honey or a piece of cheese from the cowshed. [...]. So, we return the favour."

At times, acquaintances use food sharing as barter. Ken explains his parents' food exchange with their neighbours as follows:

"They often take eggs and honey from their neighbours because they trade, let's say. No one takes out money, but they swap, who has this, who has that, maybe it goes by periods. Not me, maybe I exploit this network of my parents."

As variation of the same habit, Shirley reports helping her aunt pick chestnuts, and using food as payment. She explains:

“[My aunt] has a chestnut grove, she must have three or four hundred chestnut trees, marrons, and in fact I help her when there's harvesting to be done, because otherwise, poor her! So, she pays me like this. I always say, 'I don't want money. It's enough for me if you give me apples and pears, and some rabbits'.”

I also directly experienced food sharing when one of the interviewees who, after the interview, showed me her food pantry and offered me plenty of foodstuff. I returned home with a full bag containing a glass jar with tomato preserve, one with jam of pears, a small bag with sliced dried apples, kiwis and persimmons, syrupy figs and a thick plum jam.

Purchasing of Italian and local products

The classic method of procurement is shopping food. Participants reveal a general trust for local and Italian products, although on different grounds. Many interviewees aim at sustaining the local economy. Almost all respondents mentioned the fruit and vegetable shop “Isabella” in Sarche’s shopping centre next to the ORVEA grocery shop for their supply of vegetables. “Isabella” is a family-run shop and farm with own production of vegetables through conventional agriculture. As Erik observes:

“A lot of fruit is theirs and some, alright, is bought at the market in Verona.”

Different reasons underly the choice of “Isabella”, but the most frequent concerns the offer of fresh and local products. Linda explains her preference for “Isabella” since it is:

"Super zero km, lots of things [are] obviously in season [...] and then because she's a local girl so it's nice to support her.”

Lucy says she prefers to purchase vegetables there than in a shop where one doesn’t know the origin of the food. “Isabella”’s choice not to use plastic bags and packaging, in general, is well perceived by many participants. Patrick says:

“They serve in paper bags [...]. Just going there, I skip getting a lot of plastic.”

Other respondents prefer to purchase local food to help friends and because they trust their products. Melody, for instance, purchases broccoli of Torbole[13] and meat from a friend. She also believes that local products have superior quality. She explains:

“It is a bond of friendship, for my friend. I know the effort that goes into the production of a product, so I try very hard to support that.”

13 Torbole is a small village by the Garda Lake. The broccoli of Torbole (Brassica oleracea var. botrytis) is a special variety of broccoli that grows thanks to the favourable climatic conditions (https://www.fondazioneslowfood.com/it/presidi-slow-food/broccolo-di-torbole/).

The interconnection between purchasing local food and reduced emissions due to less transport is rarely mentioned. Only a few people bring this aspect up, like Patrick who states:

"I buy something that hasn't been around the world. In fact, when I was in Australia, for example, I used to eat a lot of avocado because it was local. Then when I came back here when I saw it coming from Chile […] then sometimes I take the Sicilian ones that they have at Isabella, otherwise, however, consumption has decreased a lot since I came back".

Italian products are also generally preferred, as described in the section on meat consumption. The fact that supermarkets sell vegetables from Holland, was commented by Rebecca as follows:

"When I go to ORVEA in the summer … I mean, we are the home of peppers, tomatoes, cucumbers and courgettes and I see the peppers come from Holland [...]. They´re square, perfect, they look like they´re made of plastic, they come from Holland. Once I even told them, "Can you?" - apart from the fact that I don´t buy stuff unless it´s Italian, but not for me, because I have my own peppers - "But can you - I told him - sell peppers in July that come from Holland, that we are the homeland of peppers, of Solenacae?" And he said, "Eh, but people want them perfect, they're cheap" [...]."

Cindy's parents always purchase food in low-cost supermarkets such as Eurospin, Aldi or Penny market. However, they prefer to buy olive oil from a friend's own production in Riva del Garda. When they don't have that oil, she comments:

"Otherwise, the one [olive oil] in the supermarket, which is possibly not EU but is from here or at least Italian. To that we pay a little attention."

Dave shows another way to caring for Italian production. He is highly inclined to purchase Italian speciality foodstuffs not available through the conventional distribution system and may travel long distances throughout Italy, sometimes in conjunction with other journeys and sometimes for this specific purpose, to procure them. He shows some perplexity about the mainstream supply chain for speciality products, and therefore tends to look for small producers of excellence and terroir products to buy them directly from the producer.

Meat consumption

Given the relevance of meat consumption in policy making an entire section was dedicated to this topic. Almost all interviewees report having reduced meat consumption in the last years. Rebecca recalls being used to eat meat every day when she got married forty years ago. They procured meat locally. She says:

"In the first years that I was married for at least twenty years, we would go to a farmer. He had his beast. If he killed it, we would take a quarter, half a beast, cut it up, put it in the freezer and eat that meat."

Now however, she tends to prepare fish instead, and cooks very little meat, like on Sunday when she makes polenta. They also began to consume game meat such as rabbit, roe deer, chamois or red deer. She explains:

"I prefer fish and my husband and son also go hunting and we consume game. [...]. You can also use game meat in many ways, you don't just make polenta and stew, you make steak, you make hamburger, you make meat sauce."

Katrina has also reduced her meat consumption. To explain her decision, she says:

"It is a choice of the last five years, of the university period, because in any case, even producing the meat we eat, maintaining animals or providing water, pollutes. And so precisely, limiting [meat consumption] would be an advantage."

In the same line, Cindy reports that her mother has reduced meat purchases lately. When asked about the reasons, she says:

"There is an increasing awareness about environmental issues. […]. [I am thinking of] the impact of emissions from livestock farms, in short, and water consumption. […]. [My mother] has reduced the purchase of meat a lot for health, because you should not eat too much meat. […]. However, precisely, eat less, eat better, if possible. And then, however, the abhorrent conditions in which animals are kept on farms, that too, because it is not feasible, it is not humane, i.e., they are treated just like objects."

She also reports that they have also started to buy plant-based hamburgers to replace meat. Her mother, therefore, purchases organic meat. The country of meat production is an important factor for many respondents and Italian meat is often considered better in quality than meat from other countries. Melody likes to eat at McDonald's with her friends from time to time. When reflecting on the health implications of this choice, she explains:

"Although there has also been a lot of focus lately on the use of Italian meat and so on. It may not be the best meat there is in terms of quality, but not exactly the worst either."

Adam also relies on the Italian label as a guarantee of better quality, and about his latest purchase he says:

"Then I also got some slices of meat [...] I think it's branded AIA which is a company that does large scale. I think it's really Italian."

Choosing local meat is a further step taken by some respondents to ensure meat quality. Patrick recalls:

"When I bought [meat] at ORVEA, reading the label it said, 'reared in Belgium', 'slaughtered in France' and 'sold in Italy'."

Therefore, when he goes to Trento, he goes to buy meat from the "Federazione Provinciale Allevatori Trento", since it seems strange to him to buy meat that has gone "round the world". Furthermore, having studied at San Michele all' Adige Agricultural Institute, he knows some breeders that are members of the

federation, and he likes supporting them rather than “buying from who knows who”. Brenda also purchases meat at the “Federazione Provinciale Allevatori Trento” because she feels safer from the quality and health perspective. She feels safer purchasing Italian products, on the one hand, because her partner, who is an organic producer of apples, told her that “Italian legislation is much stricter on certain uses of chemicals, whereas in other countries of the world, this protection is lacking”. On the other hand, she explains that she knows the supply chain and if she knows that a producer is from a certain area where there are fields, then she feels more confident that it is not an intensive production. The direct connection with the producer is also a way used by some to obtain meat quality. Melody’s family, for instance, purchases meat from a friend. She emphasises how the meat tastes better and adds:

"Even just when you cook the meat, it loses an amount of water, but it is not even comparable to what it loses when you cook a hamburger you buy in the supermarket.”

Talking about animal rearing, she also underlies:

“I know what he feeds them. I see the life these animals have, i.e., how they are treated. In the sense that it's not that they have a fixed enclosure, that they are forced to stay there, eat that amount, stand still because they get fat faster. I mean it's all a very natural thing.”

MBT_34 has chosen to be vegetarian. He says:

“I made a vegetarian choice that was initially conditioned by the environmental factor. Second was health. And the third the ethical aspect [...]. I realised that today these values are completely reversed, and I also wonder how I didn't get there sooner. That is, the ethical choice is the absolute priority.”

Dave also recalls having been vegetarian for about ten years. Most of the interviewees, however, is not vegetarian. Rebecca, for instance, says:

“I'm not for 'I don't eat meat because they make the animal suffer'. I mean, for heaven's sake, when I see those [...] documentaries that they make on television I feel ... when I saw the one on geese, the one on chickens, on *Report*, those programmes tend to make me suffer because it's not right to make animals suffer like that. But I have a concept that an animal is there, the cow is there because it is a process, it is part of life.”

Experience from having worked with meat also provides a tool to discern meat quality. Dorothy purchases meat with her partner and explains:

“He sees what the meat is just like. I mean, he had sheep [...] so he sold sheep a lot. He used to kill them and then sell them. He knows about meat. He sees if the meat is good if it is good cut or not. [...]. Then he had cows in the cowshed many years ago, then he knows. He knows what it means.”

Nevertheless, not everyone knows or can afford to take meat quality into consideration. Nancie, for instance, who also limits meat consumption in her family, purchases it in the low-cost food chain EUROSPIN in Trento, like most of her food, due to economic constraints. She says:

"We eat very little meat, once a week, and we always get it at EUROSPIN."

Once a year, however, some friends slaughter an animal and then they buy some meat from them, but this only covers the family's meat consumption for a couple of weeks. A few interviewees are also concerned about the use of hormones and antibiotics. Katrina, for instance, points out that in her family they decided to limit the consumption of meat:

"also because of how it is produced, in the sense that once upon a time it was more individual producers, everyone had their own animal and so you knew what you were eating, let's say. Buying it now, you no longer have these certainties, to make things grow quickly."

For the same reason, Shirley comments:

"Of meat I only eat stuff we make: chickens, hens, turkey."

She admits that seldom, when they have guests, they buy beefsteaks and then she also purchases *carne salada*[14]. She says that until a few years ago she used to prepare it herself, but she stopped now because the meat no longer releases the necessary blood. She adds:

"No look, one should make one's own meat, but how do you do?".

Seasonal food

Purchasing seasonal food is also part of the sustainable practices towards sustainable food systems and it is often mentioned by the interviewees. Having a vegetable garden enables individuals to link vegetables with seasonality. Jennifer, whose parents have a vegetable garden, sometimes picks vegetable and says:

"I also realised living alone [during my studies] that it is also counterintuitive, that even if there are courgettes in the supermarket in January, I don't buy them and so it is quite automatic to buy seasonal things."

Similarly, Patrick, who receives vegetables and fruit from his grandfather who has a large vegetable garden, states:

14 *Carne salada* is a traditional speciality from Trentino. MTB_30 used to prepare it and she recalls "When we used to make it at home with daddy, you'd put the meat down with salt, bay leaves, garlic, in short there's a whole procedure, then you'd put the weight on it and you'd keep it there in a cool place until it matured 15-20 days, 25 now I can't remember the right period. Then at a certain point you would see the blood ... practically it was soaking in this blood."

“I also try as much as possible to follow the seasonality, knowing more or less the seasonality of the products. Then it is not always possible [...]. Strawberries, in winter, or tomatoes, I always try to avoid them also because they don't usually give the same taste satisfaction as in summer.”

It appears that people without connection to kitchen gardens are less aware. Rebecca speaks about a friend who tried CSA boxes for a while and then stopped because dissatisfied with the limited variety of vegetables. She comments:

“I told her 'Those are the vegetables of winter. In winter you eat kale, cabbage, radicchio, celery, leeks, and those are the vegetables of winter'. It's difficult, so many would like, I don't know, courgettes in the winter box. There cannot be this.”

Sharon reflects on the implications of purchasing non seasonal food. She explains:

“I believe, however, we can all make a difference. Maybe not using the car to travel 200 metres or especially in the shopping we do during the week. I think [...] we can make differences based on seasonality. If [...] in winter you get a craving for cherry tomatoes, […] they are not good. A lot of money is spent to grow them because they have to heat [the greenhouse] anyway and most of the time [the tomatoes] are above ground, so they are bombarded with water with products to make them ripen. They miss the sun and on top of that they cost a lot to transport.”

Loss of connection with nature is mentioned as one reason why some people ignore what fruits and vegetables are available in each season. Frank and his partner also resort at times to “a beautiful Slow Food drawing” with all fruits of the season to get inspired, when deciding which vegetables to purchase. Sharon reports also of a person who told her having downloaded an App which describes what products are naturally available in different seasons. The global food system is also blamed for the fact that people do not buy seasonal products. Rebecca notices:

“The fact that you can find everything in supermarkets, including my daughters-in-law who have learnt this now, that there are vegetables that you eat in summer, vegetables that you eat in winter. I speak for my daughters-in-law, but for so many it is normal to eat courgettes in winter, aubergine parmigiana in winter, melons. I mean, why? Because the supermarkets have everything, all year round. You find oranges in summer and strawberries in winter.”

Additionally, the marketing strategies of supermarkets, exposing shiny and beautiful vegetables, although criticised by most participants, nevertheless induce some people to buy regardless of seasonality, such as Melody and Dorothy who show being instinctively attracted to the vegetables displayed in supermarkets. When shown the picture from the supermarket Melody says:

“If I were in a situation like this [in a supermarket] I would at first glance get them [nice red apples], in the sense that I see a nice product etc. and it would certainly entice me to buy.”

Cooking

Cooking or food preparation is a widespread practice among the interviewees. It is also critical towards sustainable diets and sustainable food systems as it results in the reduction of UPFs consumption and the related industrially produced staples. All participants cook meals from basic ingredients rather than purchasing processed food regardless of gender and age. Dorothy says:

"It is difficult [that I buy] packaged stuff. I've never been fond of packaged stuff. I really have to be taken by the neck to get something packaged. I do without it, and if I know that the next day I can go somewhere else to get what I need, I wait."

However, purchasing packaged food turns out to be convenient when time is pressing. This is particularly evident in families with children, as explained later in the dedicated paragraph on time availability. However, working people also meet the same challenge and sometimes resort to food choices that accelerate preparation time. Talking about polenta, for instance, Daniel says:

"I have to be honest, I always get it, I'm a bit ashamed but I do, I always get it at NaturaSì, instant, it takes 8 minutes and I make a wonderful polenta taragna which is clearly not the same thing."

Although women appear to be cooking more, cooking seems not to be gender or age related. Patrick, for instance, who is a young guy, explains:

"I like cooking, so I mainly buy ingredients with which I then prepare my recipes [...]. I like it, I really relax cooking, so when I have time, I rather cook twice as much and then reheat what I have made, but I hardly ever take anything pre-cooked."

Debra, conversely, confesses to being overburdened by having to cook:

"I cook a lot. I cook, yes, yes. Lunch and dinner, lunch and dinner, lunch and dinner."

Linda who is a highly education middle-aged woman, says:

"I don't like cooking, so it's a burden for me."

Similarly, Isabel, another middle-aged woman teaching at a kindergarten, states:

"I'm not really a person who likes to cook",

although she mentions, later, that she cooks bean soups, almond flour cakes, tomato puree, crackers with seeds and even bread. She bakes with the bread machine, as several other participants do. Ken, a young manager, also bakes his bread but he says:

“Tomorrow I'll bake. I'll do a 24-hour rising, not too long. [...] .[I bake with] sourdough. It's another thing, there's no comparison. [...], I can't eat the other one anymore.”

Many people also mention baking their own pizza. When asked about their dinners, many respondents report having eaten different kinds of soups, cooked and fresh vegetables, and some of them report having eaten steaks, hamburgers or chicken. The majority enjoys food from Trentino traditional cuisine such as *strangolapreti*, *canederli*, polenta, strudel or *gnocchi* and can cook this food. It also emerges that the younger generation like to eat at McDonald's more often and small children are particularly keen on eating there. Erik is the only participant who mentions having eaten ethnic cuisine that is couscous with fish and vegetables, as well as finishing a leftover of quiche. They try to teach their children that it is possible to eat different tastes that are not typical because he says:

“[That] also opens the mind, opens up the world. So, when you go around you just try to taste particular things, although with teenagers it's difficult, it's not easy, because the first reaction 'Oh God, that's disgusting'.”

He also mentions his mother’s ability to be practically self-sufficient. He explains:

“I have a mother who taught me that one can be 100% autonomous and so she does everything. She has the sweets, she has the biscuits and so we have been taught. She can do it. She is retired.”

In summer many interviewees also report preserving vegetables and fruits for the winter, making tomato preserves, jams, syrupy peaches, apple juice. Some freeze vegetables, such as Dave who says:

“We have a freezer especially for all the produce from the kitchen garden, so consider that all our vegetables, all our minestrone production is in there.”

Numerous participants report preserving large amount of food during summer such as Jennifer who explains that during summer they cook tomato and fruit preserves, so they are quite autonomous. Eating together, especially at dinner, is common. I personally was invited by an elderly interviewee to participate in the lunch she organises about once a month, in which she invites her sons and daughters-in-law. The food she prepared, delicious potato *gnocchi*, was followed by cheese, bread and salad, confirming the healthy diet based on local tradition and the habit to eat with family.

Waste management

Waste management is the end of an open linear food supply chain such as the globalised food system, while it represents the input for production in a sustainable circular food system, as shown in Figure 11. Aversion to plastic packaging is expressed by most respondents and is therefore, presented first, although food waste is also strongly criticised. Various strategies are adopted to reduce both. Everyone complains about the unnecessary plastic packaging in supermarkets. Isabel, for instance says:

“Unfortunately, if you go grocery shopping, you often arrive home with a shopping bag that, emptied of its packaging, fills a basket with plastic and paper.”

Similarly, Linda, who purchases most of her food at ORVEA grocery shop, comments:

“In fact, the plastic is the [recycling] bag that gets immediately filled within a few hours. When you go shopping you can already throw it away. It's a shame.”

To limit packaging waste, she always goes shopping with her own bag or returns egg-packages and old paper bags when purchasing at Isabella. Regarding the bags for bread that contain a transparent plastic front, she agreed with a friend they would reuse the same bag. She also says:

“Even talking to the girl there at the counter if they allowed us to go with our container ... more hygienic than that, I'll bring you my container! In fact, when they ask me if I want a bag or the plastic tray, "For goodness’ sake, no trays!". I have qualms about throwing them away afterwards so I keep them there, they might always be needed.”

Daniel is also concerned about plastic and, although it takes him three weeks to fill the plastic recycling bin, nevertheless he would like to produce much less. He ascribes this to some food choices, and he emphasises some bad plastic packages used for *spetzl* or *gnocchi*. He points out that at Coop, there are no fresh fruit and vegetable products that are not packaged and, since he likes some of the Coop's cereal biscuits very much, he ends up with plastic, even though he admits that a similar product, but not as good, is sold at NaturaSì in a 100% recyclable paper package. When asked his opinion on the quality of vegetables in plastic packaging, Frank says:

“Typically, it is the best product that is packaged that way. But […] I don't put it to myself as a question.”

Isabel, however, expresses the opposite opinion. She says:

“Grapes are found in these packages, but they are not always good, in fact I would say most of the time they are not good at all. That is, it happens that when you take these types of packaged foods the taste is not the real taste, even clementines, that is, they taste different from what you are used to eating. We eat courgettes, I eat courgettes from the vegetable garden, and to be honest, eating a courgette like this tastes like nothing at all.”

On plastic packaging, Adam says his wife sometimes purchases salad in plastic bags, and he explains:

“Now and then my wife takes the packages [of salad], but rarely because I always tell her that it's no good in plastic, so we wash it. So, on average we don't take it in the packets.”

Plastic is also sometimes associated with diseases. Miranda vents:

“I am convinced that cancers come from plastic [...]. We were born in plastic and grew up with plastic and we pay the bill. [...]. What I can avoid I avoid. For example, if I can I conserve things in, there used to be the habit of plastic containers [...], it annoys me. So now I use glass also to put in the freezer. [...].”

Daniel shares the same concern:

“Plastics really are a contemporary cancer of galactic proportions, not only from a health point of view, so really carcinogenic or with the potential of endocrine disruptors that it can give, in short, everything it carries.”

Then he refers to the dumping of plastic in other countries such as Turkey. For consumers it is difficult to be sustainable in a comprehensive way. Adam attempts, for example, to synthase different sustainable practices by choosing products on offer. In addition to be cheaper and provide an opportunity to try something new, he stresses that this food would otherwise be thrown away. He underlies:

“I remember reading a statistic that said that with the products thrown away we could feed the entire population of the Earth four times over.”

However, when showing the pudding he bought in offer at Conad, he realises:

“[The offer] was a package with these plastic cups, not very sustainable actually.”

Adam also resolved to bake bread because he noticed:

“Otherwise, you were always throwing away bags, lots of bags. [...]. Bread is sold self-service, that is, you take it, put it in the bag and weigh it. But it's a bag that has a plastic part because it's transparent because they have to see inside it.”

Brenda is careful to use biodegradable bags when purchasing vegetables and sometimes puts the price-label directly on the product to avoid using a plastic bag. However, Daniel comments on biodegradable bags:

“[Plastics] are a big problem because, in fact, many people think they are recyclable, but they are not. [...] Never mind the fact that we export them, and they used to end up in China before they blocked us, now in Turkey and other areas.”

Recycling correctly is also reported as important. Linda says:

“Separate waste collection has always been strict in my house.”

Almost everyone detests food waste and declares efforts to prevent it. Ken uses a specific food plan tailored for his needs which enables him to plan his grocery shopping on a weekly basis, resulting in basically no-waste. Patrick is careful in his purchases as he reports:

“I don't really have a weekly menu, but before I go shopping, I already decide what I'm going to eat during the week or on the following days and I always try to finish everything I buy and use everything. And anyway, whatever, of course there is some waste [...] so I go and throw it in the organic.”

Linda decided, however, not to make compost so to avoid the municipality withdrawing access to the wet waste recycling facilities. Most respondents, however, compost or give leftovers to the hens. Isabel for instance admits:

"Sometimes some food remains in the fridge,”

but later she adds that she throws it in the compost:

“I have the compost in the garden.”

The use of compost to recycle food waste is very common. Some people simply dig a hole in the soil of their field and through the waste there, covering the hole every now and then. Frank owns a hunting dog, and lives nearby his mother who has a kitchen garden, hens, and compost. Referring to their management of food waste in the family, he explains:

“We have the compost, then we have the hens, and then we have the dog ... So usually the dog first, then what the dog doesn't eat the hens eat, if neither the dog nor the hens eat it goes in the compost.”

Complains on food waste emerge also linked to children. Referring to her nephews, Rebecca says:

“People throw away a lot of food, but a lot. So much waste of stuff to eat that it is an unbelievable thing. [...]. All this waste even the children, these dishes, they throw everything away.”

Food waste in restaurants as a cultural malpractice is mentioned. Debra recalls:

“I remember my daughter worked in a pizzeria, and we had pork, and she used to bring us ... but it was crazy stuff. People go to restaurants, maybe the ones that are half on a diet and eat two bites and leave the rest [on the plate].”

Food policy in schools is particularly criticised. Isabel reports:

“At school, for example, they are putting in some things that I think is a bit exaggerated, as long as children eat everything at home, they go to McDonald's. Now they're also including millet. Maybe we have a cook who's not so good, and these dry meatballs, these things that the child ... there's a lot of leftovers, so much waste. Today, for example, there was meat and mashed potatoes, which wasn't very well done, was thrown away. How much stuff is thrown away, that's something that's not even educational for children to see all this waste of food.”

Similarly, Nancie, considering food school waste, makes the following point:

“I am sorry that, for example, in school canteens there is so much waste. I mean, this is something that we really need to understand in Europe. I mean, we should go and see, or we should go days without eating, so that we understand because this stuff is really endlessly sad. I also have friends who work in the canteen, and they can't even take the food they discard because of regulation.”

Clinchers for change towards sustainable food practices

Some factors such as time availability, access to land, affordability of organic products, taste and food quality, attitudes on food and food production appear to affect the implementation of sustainable food practices. They are therefore analysed in the following paragraphs.

Time availability

Time availability is crucial to implementing several sustainable practices outlined in the previous paragraph. As such, lack of time emerges as a barrier towards sustainable food habits. Many people, particularly families with children, struggle with this issue. The absence of many parents from children's and community activities is explained by Adam in these terms:

“It seems that we are like in *Alice in the Wonderland* that there is the rabbit who says "There is no time! There's no time!" and unfortunately that's how it is.”

Haste is the main reason reported by people purchasing UPFs. Although all respondents prepare their own food, processed food offers an easy solution when time is short. Brenda and her partner cook 90% of their food from raw material, but she admits that the remaining 10% is pre-packaged food. She says:

"Anyway, maybe sometimes for reasons of time, we buy something already made because then it is easier to prepare.”

Erik explains his purchasing of frozen pizza like this:

“I buy one once every six months because you never know the emergency. It's always that talk of a hectic life, and every now and then the safety net of saying "Look" if there's the kid alone "warm that one up".

People who work and have no family feel nevertheless pressed. Sharon, for instance, is also haunted by the lack of time but solves the problem by having lunch with her mother who prepares the food so that she can work until the last moment before sitting down to eat. In the evening, on the other hand, being alone, she prefers to cook herself soup or very simple food, even if it is late. Isabel, who has a grown-up daughter with children and now lives alone, also complains:

"I have very little free time when I work, I have very little.”

Dorothy who is retired, has time to cook most of her food from scratch. She generally tries to prepare food in advance if she knows she will be busy and explains:

"No, no. I do it all myself. I have to be in a hurry to buy something I can heat up."

She also adds later:

"I like to prepare food. If I have the time, I like it."

Time compression affects inevitably the possibility to dedicate time to purchasing more quality food and cooking. Erik and his wife, for instance, try to diversify the food they buy although, due to time constraints, often end up falling back on the same purchases. He adds:

"[We try to vary the food we prepare] as much as possible, with the time we have and the energy we have."

Melody, reflecting on her family purchasing habits, comments:

"[Cooking] in any case takes time, so it is easier to buy vegetables ready in bags, washed."

Similarly, Nancie, referring to products in plastic packaging in supermarkets, comments:

"Sometimes it happens, yes, especially when I am in a hurry I take [them]."

Lack of time impinges as well on other aspects of maintaining a healthy lifestyle, such sport. Frank who has a small child, says:

"We practise sport, running mainly because with little time you can ... it is very efficient and takes very little time."

Likewise, the practice of having a kitchen garden is jeopardized by the stressing times of modern life and Erik, who owns a kitchen garden, clarifies:

"[We cultivate] when we can ... that's challenging too, [...] during the summer, also because during the year it would be too demanding, just to be able to cultivate."

Other sustainable practices such as purchasing in farmer markets is impaired by lack of time. Brenda says:

"I don't go, not because I don't want to, but because I just don't make it."

Similarly, Frank reflects on the reasons why his wife wouldn't go to the farmer market as follows:

"Her mother does, for example, I know she often goes to get the farmer box, those things there, but my partner doesn't […], because she works, she's a full-time worker. We have a child and so she goes shopping when she's in a hurry and buys ... The supermarket is convenient."

Many try to optimise time and purchase food in food stores nearby the working place or on the way home. Ken, for instance, who doesn't like to make grocery shopping, says that he buys food nearby his working place:

"Because I optimise my time. I work there, otherwise I wouldn't know when to do it because I don't go shopping in the weekend."

Access to land

Many of the interviewees own land. Some have just a large plot, while others own several plots of land scattered in different areas. In these plots, they plant kitchen gardens, fruit plants, maize, wheat, olive trees or vineyards. Jennifer, for instance, says:

"We have some land, here and […] above Lago di Cavedine, some olive trees, so for some years we have also had some oil",

and she adds later:

"Then we also have another few plants in the Ponte Arche area with some apples, and we also grow some potatoes. We also have a bit of a vegetable garden there, so we also grow some pumpkin."

Those who have no, or limited, access to land cannot grow a vegetable garden and must rely on shops, family or friends to procure vegetables. Adam, for instance, dreams about buying a piece of land. He says:

"One of the things I would like to do is just to get a field myself, to have the possibility of having an orchard, because […] you are autonomous for one person with 100 square metres, both fruit and vegetables. So this is a beautiful thing for many reasons."

Dorothy lives in the block of flats and also wanted a kitchen garden in the common garden, but she encountered resistance from her neighbours. She explains resignedly:

"I never had it here, because the people above did not want it. [...]. Because they, his brother [...] at his house has a kitchen garden and so they go to him to make the kitchen garden. And they don't care if I have a kitchen garden or not. What do they care? Because at the beginning I said, 'Let's make a small kitchen garden. I don't pretend a lot, just so much', 'No it's nicer the meadow'."

Cindy, who is not originally from the area, has only a small plot of land. She clarifies:

"We don't have fields; we don't have anything. We are, like, the only family in Pergolese that has no land. We used to have this little, very little, space of land near the house, but then we left it a bit fallow and only the rosemary survived and went on growing on its own."

Affordability of organic products

The price of organic produce is often presented as a major hurdle for people's acceptance of purchasing organic food. Dave, for instance, believes that the price of organic food is inflated and states:

"I always suspect that they march a bit on [the price] but, as a [...] mini farmer myself [...], I realise the effort that goes into it and, if you do real organic farming, also the quantity that you must eliminate because, by not using chemicals, some things [insects] attack you. However, in my opinion, they rip you off a bit."

In the same line, Erik expresses doubts:

"It cannot be that an organic kiwi costs so much compared to a normal kiwi. So, in my opinion, some people take advantage."

On the other hand, some participants contest the excessively low prices of some organic foods in supermarkets. Shirley, for instance, while acknowledging cost differences between large scale production and her own, nevertheless says:

"Even organic chickens [...]. How can you buy a chicken for 4-5 EURO a chicken? I have chickens. Last year I got 10 one-month-old chicks, 5 EURO each, just the chick. I bred them for 6-8 months to have a chicken. We killed the last two on Saturday, they weighed two kilos each. Once you take out the bones what do you have left? [...]. In the end how much does this chicken cost me, to feed it for seven months?".

She also reports of a local organic producer of wheat, barley and corn from whom she buys wheat and barley at 2 EURO per kilo. She emphasises:

"Then I have to grind it myself, pass it […]. One says 2 EURO per kilo ready flour. No, no. Ready-made flour he sells for 3 EURO, 3 EURO and a half and there are people who buy it."

The high price of organic food hinders some individuals from purchasing it, although there are different opinions on the topic. When asked about organic products, Dave answers:

"If I had to be all in on the organic, I would not make it, but neither economically."

Later he also underlies:

"And even thinking that we, all things considered, could afford it, how about a blue-collar worker?"

Cindy likes NaturaSì, as she regards it as a serious company that reflects her vision. However, she comments:

"But it costs a lot unfortunately. [...]. If I can avoid spending a fortune, I prefer. [...]. At the moment, I don't have the possibility to shop at NaturaSì that often."

Rebecca, who is almost self-sufficient on vegetables, also observes:

"Luckily, I don't buy vegetables, because at NaturaSì vegetables cost the wrath of God."

However, several other participants believe in the choice of organic food. Daniel, for example, says:

"So yes, organic is still a priority choice, until I can both economically for now and in terms of time."

Attitudes towards food in supermarkets

The intertwining between consumers' attitudes in relation to supermarkets' food impinges on sustainability in food practices and food systems. Some aspects are highlighted below. Looking at the figure of inviting vegetables and fruits displayed in supermarkets different reactions emerge. Some interviewee reacts positively. Nancie for example, comments:

"Beautiful colours. Looks like very well-kept fruit. Yes, very beautiful!"

Melody is also instinctively drawn to them, although soon after, when faced with the image of the CSA box, she corrects herself and states that she would prefer the latter "because it seems to me a much healthier […] situation". On the same picture, Katrina observes:

"Sometimes it looks like they are beautiful and so they are also good, but, in reality, maybe not. There is something a little bit uglier and it would be just as good. Yes, a little too much perfection, perhaps."

Patrick defines a quality product as:

"A product that basically matches the characteristics I expect from that product, that the fruit is sweet, tasty. Maybe I don't care if it's really nice or big or... that it 'looks good' in quotes, rather that it tastes good. So, the sensory characteristics, rather than the visual ones."

The majority of the interviewees, however, criticises the shiny perfection of supermarkets' veggies and fruits. Food durability is crucial in supermarkets, and it is also expected by consumers. Shirley, for instance, describes the pears of her aunt's one hundred-year-old pear tree, which produced about three quintals of fruit last year. She explains they are deliciously sweet to prepare cake and strudel. They keep hard as stone for several months during the winter, but then ripen very quickly. When asked if one can find this variety in supermarkets she comments:

"Those pears are hard to find because nobody would eat them. Who eats those pears there? Also, because the problem is that when they ripen, if you don't eat them within 3-4-5 days they rot. That is, as soon as they are ripe you have to eat them."

Several interviewees talk about the broader implications of food production when looking at images of farm workers. Patrick, for instance, reflects:

"One should always think about who is behind it and whether something costs a little too little. It could be that those who did the work were not paid that much."

Ken says:

"Rather than choosing organic, I lean more towards Fair Trade."

Someone cares about how food is produced. Brenda for instance, buys eggs from "hens that live happily" and rejects intensive animal husbandry "in respect of the animal". However, the implications of industrial meat production are not always understood. Patrick, who yet purchases meat at the "Federazione Provinciale Allevatori Trento", admits:

"I never paid attention to whether an animal was pasture-raised or intensively farmed."

The quality of food sold in supermarkets is also often questioned, including supermarkets' own organic brand products. Rebecca thinks:

"The organic one I buy at ORVEA, which I buy rather than nothing at all, I am convinced that at certain prices, I would not want [...] that is, branded in Italy, but I would not want it to come from abroad. There I am a bit hesitant as to whether it is really organic."

Experience with kitchen gardens or homemade or artisanal food makes consumers more critical and demanding on food quality. Shirley produced her own goat cheese a few years ago and is often spurred on to do so again. However, she reflects:

"I want good milk, because I don't want this milk from the goats who give them crap to eat and the milk comes out yellow instead of white. This is not normal. The goat's milk you buy in the shop is disgusting, it's undrinkable. I remember that the milk that I used to milk from my goats was pure white, but a real white. And there was a neighbour of ours here [...] he used to bring me a wheelbarrow of grass for my goats and 'Tell me how I can thank you!", "Give me half a litre of milk". He only needed half a litre of milk."

Additionally, although the participants do not frequently consume UPFs and do not purchase chips, most of them admit to making exceptions and willingly eat chips or sodas if invited to parties or sometimes for aperitifs.

Reflections on food and food production

Environmental issues and organic food are given low priority by some interviewees. Linda's formulation well describes this disposition when she says:

"All those ecological things interest us relatively."

She adds:

"[We always buy in] supermarkets not super specialised things like NaturaSì",

and explains:

"Since food is not my cult and food-making is not my cult, I cannot get caught up in this ideology of organic."

Some individuals tend to consider those who favour organic food as extremists. In this respect, Adam states:

"Some are really purists and say organic or nothing. I tend to be a bit more practical too, in the sense that I realised that being neutral, because I had studied, I had done a course after university where they showed us that being completely neutral in tourism, it was a course on tourism, was impossible, so the absolute is always difficult."

The wording of some interviewees reveals a judgemental attitude towards those growing vegetables without phytochemicals and purchasing organic food to avoid synthetic chemical residues. When describing his mother, Frank, for example, says:

"My mum is the fundamentalist; I mean she really is... I would say she buys almost exclusively organic. She buys "Alce Nero"[15]. She only […] consumes biodegradable products."

Lucy also describes the attitude of a friend who refuses using pesticides in her kitchen garden as follows:

"She is fixated on the natural and what comes, comes. [...]. Too fixated. In the sense that when you have a plant infested with lice [aphids], that afterwards the plant dies, you have to do something.... And she doesn't, she really doesn't, and I think that some help, a little something, I mean you have to give it."

Isabel who conversely is particularly careful not to use pesticides in her kitchen garden, recalls:

"My mum, who used to cultivate it before, had a bit of a habit of putting poison for the snails. Now fortunately my mum is old, we no longer allow her to use these things, because I prefer to have a healthy vegetable garden, without poisons of any kind here. She used to put snail poisons, things that were unacceptable to me."

15 "Alce Nero" is an Italian brand which sells only organic products (https://www.alcenero.com). The brand is generally more expensive than other organic labels.

She explains that now they use oil of neem when planting salad which she regards effective against pests. Rebecca who values growing food without pesticides, observes different people attitudes in food purchasing in different stores. She comments:

"I see a lot of people [buying at ORVEA] with BMWs, long cars from here to there and I look in the trolley: the cheapest, cheapest stuff there is, the stuff that costs less, however good it may be... It's something that makes me angry inside, because if I see non-EU citizens who come here in the autumn to harvest crops and have to gather a lot of money, they take all those things, cheap junk, they are justified, I understand them. But those who have the opportunity and do not pay attention to what they eat is something I really hate. [...]. At NaturaSì I see very seemingly simple people, just not great lords, they are usually not great lords, they are very simple people and I see them buying these vegetables that cost the wrath of God."

The primacy of food over other things when it comes to spend money, also drives Dorothy, who is retired and worked as a cleaning lady in hospices. She says:

"I don't lack money, no. But when it comes to food, I don't lack money at all. If I must spend, I prefer to spend on food."

However, she does not value organic food, but rather food that tastes well and vegetables that have beautiful colours and are fresh. The low priority given by some participants to organic food stems partly from the doubts on organic production, as more thoroughly described in the next sub-chapter. Melody who studies at San Michele all' Adige Agricultural Institute, questions the environmental positive effects of organic food production. She states:

"Maybe having done the school I did gave me some more insights than someone who maybe did something else. I don't know, if I take for example an orchard, apple production. OK, I know that maybe in integrated production, i.e. not organic, treatments are carried out perhaps with the use of specific products. In organic production, these products may be less harmful to the environment, to human health and so on, but on a like-for-like basis, i.e., you have to stop and think. OK, it's true that different products are used, but in comparison, if I take the production of organic apples, the production of integrated apples with an integrated method, organic, how many more phytosanitary treatments does it do compared to integrated? A lot more."

A hint of the attitude of the San Michele all' Adige Agricultural Institute towards biodynamic production methods emerges from the comments of some students, as reported by some interviewees. Sharon recalls:

"We had a boy doing his apprenticeship years ago and from the jokes he was saying, the teachers make Organic and Biodynamic look like witchcraft [...]. It would be fair to give students inputs, to open up the view in front of them a lot. Then it's up to them to choose, isn't it? Because it's not right in my opinion to clip the wings to a project, to a person, because you think it's nothing but, I don't know, magic."

Similarly, DebraP says about the technicians who support her:

"They are very traditionalist. So, yes, organic is already something different from traditional cultivation, but they move forward with blinkers on. […]. But I also hear this from the guys we have here, who do

internships through the school. If they talk to them about horses they don't even know what they are, goats, sheep. In other words, they don't broaden their horizons and, at the level of cultivation, it's even worse because they only focus on apples, vines and that's it."

Additionally, other factors, such as economics, are recognised as influencing consumers' attitude on food. Erik underlies:

"People then everyday deal with an economic aspect and we are also bombarded. For example, inflation in my opinion is always, when these dynamics come, it's a step backwards. Just look at the energy discourse: in the moment prices go up, you lose sight, that is, it is always done for an economic discourse, not for principles [...]. We are bombarded, so at the level of the head there is a focus on the economic aspect, i.e. every day plus 10, plus 10 plus 10, so one unconsciously, when one goes to buy, pays attention to the price and forgets. For me it is like that, i.e. even if I want to, this happens to me."

A similar consideration is made by Sharon who says:

"Unfortunately, when we put economy in front of all our choices it is not good for either of us: for those who buy because maybe you make choices that are not exactly right for our body, for our health which is then psychophysical. And my brother rightly says, smiling ironically, 'I don't understand why for cars people go for the best oil for the engine, because it saves their engine, and for our internal engine the oil we go for is the one that costs the least. No questions asked, right?"

The impact of decision-makers was also brought up as an important factor affecting food consumption. Daniel points out:

"Consumer responsibility is fine, it is right and proper, but let's wake up. We need strict laws, without exceptions and serious, that clearly take into account the needs of producers, but these producers need to wake up. That is, Europe and Italy should have stringent rules on packaging, on everything that concerns these sectors, much more stringent than those we have. And the exemption on the Plastic tax, similarly on the Sugar tax, from the health point of view are two clear examples of lobbies having influence on politics, so blatant as to be annoying."

Organic and biodynamic food and food production

Contrasting opinions emerge on the different production methods in the region i.e. conventional, integrated, organic and biodynamic agriculture. When asked about what she thinks about apple production in the area, Nancie says:

"It is always very difficult to understand. I have a friend who grows apples, and he says they are safe. I have another friend who says that no, they treat them a lot."

These different perspectives are reflected on the way different respondents gauge health aspects. Adam, for instance, receives some boxes of apples from a relative living in Val di Non[16]. When asked about the use of pesticides in that region and the importance of eating treated or untreated apples, he answers:

"No, that is important, but we always peel them. They say the worst is in the peel [...]. We take these apples, we practically don't eat them with the peel except in special cases, and we peel them. I know they are treated anyways, because in Val di Non they use a lot of pesticides, but in short ... let's say we eat them anyway."

Others, conversely, refuse to eat apples produced with conventional agriculture. Isabel, for instance, explains:

"I never take apples unless they are organic. I eat very few because I know that apples are a fruit that's quite bombarded by pesticides and all that stuff, so I prefer organic apples if I have to eat them."

Despite living in a biodistrict, many respondents are sceptical or critical of organic production and organic products. Scepticism originates on different grounds. Risk edges, i.e. organic cultivations adjacent to plots under conventional agriculture, emerge often as an unreliability of organic food production. In this respect Linda says:

"Maybe they will be cleaner in terms of pesticides or special fertilisers than others. I am fine if someone does it, but in isolation it is not something I believe in strongly […] because, as I said, they are not isolated fields in relation to the rest of the crops, so there is a bit of mixing."

Lucy manifests the same doubts:

"It is difficult for it to be really organic. I think in these years, where we have the apple growers and the vine growers giving these pesticides, no matter how little it is, the air carries them around, and the vegetables I don't think we have them who knows where, they are here. And then I don't believe it's organic."

However, Rebecca observes that there are cooperatives, for instance, where organic plots are all near each other and adds:

"But were it not also, you practically for 10 metres in your land have to harvest conventional, normal, even if it is organic because it is treated organically."

Some respondents question organic production also in comparison with their own production of organic produce. Miranda says:

16 Apple production in South Tyrol has been object of a scandal over the high use of pesticides proved by the final verdict of a trial at the Bolzano public prosecutor's office (Pomo della discordia, scandalo pesticidi in Alto Adige?)

“Maybe you find yourself at the farmer's market with the seller who offers you the organic thing and you know where it comes from, and you know that he has the same land availability as you do and you see these vegetables that don't grow like that at your place. And there you get the doubt. Because you can't sell me beautiful Swiss chards like that in November if you're a company from here. I mean they don't come, come on, we know things! And then you do some thinking, you don't want to be in bad faith, but anyway ... sometimes it comes to you.”

Scandals at the national level have also contributed to reduced confidence in organic production. Miranda, for instance, recalls:

“We've had some big hoaxes, like recently with Fileni[17] [...] which traded white meat and was the top organic company and it was closed down. It was a scandal, about 20 days ago, disastrous. But how many people, I bet even schools, that bought Fileni meat because it's organic, because at school you have to eat organic, paid who knows how much, and there!”.

Some distinctions are made between producers. Dave, for instance, observes the difference in oil-mils “from small, honest mills that I have visited, to larger mills that push the prices up”. However, these misconducts have fuelled perplexities on the certification system. Cindy admits being torn on organic production. She comments:

“I have some conflicting thoughts in the sense that I think it can be a very useful tool to reduce the use of pesticides, especially on human health and the one of soil and the environment [...]. So absolutely, organic food can really be a tool to solve this problem, to try to curb it. However, the fact is that, at least up to now, they are all private entities that certify organic. […]. They had done an investigative reporting on organic farming, and they too said, yes, it is super useful, but you have to be careful because there may be things that are not transparent […]. Because when they're all private, you still pay for certification, then they tell you in a fortnight we're coming, they tell you the day, they tell you the time, you have plenty of time to prepare and it might not be as organic as it seems.”

Daniel also raises similar doubts and says:

“It strikes me, sometimes, that the certifications, as in many other realities, are often consortia and paid for by the same entities that produce, and so when the controller is also the controlled, let's say this, it is never good.”

On EU initiatives to increase the market share of organic products among consumers, Cindy comments:

“[…] Then why do you keep selling me the rest, sorry, or do you keep financing it? [...] Giving funds to intensive breeding, intensive agriculture? Why are you leaving seed production in the hands of multinationals? And then, of course it costs less those things there. But in the meantime, you want me to understand quality? Then you work seriously on it and offer me a viable alternative, and the rest you slowly abandon or, in my opinion, it's just a façade there too. But if there was a public label and not just private bodies certifying organic produce, that would be a step forward in reality too, because it's something a bit more serious. I mean, it's not like you're paying the private body that notifies you months in advance. It

17 Fileni is a leading organic chicken producer. In January 2023 a scandal broke out which led to a parliamentary question in the European Parliament on the company’s practices, casting serious doubts on the reliability of the organic certifying bodies (https://www.europarl.europa.eu/doceo/document/E-9-2023-001320_EN.html).

would have to be better done too, I mean, because really, otherwise you run the risk of no longer trusting even organic food".

Different opinions surface also on food taste. Patrick, for instance, emphasises that he preferably purchases organic products also because he finds them tastier, although this is not a must. He explains:

"If I can, I'll see to maybe get the organic product. But it's not really a constraint. It's not that if something is not organic, but maybe it's a product that I know and that I know I like as it is, it's not that I say 'Ah, it's not organic, then I'll stop buying it'. Then, if I have the choice and maybe all things being equal, one organic and the other non-organic, I go more willingly to the organic one, precisely, because it is generally also a bit tastier, more flavourful and doesn't have that same need […] to be also very flashy. But it's not really a constraint that I put on myself."

Similarly, Frank specifies that, although they usually buy organic, they opt for non-organic products if they perceive them having better organoleptic properties. Dorothy, on the other hand, expresses doubts on the intrinsic nutritional value of organic products. She says:

"I don't know what to say, because ... what is organic? My daughter tells me that there's nothing organic. Because my daughter, having the land and producing berries, knows what organic and non-organic is. My daughter has strawberries, but she always tells me 'If I want my strawberries to become beautiful, I have to feed them. If I don't eat, I don't live. Then if my strawberries don't eat, they don't live either'. [...]. For me, organic is not nutritious.

Most of the interviewees are not acquainted with biodynamic production methods. Cindy comments:

"It still seems a bit strange to me [...]. Something a bit like contact with nature, which seems a bit esoteric to me [...] but I don't know if it has validity exactly. It's things like putting cow horns in the ground or looking at the moon."

Patrick knows the difference between organic and biodynamic agriculture and thinks:

"Afterwards, for both organic and biodynamic, I think it is very important [...] that it is the farmer or the producer who believes in it and does, in fact, what the specifications recommend and that he also puts his own spin on it. Because I know people who, perhaps attracted by higher profits in organic or biodynamic farming adopt these practices, but without following them and believing in them, they end up polluting, in quotes, much more than with traditional farming."

Brenda emphases the role of consumers in spreading biodynamics and points out:

"Organic is one thing and biodynamic is another. Of course, it would be desirable for all organic to convert to biodynamic. Then, as if to say, I am willing to buy a smaller apple, an apple with a few marks. But the problem is that I do it and many other people do not. That is to say, it's not just me, for goodness' sake, but the majority of people look at how the apple looks like, whether it is shiny, whether it is red, whether it is perfect. And obviously, in certain types of agriculture it's much more difficult to guarantee the standard."

The reluctance of some consumers to buy imperfect or earth-dirt vegetables is confirmed by a conversation with Isabella, the owner of the vegetable shop. She recalled that once she displayed for sale carrots just picked from the field, not washed, and still covered with soil. She said that customers did not buy those carrots and, eventually, she had to throw them away. When mentioning this episode, Debra commented:

"I have no difficulty in believing you."

Melody, commenting on the picture of vegetables and fruit in supermarkets, initially answered:

"We are all in the frame of mind to get the perfect product, me too first. Obviously if I see an apple there that is not beautiful, I look for a better one if I can."

Furthermore, since Isabella sells also to large retailers, she also reported that once she was contested a salad because it contained a snail. On the same subject, Sharon reports an episode that happened to Isabella, as follows:

"They have asparagus the white ones, in the bunch, that are perfect, and the loose ones which are perhaps the ones that were not picked well, one a bit broken, one smaller, one wider that cannot be bundled to sell like that. They have two different costs. One customer had asked for the loose ones. And she had the courage, I don't know the good time, and put them all in a row from the tallest to the smallest one. She took the photo, sent it to her complaining about the asparagus."

Nevertheless, nearly all interviewees say they would have no problems in purchasing vegetables that are smaller, imperfect or with dirt. When explicitly asked on this matter, Linda answered:

"Absolutely also because it is to be hoped that they grow in the ground."

In fact, they tend to criticise supermarkets display of all beautiful, equal and shiny vegetables. However, price can sometimes emerge as a problem in the sense that, as Dave put is:

"I go to the organic or farmer's market but one moment ... just as I accept that it is imperfect, you have to sell it to me as imperfect."

The Valle dei Laghi Biodistrict

Few participants are aware of the existence of the Valle dei Laghi biodistrict and what a biodistrict is. Some had never heard about it. When asking Dorothy if she had already heard about the biodistrict, she answers: "About what?".
Similarly, Miranda admits:

"No, to be honest, I don't know. Do they have street markets?".

Katrina says:

"I have heard the word again, but actually very little. If you ask me for a definition, I couldn't say."

Adam recalls having seen the advertisement of some meetings organised by the Valle dei Laghi biodistrict some year ago. He knows that the current mayor of Madruzzo was the president of the biodistrict, but he is unaware of the recent change in leadership. He guesses:

"From the name I think it is an association that aims to enhance the organic peculiarities of the area at the level of production, but I think also at the level of organisation of production between the companies, to put these companies in communication with each other with this objective of keeping organic, in short, to network it, I think this is a bit of a summary."

Patrick says:

"I don't [know] that much honestly. I mean I know there's this Valle dei Laghi biodistrict where they try to do more sustainable agriculture, they try to be a bit more environmentally conscious, but I wouldn't know exactly what it's about."

Only a few could formulate an understanding of what a biodistrict is and its function. Cindy says:

"The vision I had before that I thought was something only organic, like that agriculture had to be organic. Then I deepened, even with my family what it is [...]. Basically, from what I understood, it is really a direction that is given to an area, without compulsory constraints. A vision of, that is, certainly of agriculture free of toxic substances, but, however, also something at the tourism level: of enhancing the territory itself, of total well-being in the round, also to give a boost to tourism of a certain type, therefore more sustainable, slower than mass tourism."

Some interviewees became aware of the concept of biodistrict in conjunction with the referendum held in 2021 to transform the whole of Trentino into a biodistrict. Most associate it to transforming the entire region into organic farming. Frank, for instance, expresses his opinion about the biodistrict, as follows:

"I heard [about the biodistrict] because of the referendum, although I was not in favour because in my opinion it should be the market that creates the biodistrict and not obligations, because forcing people... There is already the freedom to buy or produce organic if you want to. And forcing people leads first of all

to an increase in production costs and there is also the need for them to produce cheap products. I mean, why do I have to force a family to buy, to get a packet of pasta for 3€ when there is Barilla that costs 40 cents."

In contrast, Daniel, who hoped for a positive outcome of the referendum, says:

"The direction was to go towards expanding as much as possible a biological dimension in all realities at the Trentino level, in short. There was an all-embracing dimension, to the whole region or the whole province."

A certain number of participants connect the Valle dei Laghi Biodistric to the protests related to the cement plant in Ponte Oliveti. Several people are critical on the protest against the plant for different reasons. Debra says:

"They made this cement plant flag. I don't know, for God's sake, I don't know, they believe in it, but unfortunately there's the question that if they said they put the filters needed… And then it's true that there are people working there too, you know? And you may be there protected, you have the company, etc., but these people have to go to work."

She believes that the biodistrict should focus on healthy agriculture and its efficiency instead. Dave thinks the overall situation makes it nonsensical to speak of a biodistrict. He comments:

"In addition to the cement plant, which has [...] its own problems [...] I wonder about everything around it, the use of pesticides and so on. I mean, to talk about a biodistrict in this situation is meaningless."

Perplexities are expressed also by Cindy who states:

"The doubts I had, even with respect to the Trentino biodistrict, is that it is being used a bit for greenwashing."

She thinks that very little is done in practice to make the area more sustainable and explains:

"There is the image of the biodistrict. Nice, nice. But what is being done concretely to make the area more attractive, tourist-wise? And I am not talking about mass tourism, because that is worse than no tourism at all, in my opinion. The area is not being developed because there were three cats talking about the reopening of the cement factory and nobody wanted to talk about it. They had a festival in October here in Pergolese. They told me that waiters' shirts were sponsored by Italcementi, which is the cement factory company. It brings jobs here, 50 jobs. And you don't think about how many jobs it could bring, maybe do something a little more geared towards tourism of a certain type. Agriculture, frankly speaking, I see pesticides left and right at all hours of the day."

Erik, however, has a different understanding of the biodistrict. He thinks positively about it and explains:

"I see it as a good driving force also to bring forward dynamics and thoughts that can make people reflect beyond the relapse that there is, indeed, an evolution in strong organics. But they are still realities that can make people think."

Non-food related dimensions of sustainability

In addition to the previous considerations, some participants implement choices that support sustainability in areas other than food and food systems. In this respect, Daniel, for instance, explains his purchasing choices of clothing this way:

"I have only been wearing Patagonia products for several years. Obviously, I buy less because they cost more, but the social and environmental commitment of a brand like that makes me reward it, even if [...] there are more beautiful products elsewhere, or perhaps products that correspond more to me in terms of colour and so on, I stay with this brand."

The holistic understanding of sustainability also shines through Ken words and his understanding of sustainability and finance:

"I believe that respect for people, for populations, for the territory and for those who work for the supply, for those who work in general - for me it is not only the food market that needs to be protected - is very important. That is to say, in my financial choices […] if I have to invest 10,000 euro in a normal company or a company that demonstrates and certifies policies to protect workers, to guarantee their wellbeing beyond even with lower financial returns, I prefer those things there, because I believe they are winning in human terms and in terms of the development of the planet and people. The period in which people are exploited, in which the environment in which we live is over-exploited, must be ended as much as possible."

Another dimension of sustainability emerges from the critique to chemical pollution caused by house cleaning products given by Rebecca. Her care for the environment and health began with the understanding of the unnecessary use of harmful detergents for house neatness and her switch to natural and biodegradable products. She says:

"Once upon a time you either went to the supermarket and bought products [...] that polluted your house, polluted the environment or you had this alternative. And I started with household cleaning, not to use certain products anymore. "

Contested by other women advocating the use of bleach and ammonia she answered:

"Look, if you come to my house, I'll gladly invite you, I think you won't find dirt. It may not be the perfect house, but you won't find dirt and I clean with natural products. I also clean with vinegar, with baking soda. "

Other understandings of sustainability include supporting associations committed to solidarity programs such as migrants, children with mental difficulties or disabilities both locally and abroad. Nancie explains that she does not buy organic products as such since it is too expensive, but she accepts the sacrifice to buy them if the product brings the double benefit of both environmental and social components. She says:

“I like to buy [in this association] even if it costs a bit more but because you put together a solidarity project and organic, then it makes more sense and I do it gladly.

Norges miljø- og biovitenskapelige universitet
Noregs miljø- og biovitskapelege universitet
Norwegian University of Life Sciences

Postboks 5003
NO-1432 Ås
Norway