D2.1 - Stakeholder analysis



WHITE:

Eco Ready

Anastasia Mousiadou, Sofia Michopoulou, Yannis Kostopoulos, Angelos Stamos, Anastasios Kyriakidis, Alexandros Altsitsiadis, Nina Louvrou



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201



Technical References

Project Acronym	ECO-READY
Project Title	Achieving Ecological Resilient Dynamism for the European food system through consumer - driven policies. socio- ecological challenges, biodiversity, data-driven policy, sustainable futures
Project Coordinator	Czech University of Life Sciences (CZU)
Project Duration	48 months

Deliverable No.	D2.1
Dissemination level ¹	PU
Work Package	WP2
Task	Task 2.1
Lead beneficiary	AUTH
Contributing beneficiary(ies)	WHITE
Due date of deliverable	31.03.2024
Actual submission date	29.03.2024

¹ PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)

Document history

V	Date	Beneficiary	Author		
1	29/02/2024	White	White (Anastasia Mousiadou, Sofia Michopoulou,		
			Yannis Kostopoulos, Angelos Stamos, Anastasios		
			Kyriakidis, Alexandros Altsitsiadis, Nina Louvrou)		
2	20/03/2024	AUTH	AUTH (Konstantinos Mattas, Efthimia Tsakiridou,		
			Foivos Anastasiadis, Nikolaos Syndoukas)		





Executive Summary

The ECO-READY project aims to create an integrated real-time surveillance system and digital Observatory accessible via an e-platform and mobile app. This system will serve as a central information source, providing real-time food system assessments, frequent updates, and integration with a network of Living Labs across Europe.

The purpose of this report is to improve our understanding of relevant stakeholders' perception, intentions, and level of awareness regarding climate change, biodiversity, and food security, as well as consumers' needs, interests, and behavioural change triggers toward more sustainable consumption. AUTH designed and led four focus groups implemented virtually, dedicated to an EU macro-region and covering all biogeographical regions. WHITE conducted an EU-wide survey, along with desk research, to identify factors influencing consumers' sustainable behaviour. The resulting analysis provides valuable insights that aid with WP2, WP3, and WP4 tasks, as well as contribute to the development of consumer-driven resilience strategies.

Our research underscores an overall widespread positive inclination towards adopting sustainable practices among the general public. Despite this positive trend, persistent barriers include the perceived higher cost of sustainable products, limited availability, and a lack of information on product sustainability. Notably, the study reveals a general willingness among the public to pay more for sustainable products. Furthermore, indirect effects through sustainable behaviour as a mediator emphasize the significance of income, environmental awareness, and eco-labels in shaping sustainable food choices.

Our analysis delves into various factors influencing citizens' behaviour towards sustainable food consumption. These encompass overall sustainable behaviour, gender, perceived sustainable food quality, health benefits, cost, and ethical considerations. Additionally, our investigation yields a set of respondent profiles delineating specific configurations indicative of sustainable food behaviour, based on participants' demographic characteristics. These profiles offer valuable insights into the diverse factors influencing sustainable food choices, allowing for a more targeted approach in promoting environmentally conscious dietary practices. The insights presented in this report aim to support the development of consumer-driven resilience strategies.







This publication has been produced within the ECO-READY project which has been funded by the European Union Horizon Europe Research and Innovation Programme under grant agreement n° 101084201. This publication reflects only the views of the author. The European Commission and Research Executive Agency cannot be held responsible for any use which may be made of the information contained therein.





Table of contents

Technical References	2
Document history	2
Executive Summary	3
Disclaimer	4
Table of contents	5
List of figures	7
List of tables	8
1. Introduction	9
1.1. Aim and scope of the present report	9
1.2. Outline of the report	10
2. Objectives and background information	10
2.1. Objectives	10
2.2. Literature review and background analysis	11
2.2.1. Needs, triggers and drivers of sustainable food choices	13
2.2.2. Interests and motivations of sustainable food choices	16
2.3. Gaps in existing research	17
3. Delphi Methodological approach	19
3.1 Panelist selection	21
3.2 First-Round Questionnaire	21
3.3 Second-Round Questionnaire	25
3.4 Data Analysis	26
4. Delphi Study Analysis	28
4.1 Description of the sample	28
4.2 First-Round Analysis	29
4.2.1 General findings from the First Round	29
4.2.2 Policy Group Analysis - Round 1	30
4.2.3 Practice Group Analysis - Round 1	33
4.2.4 Civil Society Group Analysis - Round 1	35
4.2.5 Consumers Group Analysis - Round 1	38
4.2.6 Open-ended questions - Round 1	40
4.3 Second-Round Analysis	42
4.3.1 General finding from the Second Round	42









List of figures

Figure 1. The three dimensions of sustainable food consumption (Source: Author's own	
illustration)	12
Figure 2 Two-round Delphi structure	20
Figure 3 Delphi bibliometric analysis - Keywords & Clusters	22
Figure 4 Delphi bibliometric analysis - Density Visualization	24
Figure 5 Delphi study participants' geographical distribution	28
Figure 6 Delphi study participants per group	29
Figure 7 First-Round Delphi - Consensus achieved	30
Figure 8 First-Round Delphi - Policy group consensus achieved	30
Figure 9 First-Round Delphi - Policy group level of consensus	31
Figure 10 First-Round Delphi - Practice group consensus achieved	33
Figure 11 First-Round Delphi - Practice group level of consensus	34
Figure 12 First-Round Delphi - Civil Society group consensus achieved	36
Figure 13 First-Round Delphi - Civil Society group level of consensus	36
Figure 14 First-Round Delphi - Consumers' group consensus achieved	38
Figure 15 First-Round Delphi - Consumers' group level of consensus	39
Figure 16 Second-Round Delphi number of participants & response rate	43
Figure 17 Second-Round Delphi - Consensus achieved	43
Figure 18 Second-Round Delphi - Policy group consensus achieved	44
Figure 19 Second-Round Delphi - Practice group consensus achieved	45
Figure 20 Second-Round Delphi - Civil Society group consensus achieved	46
Figure 21 Second-Round Delphi - Consumers group consensus achieved	47
Figure 22 Second-Round Delphi - Sectoral Statements consensus achieved	48
Figure 23 Second-Round Delphi - Sectoral Statements levels of consensus	48
Figure 24. Interlinked factors affecting citizens' sustainable food consumption	52
Figure 25. Gender distribution of the experts' survey respondents	56
Figure 26. Area of residence of the experts' survey respondents	56
Figure 27. Levels of participants' familiarity with sustainable consumption	58
Figure 28. Participants' willingness to pay extra for sustainable products in %	59
Figure 29. Participants' intention to pay more for a green product	59
Figure 30. Participants' willingness to purchase sustainable products	60
Figure 31. Participants' familiarity with the concept of sustainable food consumption	61
Figure 32. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (nutrition)	62
Figure 33. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (environment)	62
Figure 34. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (Social)	63
Figure 35. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (Economic)	64
Figure 36. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (Food security)	64





Figure 37. Participants' Reflections on Recent Food Experiences and Future Dietary	
Intentions (Food taste)	65
Figure 38. Participants' perceived self-efficacy	65
Figure 39. Participants' experiences related to food security	66
Figure 40. Participants' sense of control	66
Figure 41. Participants' considerations of time & future	67
Figure 42. Participants' closeness to nature	68
Figure 43. Participants' feelings of stress over the past month	68
Figure 44. Participants' challenges in purchasing sustainable food	69
Figure 45. Factors affecting participants' sustainable food purchase behaviour	70
Figure 46. Participants' Highest Environmental Concerns Regarding Food Security	70
Figure 47. Sustainable Food Behavioural profiles based on survey findings	75

List of tables

able 1 Delphi keywords - Link strength 23	5
able 2 FCQ & FRL statements example	j
able 3 Delphi study - Open-ended questions findings 41	
able 4 Second-Round Delphi - Sectoral Statements non-parametric tests)
able 5. Survey Questionnaire structure 54	ŀ
able 6. Survey participants' age distribution)
able 7. Education Level Distribution of the Experts Survey's Respondents	,
able 8. Income level distribution of survey participants 57	,
able 9. Identified factors affecting key sustainable behaviour and sustainable food	
onsumption	

ABBREVIATIONS

EU	European Union
FCQ	Food Choice Questionnaire
FRL	Food-Related Lifestyle
fsQCA	fuzzy-set Qualitative Comparative Analysis
NGOs	Non-Governmental Organizations
SDGs	Sustainable Development Goals
SWOT	Strengths-Weaknesses-Opportunities-Threats





1. Introduction

1.1. Aim and scope of the present report

The goal of the ECO-READY project is to develop a real-time monitoring system called the Observatory that will provide real-time information and assessment of the food system. It will be integrated into 10 Living Labs across Europe and will involve stakeholders such as society, policymakers and the agri-food industry. In this context, the stakeholder analysis of Task 2.1 aims to understand the main challenges, needs, intentions and preferences of citizens and ECO-READY stakeholders with regard to food security, biodiversity and climate change.

To lay the basis for our research, we conducted extensive desk research to identify and document the wide range of factors influencing sustainable consumption, while AUTH conducted a Focus Groups analysis, implemented virtually, with representatives from policy, practice, civil society, and consumers from across the EU. For the purposes of the analysis, the Delphi method was employed. According to (Ziglio, E., 1996)¹, the Delphi study is commonly utilized for the convening of traditional face-to-face meetings, particularly in scenarios where challenges such as cost and time constraints may impede the feasibility of such meetings. Moreover, the application of Delphi method is warranted in cases where experts are dispersed geographically and the research nature mandates the participation of specialists from diverse regions. This diverse group of participants was critical in capturing a comprehensive set of needs, challenges, and trends within their respective industries, resulting in a rich tapestry of insights.

The EU-wide survey was then designed by WHITE to delve further into these identified factors, eliciting the complexities that underlie consumers' sustainable consumption choices. Particularly, we focused on the interaction of various variables, including the role of relevant awareness, personal values and norms, psychological needs and triggers, and the motivations that inspire people to make environmentally sustainable food choices.

In essence, our research seeks to provide a comprehensive understanding of sustainable food consumption in the European Union. By combining the perspectives of stakeholders and consumers, our report will provide a nuanced, multifaceted view of the needs, interests, and triggers that drive **behavioural** change toward more sustainable consumption. As a result, we **will** contribute to a more informed and effective approach to sustainable consumption policy and practice, ultimately supporting the project's broader goals.

¹ Ziglio, E. (1996). The Delphi Method and its contribution to decision making. In M. Adler, & E. Ziglio (Eds.), Gazing into the oracle: The Delphi method and its application to social policy and public health (pp. 3-33). London: Kingsley.





1.2. Outline of the report

Section 1 of this report outlines the report's primary objectives and scope within the context of the ECOREADY framework. Section 2 delves into a summary of key insights from existing literature, providing an overview of the analysis's foundations. Sections 3 and 4 pertain to methodology and analysis of the Delphi study respectively, while Sections 5 and 6 address the methodological framework and key finding of the survey. The final section draws conclusions and discusses actionable implications based on the findings of the report.

2. Objectives and background information

2.1. Objectives

The purpose of this study was to improve our understanding of relevant stakeholders, their level of awareness, needs and perception around sustainable agricultural production, food security and climate adaptation and mitigation, as well as the key drivers influencing sustainable consumption practices, with a particular emphasis on sustainable food consumption. A mixed research method has been applied to unravel the targeted stakeholders' aforementioned aspects. The first step contains a **Delphi study approach**, informed by desk research, engaging participants from four groups, such as <u>Policymakers</u> at local, regional and European level, end-to-end supply approach <u>Practitioners</u> (i.e. farmers, food processors, wholesalers and retailers), <u>Civil Society Organizations</u> (NGOs, Associations, Social Enterprises, Voluntary organizations) and <u>Consumers</u>, covering all biogeographical regions. The Delphi study was in form of a SWOT Analysis, seeking the experts' opinion on critical Strengths and Weaknesses describing the current situation, and also Opportunities and Threats regarding the potentials/future.

The Delphi study can be used as a stand-alone consensus-building tool if the purpose of the data collection is to draw more general conclusion about certain topics (Ogbeifun et al., 2016²). However, the combination with the survey's results can yield a more holistic approach. The **survey** questions were designed to elicit information about a variety of aspects related to sustainable consumption, such as consumers' needs, interests, and triggers.

Furthermore, the survey investigated various aspects of sustainable food consumption, attempting to unravel the intricate interplay between environmental concerns, social motivations, economic factors, and individual psychological traits. This study aimed to shed

² E. Ogbeifun, C. Mbohwa and J. H. C. Pretorius, "Complementing a Delphi exercise with a focus group session," *2016 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bali, Indonesia, 2016, pp. 1269-1273. Available at: <u>https://ieeexplore.ieee.org/document/7798082</u>





light on the dynamics of sustainable food consumption and provide valuable insights that can inform policies, practices, and initiatives aimed at promoting more environmentally responsible and ethically conscious choices in the realm of food and beyond by delving into these multidimensional aspects.

To guide our study, we formed the following research questions:

- 1. What are the primary motivators for European consumers to change their food consumption practices?
- 2. To what extent do personal values and psychological traits influence consumers' choices toward sustainable consumption?
- 3. How important are economic factors like pricing and affordability in shaping consumers' sustainable consumption choices?

By addressing these research questions, we gained valuable insights into the needs, interests, and triggers of **behavioural** change toward more sustainable consumption, ultimately contributing to the promotion and implementation of sustainable consumption **behaviours**.

2.2. Literature review and background analysis

Climate change, biodiversity loss, economic inequality, and COVID-19 have all intensified public concern about the long-term viability of national food systems (Polzin et al., 2023³). As a result, sustainable food consumption is gaining traction as individuals and societies recognize the environmental, social, and health consequences of our food choices (Farzana Quoquab et al., 2018⁴).

Sustainable consumption is defined as the use of goods and services that reduce environmental impacts, promote social equity, and support economic well-being in the present and for future generations (UNEP, 2023⁵). It entails shifting to more responsible and conscious consumption patterns in order to mitigate the negative consequences of resource depletion and environmental degradation. Despite the lack of a clear definition for sustainability, consumer awareness of sustainability has increased in recent years, as evidenced by a 2020 study from the European Consumer Organization, which found that 42.6% of consumers expressed a "sustainability concern" when evaluating their eating habits (Toran-Pereg et al., 2022⁶).

⁶ Torán-Pereg, P., M. Mora, M. Thomsen, Z. Palkova, S. Novoa, and L. Vázquez-Araújo. 2023. "Understanding Food Sustainability from a Consumer Perspective: A Cross Cultural Exploration." International Journal of Gastronomy and Food Science 31 (March): 100646. Available at: <u>https://doi.org/10.1016/j.ijgfs.2022.100646</u>.



³ Polzin, Samuel S., Jayson L. Lusk, and Ahmad Zia Wahdat. 2023. "Measuring Sustainable Consumer Food Purchasing and Behavior." Appetite 180 (January): 106369. Available at: <u>https://doi.org/10.1016/j.appet.2022.106369</u>

⁴ Quoquab, Farzana, Jihad Mohammad, and Nurain Sukari. 2019. "A Multiple-Item Scale for Measuring 'Sustainable Consumption Behaviour' Construct: Development and Psychometric Evaluation." Asia Pacific Journal of Marketing and Logistics 31 (March). Available at: <u>https://doi.org/10.1108/APJML-02-2018-0047</u>.

⁵ United Nations Environment Programme. 2023. "Sustainable consumption and production policies". Available at: <u>https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies</u>



As illustrated by Figure 1, sustainable food consumption is a multifaceted concept with three critical dimensions: economic, ecological, and social (Lynn et. al, 2018⁷). The economic dimension emphasizes the importance of food affordability, equitable access, and fair compensation for those involved in the food supply chain, whereas the ecological dimension emphasizes the importance of reducing the environmental impact of food production and distribution. Finally, the social dimension emphasizes the importance of promoting food systems that are equitable, inclusive, and culturally sensitive. Combining these three dimensions is critical for developing a truly sustainable and resilient food system that nourishes both people and the planet.



Figure 1. The three dimensions of sustainable food consumption (Source: Author's own illustration)

As global awareness of environmental issues grows, so does recognition of the profound interplay between our dietary choices, consumption patterns, and their broader ecological consequences. The sustainability of the entire food system is heavily dependent on consumer food purchasing habits and their willingness to embrace a sustainable healthy diet (Polzin et al., 2023⁸). However, as the food industry became more industrialized and globalized over the last century, there was a shift toward a separation between consumers and food preparation, making food production and preparation less visible aspects of daily life (Charles F., 2015⁹). Consumers are increasingly seeking transparency in the food supply chain, seeking information about the origins and environmental impact of their food. Terms such as "local," "organic," and "sustainable" have become widespread, indicating a growing preference for more responsible consumption practices.

As a result, there is a growing emphasis on developing dietary guidelines that prioritize long-term outcomes, which has become a prominent area of focus in academic research and food policy debates. Sustainable food consumption is a central theme in both the United Nations' Sustainable Development Goals (SDGs) Agenda and the European Union's Green Deal, demonstrating global recognition of the crucial role that food plays in achieving

⁹ Francis, Charles. 2015. "Sustainable Food Consumption: A Practice Based Approach, by Elizabeth Sargant." Agroecology and Sustainable Food Systems 39 (7): 841–42. Available at: https://doi.org/10.1080/21683565.2015.1022276



 ⁷ Lim, Lynn L. K., and George Londob. 2018. "Global Consumer Cultures and Experiences of Sustainable Food Consumption in Host Country." Journal of Applied Business and Economics 20 (4). Available at: <u>https://doi.org/10.33423/jabe.v20i4.346</u>.
⁸ Polzin, Samuel S., Jayson L. Lusk, and Ahmad Zia Wahdat. 2023. "Measuring Sustainable Consumer Food Purchasing and Behavior." Appetite 180 (January): 106369. Available at: <u>https://doi.org/10.1016/j.appet.2022.106369</u>



environmental, social, and economic sustainability (Vargas et al., 2021¹⁰). Sustainable food consumption is emphasized as a critical component of eradicating hunger, promoting food security, reducing food waste, and ensuring sustainable production and consumption patterns, particularly under the SDGs, specifically Goal 2: Zero Hunger and Goal 12: Responsible Consumption and Production (FAO, 2019)¹¹. The SDGs encourage individuals and communities to adopt sustainable agricultural practices, promote sustainable food systems, and encourage sustainable food choices.

Similarly, the EU Green Deal, launched in 2019, aims to make Europe the world's first carbon-neutral continent by 2050, with a strong emphasis on sustainable food systems and consumption (EC, 2020)¹². A key component of the Green Deal is the Farm to Fork Strategy, which focuses on ensuring a fair, healthy, and environmentally friendly food system, while promoting sustainable food production and consumption, reducing food waste and supporting the shift towards sustainable diets. The strategy also establishes targets for reducing pesticide and antibiotic use in agriculture and encourages the use of organic farming practices.

In the following sections of this report, we explore the various factors that influence sustainable food consumption, delving into the specifics **needs**, **interests** and **triggers** of European consumers in relation to sustainable food consumption practices. Through this analysis, we aim to contribute to a deeper understanding of these critical components of sustainable living and provide valuable knowledge for promoting positive social change.

2.2.1. Needs, triggers and drivers of sustainable food choices

Sustainable food consumption practices require a deep understanding of consumer behaviour, since they assess product attributes available on the market and ultimately act as decision-makers who can alter their consumption habits (Hsu Hsin-Wei et al., 2021¹³). The concept of social change is often conceptualized through the lens of individual behaviour and responsibility (Sargant E., 2015). Throughout this study, we systematically examined a wide range of factors influencing not only sustainable food consumption, but green behaviour holistically, and examined their intricate connections with sustainable food consumption.

¹³ Hsu Hsin-Wei, Chia-Ying Chen, and Chia-Wen Wu. 2021. "Cross-Cultural Comparison of Sustainable Agro-Food Consumption from Consumers' Perspectives: Cases from Taiwan and France." Sustainability 13 (17): 9733. Available at: <u>https://doi.org/10.3390/su13179733</u>



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201

¹⁰ Vargas Alexandre Maia, Ana Pinto de Moura, Rosires Deliza, and Luís Miguel Cunha. 2021. "The Role of Local Seasonal Foods in Enhancing Sustainable Food Consumption: A Systematic Literature Review." Foods 10 (9): 2206. Available at: <u>https://doi.org/10.3390/foods10092206</u>

¹¹ Food and Agriculture Organization of the United Nations (FAO). (2019). Transforming Food and Agriculture to Achieve the SDGs. Rome. Available at: <u>http://www.fao.org/3/ca5602en/ca5602en.pdf</u>

¹² European Commission. (2020). Farm to Fork Strategy for a fair, healthy, and environmentally-friendly food system. Available at: <u>https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf</u>



The literature has identified numerous factors which influence green consumer behaviour and sustainable diets. These factors encompass a wide range of influences, including environmental, social, economic, and psychological aspects. The following two subsections provide an overview of the needs, interests, and triggers that influence sustainable food consumption.

When it comes to food choices, the concept of "need" is both the starting point and the driving force behind the choices we make as consumers. Our dietary preferences and habits are closely linked to a range of needs, not just nutrition. These diverse needs play a crucial role in shaping our food choices and are critical to understanding the complex landscape of sustainable food consumption.

Fundamentally, individuals seek to satisfy their **physiological needs** for food, sustenance, and energy in order to maintain a healthy diet (Lema-Blanco et al., 2023¹⁴). However, sustainable food consumption goes beyond basic needs and takes into account desires for taste, convenience, cultural preferences and health benefits. At the same time, consumers' interests and values play a crucial role in shaping their sustainable food choices. Ethical considerations such as animal welfare, fair trade and social justice are very popular with those who want to make environmentally and socially responsible decisions. Environmental concerns, health awareness and a desire to support local communities also influence consumer decisions.

Emotional triggers and psychological needs may also shape our food preferences and habits, and include, among other things, taste, comfort, and cultural attachment (Vassallo et al., 2016¹⁵). We seek the pleasure and satisfaction that food can provide, and these desires typically guide our choices of flavours, textures, and dishes. Additionally, emotions such as stress, sadness, happiness, or nostalgia can all cause cravings for specific foods.

Meanwhile, the growing understanding of the environmental impact of our food choices has created a new dimension of need, the **environmental need**. According to Lee et al. 2014, individuals who are ecologically and socially conscious express their environmental concerns through their personal consumption choices (Holotová et al., 2021¹⁶). Consumers are increasingly concerned about the environmental consequences of their dietary choices, actively seeking products that minimize resource depletion, reduce pollution, and support biodiversity. As a result, the concept of "**eating green**" has become an important factor in influencing food choices.

¹⁶ Holotová, Mária, Elena Horská, and Ludmila Nagyová. 2021. "Changing Patterns of Sustainable Food Consumption Regarding Environmental and Social Impact-Insights From Slovakia." Frontiers in Sustainable Food Systems 5. Available at: <u>https://www.frontiersin.org/articles/10.3389/fsufs.2021.703827</u>.



¹⁴ "Sustainability | Free Full-Text | Understanding Motivations for Individual and Collective Sustainable Food Consumption: A Case Study of the Galician Conscious and Responsible Consumption Network. Available at: <u>https://www.mdpi.com/2071-1050/15/5/4111</u>

¹⁵ Vassallo, Marco, Maria Luisa Scalvedi, and Anna Saba. 2016. "Investigating Psychosocial Determinants in Influencing Sustainable Food Consumption in Italy." International Journal of Consumer Studies 40 (4): 422–34. Available at: https://doi.org/10.1111/ijcs.12268



Equally important, **economic needs** constitute an additional crucial factor influencing food choices. Young et al. (2010) asserted that the predominant obstacle hindering consumers from buying environmentally friendly products is the "high cost" (Ghaffar et al., 2023¹⁷). Food costs can be a significant constraint for many consumers, and their choices are often influenced by financial constraints. It should be noted that sustainable food options can be more expensive due to factors such as organic farming or fair trade practices. Thus, balancing economic needs with other considerations, such as nutrition and sustainability, can be a challenging assignment.

Proceeding to the **social needs**, since food has always been a communal experience, consumers purchase goods not solely to meet individual needs such as nourishment and shelter, but also to initiate and sustain social connections (Salazar et al., 2012¹⁸). Food plays an important role in social gatherings, celebrations, and cultural events, so it is closely related to our social needs. Our food choices are frequently influenced by our desire to bond with others and share common experiences. This social dimension also extends to ethical considerations such as purchasing products that promote socially responsible practices, fair labour conditions, and ethical sourcing.

Another aspect of this social dimension is that consumer actions are not isolated, independent decisions; rather, they are influenced by the social groups in which each individual belongs, shaping their behaviour within a collective frame of reference (Salazar et. al, 2012). Hence, the influence of friends, family, and social networks typically shape food choices, and when they embrace sustainable food choices, individuals are more likely to follow along.

Ultimately, core **personal values** and **future time perspective** can also be strong triggers for adopting new eating habits (Olsen et al., 2021¹⁹). These may encompass a range of considerations, from religious and ethical beliefs to personal health philosophies. For example, people may choose to adopt a sustainable diet as part of a broader goal for a healthier lifestyle or as a response to a significant life event. In this context, Olsen et al.'s 2021 study delves into the complex relationship between personal values, future time perspective, and sustainable food consumption. Notably, the study confirms that a food-specific future time perspective and self-transcendence values promote sustainable food choices, whereas self-enhancement values and a present-time perspective discourage them.

¹⁹ Olsen, Svein Ottar, and Ho Huy Tuu. 2021. "The Relationships between Core Values, Food-Specific Future Time Perspective and Sustainable Food Consumption." Sustainable Production and Consumption 26 (April): 469–79. Available at: <u>https://doi.org/10.1016/j.spc.2020.12.019</u>



¹⁷ Ghaffar, Abdul, and Tahir Islam. 2023. "Factors Leading to Sustainable Consumption Behavior: An Empirical Investigation among Millennial Consumers." Kybernetes ahead-of-print (ahead-of-print). Available at: <u>https://doi.org/10.1108/K-12-2022-1675</u>.

¹⁸ "Social Influence on Sustainable Consumption: Evidence from a Behavioural Experiment - Salazar - 2013 - International Journal of Consumer Studies - Wiley Online Library." Available at: <u>https://onlinelibrary.wiley.com/doi/10.1111/j.1470-6431.2012.01110.x</u>



2.2.2. Interests and motivations of sustainable food choices

Moving beyond the realm of needs and triggers, we enter the perplexing landscape of consumer interests. Interests encompass a broader range of motivations that influence our food choices, including personal preferences, ethical considerations, and lifestyle factors. As we investigate the various dimensions of interests that influence our culinary decisions, the complex nature of sustainable food consumption becomes even more apparent.

One of the primary drivers of sustainable food consumption includes **ethical concerns** aiming to promote justice, fair trade practices, animal welfare, and local economies (Toran-Pereg et al., 2023²⁰). Consumer behaviour steers away from conventional theories in the expanding market of ethically sustainable consumption, shifting from a strictly rational focus on price and quality to greater concern for the ethical aspects of food products and their production. Purchasing products that align with ethical values allows consumers to put their beliefs into action and support morally just practices, while rejecting exploitative practices, promoting biodiversity conservation, and preserving traditional agricultural methods. Furthermore, these values promote a system of food sovereignty, which gives communities control over their food systems in order to improve local self-sufficiency, resilience, and, ultimately, food security.

Interest in personal health and wellness is another significant driving force behind sustainable consumption, particularly in today's increasingly health-conscious world, which leads people to prioritize leaner meat, organic, and non-genetically modified products (Hsu et al., 2020²¹). The concept of "LOHAS" (lifestyles of health and sustainability) encapsulates this connection between a healthy lifestyle and a sustainable environment, making the health incentive a critical factor influencing individuals' decisions to embrace sustainable consumption.

In the context of **environmental awareness**, the lack of relevant awareness and understanding often serves as a major obstacle to environmentally friendly actions, including sustainable food consumption (Hsu et al., 2020²²). According to studies, knowledge or interest in environmental stewardship can influence the adoption of eco-conscious practices, customer perceptions, and responses to green marketing efforts. Given the ongoing evolution of many regions' environmental movements, the awareness stage is relatively well-established, but the link between knowledge and behaviour remains somewhat tenuous. Consumers with high environmental awareness and relevant engagement in ecological responsibility can support practices such as regenerative

²¹ Hsu, Shih-Yun, Huai-Chen Wang, Juei-Ling Ho, and Ho-Cheng Chen. 2020. "Exploring Consumers' Interest in Choosing Sustainable Food." Frontiers in Psychology 11. Available at: <u>https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00489</u>

²² Hsu, Shih-Yun, Huai-Chen Wang, Juei-Ling Ho, and Ho-Cheng Chen. 2020. "Exploring Consumers' Interest in Choosing Sustainable Food." Frontiers in Psychology 11 (April): 489. Available at: <u>https://doi.org/10.3389/fpsyg.2020.00489</u>



²⁰ Torán-Pereg, P., M. Mora, M. Thomsen, Z. Palkova, S. Novoa, and L. Vázquez-Araújo. 2023. "Understanding Food Sustainability from a Consumer Perspective: A Cross Cultural Exploration." International Journal of Gastronomy and Food Science 31 (March): 100646. Available at: <u>https://doi.org/10.1016/j.ijgfs.2022.100646</u>



agriculture, reducing food waste, and minimizing the carbon footprint of their dietary choices.

Lastly, another prominent factor affecting sustainable food choices concerns the formidable influence of **social media**, including advertising (Simeone et. al, 2020²³). The portrayal of specific foods as trendy, desirable, or virtuous has enormous influence over consumer decisions and may pave the way for more sustainable and responsible consumption.

2.3. Gaps in existing research

The literature on sustainable food consumption has investigated a wide range of influences, from environmental and social factors to economic and psychological factors. While there has been significant progress in understanding the ecological and sociocultural motivations behind sustainable eating, there are significant gaps in the research, particularly concerning the deeper psychological aspects that drive sustainable food consumption. This study seeks to fill these gaps by delving into the complex world of psychological triggers and drivers influencing sustainable food choices.

External motivations for making green food choices, such as environmental concerns and ethical values, have often been the focus of research on sustainable food consumption. However, research into how deeply ingrained personal values and motivations influence these choices is lacking. More research is needed into the psychological aspects of sustainable eating, particularly the role of intrinsic motivation and values such as self-transcendence. Understanding how people's core values influence their food choices can provide invaluable insights into encouraging sustainable consumption.

The existing literature on sustainable food consumption has investigated a wide range of external motivators, such as environmental concerns, social norms, and economic incentives. These variables do have an impact, but in order to gain a more complete understanding of the field, it is necessary to delve into the psychological dimensions. Psychological aspects are the foundation of human behaviour, and they play an important role in influencing green behaviour across multiple domains, not just in the context of sustainable consumption.

Existing research on sustainable food consumption focuses primarily on the visible aspects of green choices, frequently overlooking the internal mechanisms at work. While numerous studies have investigated the environmental and economic motivations for choosing sustainable foods, little research has focused on the psychological underpinnings of these choices.

Furthermore, there is currently a lack of a comprehensive understanding of the interplay between environmental attitudes, personal values, and sustainable food choices. How do

²³ Simeone, Mariarosaria, and Debora Scarpato. 2020. "Sustainable Consumption: How Does Social Media Affect Food Choices?" Journal of Cleaner Production 277 (December): 124036. Available at: https://doi.org/10.1016/j.jclepro.2020.124036.





people's environmental attitudes influence their willingness to choose sustainable food? How do their personal values align with their food choices? These are issues that have not been fully addressed.

This study aims to fill these gaps by delving deeper into the psychological dimensions of sustainable food consumption. We will look into how environmental attitudes, values, and personal norms influence food choices, as well as the links between these psychological factors and green dietary behaviours.





3. Delphi Methodological approach

The traditional focus groups technique, defined as face-to-face meetings among 8-12 participants. Nevertheless, in recent years, the method has been modified to adapt to specific conditions and purposes of various qualitative studies. The use of virtual groups is widely employed in many research endeavors. Among some alternative techniques is the Delphi method (Stewart D.,W. & Shamdasani, P.,N., 2015).²⁴

As mentioned by Hasson & Keeney $(2011)^{25}$, the Delphi technique was originally described as "a method used to obtain the most reliable consensus of opinion of a group of experts by a series of intensive questionnaires interspersed with controlled feedback". One of the notable advantages of this method is its provision of flexibility to experts, enabling them to respond at their convenience, irrespective of their geographical location or daily schedules (Geist, 2010)²⁶.

There are many classifications of the Delphi technique, such as Classical, Policy, Decision, and Dynamic Delphi. For the purposes of the research, the Classical Delphi method was chosen, which focuses on facts and aims to achieve consensus between unbiased experts (Pare et. al, 2013)²⁷. According to Rowe & Wright (1999)²⁸, four main points characterize the Classical Delphi:

- i. Anonymity of panelists. This allows participants to freely express their opinions and thoughts without the potential for social pressure and influence by other participants.
- ii. **Iterations.** The repeated rounds of questioning, in conjunction with the aforementioned anonymity, allow participants to change their minds without fear of how the rest of the group will react.
- iii. **Controlled feedback**. Controlled feedback is provided to participants between the questionnaires of each round. Feedback is typically presented as a simple summary of the overall statistical data, indicating for example the mean value of responses or the level of agreement and consensus.
- iv. **Statistical aggregation**. Upon completion of the final repetition, the final statistical analysis of the results is performed, along with drawing relevant

²⁸ Rowe, G. & Wright, G., "The Delphi technique as a forecasting tool: Issues and analysis", International Journal of Forecasting, 15(4), 353 – 375, 1999. Available at: <u>https://doi.org/10.1016/S0169-2070(99)00018-7</u>



²⁴ Stewart, David W. & Shamdasani, Prem N., "Focus groups: theory and practice", *SAGE Publications, Inc,* Third edition, 2015.

²⁵ F. Hasson, and S. Keeney, "Enhancing rigour in the Delphi technique research", *Technological Forecasting & Social Change*, vol. 78, pp. 1695-1704, 2011. Available at: <u>https://doi.org/10.1016/j.techfore.2011.04.005</u>

²⁶ Monica R. Geist, "Using the Delphi method to engage stakeholders: A comparison of two studies", *Evaluation and Program Planning*, 33(2), 147-154, 2010. Available at: <u>https://doi.org/10.1016/j.evalprogplan.2009.06.006</u>

²⁷ Pare, G., &Cameron, A-F., & Poba-Nzaou, P., & Templier, M. (2013). "A systematic assessment of rigor in information systems ranking-type Delphi studies". *Information & Management*, 50(5), pp. 207-217. Available at: <u>https://doi.org/10.1016/j.im.2013.03.003</u>



conclusions. The findings are inclusive of all participants and the inquiries posed in the ultimate round.

Regarding the number of rounds in implementing the Delphi technique, the majority of the studies apply either two or three rounds, especially in the Classic method, due to the increase in non-responders in each iteration. When it comes to the number of participants in the Delphi study, there are many different opinions. According to similar research, the ideally panel sizes can be between 8 to 23 participants (Shang, 2023)²⁹. However, depending on the specific circumstances of each study, such as the type of methodology, the topic, or time and financial constraints, the number of participants varies (Akins et. al, 2005)³⁰.



Figure 2 Two-round Delphi structure

³⁰ Akins, R. B., Tolson, H., & Cole, B. R. (2005). "Stability of response characteristics of a Delphi panel: application of bootstrap data expansion." *BMC medical research methodology*, 5(1), 1-12. Available at: <u>https://bmcmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-5-37</u>



²⁹ Shang Z. Use of Delphi in health sciences research: A narrative review. Medicine (Baltimore). 2023 Feb 17;102(7):e32829. Available at: <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9936053/</u>



3.1 Panelist selection

The cornerstone for conducting the Delphi study is the participants. To be considered suitable, participants must, on the one hand, meet the requirements and content of the research and, on the other hand, possess the appropriate background. The knowledge and interests of experts regarding the content of the topic lead to more reliable results (Mattas et. al, 2022)³¹. For this reason, the first three groups consist of policy experts, agri-food sector practitioners, and civil society organizations. Additionally, the fourth group consists of consumers, as the perception of value by end-users is a determining factor in how all other factors in the food chain operate. As depicted in Figure 2, the first step in identifying suitable participants involves defining the criteria considered appropriate for the content of the analysis. Based on these criteria, a list was created and potential participants were classified, along with additional experts in any case. Finally, communication, invitation, and recruitment of selected participants take place. During the initial communication, experts were asked for their commitment until the completion of the study. Recruitment of participants also based on ECOREADYs' network, aiming to cover all biogeographical regions of EU.

3.2 First-Round Questionnaire

The first-round questionnaire had a SWOT matrix form, where Strengths and Weaknesses identifying the internal factors (or the current situation), while Opportunities and Threats the external factors (or potential/future), regarding the food system, climate change, biodiversity, and food security. The statements could be rated on a seven-point Likert scale, as one of the most common and reliable tools to quantify options in a Delphi approach (Murry & Hammons, 1995)³². The participants were asked to indicate their level of agreement for all the statements in the following answering categories: 1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Neither agree nor disagree, 5=Somewhat Agree, 6=Agree, and 7=Strongly Agree.

The statements included in this round of questions primarily arise from bibliographic sources and certain key points of strategies and corresponding guidelines. Specifically, the research was based on identifying the main keywords related to the concepts of climate change, biodiversity, and food security. A search was conducted on the "Scopus" platform in every document type (article, book chapter, review, conference paper, etc.) using the terms "(climate AND change) OR biodiversity OR (food AND security)" to display any file containing at least one of the above concepts. The results were limited to those belonging to the subject areas of "Agricultural and Biological Sciences", "Social Sciences", and "Economics, Econometrics and Finance". English was chosen as the language, and classification was based on citations (cited by highest). The total results meeting the

³² Murry, J.W., Jr., & Hammons, J.O. (1995). Delphi: A Versatile Methodology for Conducting Qualitative Research. *The Review of Higher Education 18*(4), 423-436. <u>https://doi.org/10.1353/rhe.1995.0008</u>.



³¹ K. Mattas, E. Tsakiridou, C. Karelakis, D. Lazaridou, M. Gorton, J. Filipovic, C. Hubbard, M. Saidi, D. Stojkovic, B. Tocco, A. Tregear, M. Veneziani, "Strengthening the sustainability of European food chains through quality and procurement policies" & Technology, Trend in Food Science 120, pp. 248-253, 2022. Available at: https://doi.org/10.1016/j.tifs.2021.11.021



defined criteria were 77,049. Of these, the keywords defined by the authors were checked for the first 10,000 results based on the classification.

This bibliometric analysis was conducted using the "VOSviewer" software. The minimum number of repetitions selected was 35, thus limiting the total number of keywords to 81 out of the 18,081. Those deemed not corresponding to the research content were removed, leaving a final 63 items. To avoid complexity and lack of understanding, clustering of the results was chosen, with a minimum cluster size of 10 items and a maximum of 140 links between variables. Four clusters were thus created: one focusing on Biodiversity (Red cluster - 23 items), one on Food Security (Green cluster - 15 items), one on Climate Change (Blue cluster - 13 items), and one on Adaptation (Yellow cluster - 12 items), as shown in the Figure below. It is noteworthy that all the core concepts are interconnected, as well as linked to items of different clusters.



Figure 3 Delphi bibliometric analysis - Keywords & Clusters



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201



In addition to connections, the importance given to each variable was examined, as derived from the "total link strength". Therefore, the 5 main items are climate change, adaptation, biodiversity, vulnerability, and food security. Table 1 lists the 23 main variables, their numbers of links, the total link strength of each, and their number of occurrences in the sample examined. Furthermore, based on color-coding, it is indicated to which of the four clusters each variable belongs. The importance of each can also be perceived from Figure 4, which shows the Density Visualization.

No	Items	Links	Total link strength	Occurrences
1	Climate change	61	1910	2561
2	Adaptation	52	867	496
3	Biodiveristy	52	718	901
4	Vulnerability	44	409	205
5	Food security	42	345	412
6	Conservation	49	317	271
7	Agriculture	47	304	189
8	Resilience	41	240	135
9	Global warming	40	218	244
10	Ecosystem services	47	212	172
11	Mitigation	34	196	99
12	Temperature	25	170	144
13	Species richness	29	169	190
14	Sustainability	30	162	113
15	Drought	34	129	103
16	Policy	29	113	60
17	Migration	25	104	76
18	Land use	27	97	67
19	Governance	27	97	60
20	Risk	22	86	46
21	Precipitation	24	83	56
22	Protected areas	24	80	58
23	Uncertainty	17	80	64

Table 1 Delphi keywords - Link strength





migration					
giobal warming temperature		adaptation uncertainty			
				water resources	
			adaptive capacity		
drought			vulnerability		
	sustainable develo	opment	resilience	risk	
biogeography	clim	nate change			
extinction elobal chance	environment europe	clima	ate change adaptation mitiga	tion	
competition		carbon sequestration		climate policy	
			estry		
monitorin	ng	landura	sustainability	covid-19	
stability diversity biodiversity	forest management			food security	
species richness	ecosystem services		agriculture	nutrition	
management	biodiversity conservation		development	policy	
restoration	protected areas	governance			
	deforestation				
	land-use change				
	urbanization				
Korea a construction of the construction of th		impacts			

Figure 4 Delphi bibliometric analysis - Density Visualization

Moreover, for some statements, mainly in the Consumers' group, elements of the *Food Choice Questionnaire* (Steptoe et.al, 1995)³³ and *Food-Related lifestyle* (Grunert et. al, 1993)³⁴ were used as inputs. Examples of such statements included in the research are listed in the Table below. It is noteworthy that the questionnaires (FCQ & FRL) were not applied, nor were their methodology and analysis; only elements used as inputs.

Food Choice Questionnaire "It is important to me that the food I eat on a typical day:"

Is easy to prepare (convenience)

Is easily available in shops and supermarkets (convenience)

Looks nice (sensory appeal)

Is not expensive (price)

Is familiar (familiarity)

³⁴ Klaus G. Grunert, Karen Brunsø, Soren Bisp, "Food-related life style: Development of a cross-culturally valid instrument for market surveillance", 1993. Available at: <u>https://pure.au.dk/ws/files/88/wp12.pdf</u>



³³ A. Steptoe, T.M. Pollard, J. Wardle, "Development of a measure of the motives underlying the selection of food: The food choice questionnaire", Appetite, 25 (3) (1995), pp. 267-284. Available at: https://www.sciencedirect.com/science/article/pii/S019566638570061X?fr=RR2&ref=pdf_download&rr=86160ee7cfe8



Has the country of origin clearly marked (ethical concern) Is packaged in environmentally friendly way (ethical concern) Food-Related lifestyle

Product information is of high importance

I use shopping list when to food shopping

I always buy organically grown food products if I have the opportunity

I dislike anything that might change my eating habits

Recipes and articles on food from other culinary traditions make me experiment in the kitchen

I try to plan the amounts and types of food that the family consumes

Table 2 FCQ & FRL statements example

Furthermore, an equally important element of the questionnaires from the first round consists of open-ended questions. Participants had the option to add their comments at the end of each section. Additionally, for the questionnaires distributed in Greece, there were some more targeted questions (optional). In this way, an "informal dialogue" and "brainstorming" were somewhat facilitated. Finally, the first-round questionnaires incorporated 74 statements for the Policy group, 65 for the group of Practitioners, 71 for Civil Society Organizations, and 69 for Consumers.

3.3 Second-Round Questionnaire

Regarding the second round of the surveys, the panelists were introduced to the results of the first round and were asked to revise and compare their answers to the rest of the members of their group (Canessa et. al, 2022)³⁵. People tend to change their minds in light of what other people consider (Mead & Moseley, 2001)³⁶ so the participants were provided with the controlled feedback to the group as a whole. The questionnaires for the second round contained only statements concerning Opportunities and Threats, and only those where no consensus was achieved in the initial round; statements with a very strong consensus (IQR \leq 1.00) excluded from the certain round.

Additionally, based on the open-ended questions from the first round, the section of 15 "Sectoral Questions" included in the surveys of all groups was designed. These questions arise from the responses and comments of the participants. Therefore, the experts themselves somehow designed and rated the statements according to their own perceptions, challenges, trends, and interests. The evaluation of the statements was conducted using the seven-point Likert scale, just as in the initial round.

³⁶ Mead, D,. & Moseley, L. (2001). The use of Delphi as a research approach. *Nurse Researcher*, 8(4), 4-23.



³⁵ Canessa, C., Vavvos, A., Triliva, S., Kafkalas, I., Vrachioli, M., & Sauer, J. (2022). Implementing a combined Delphi and Focus Group qualitative methodology in Nexus research designs—The case of the WEFE Nexus in Apokoronas, Crete. Plos one, 17(7), e0271443. Available at: <u>https://doi.org/10.1371/journal.pone.0271443</u>



3.4 Data Analysis

The purpose at this stage of the study, according to methodology (Classical Delphi) is to achieve consensus among unbiased experts on general and important facts related to climate change, biodiversity, and food security. For this reason, the results of each round were analyzed using basic descriptive statistics to determine the degree of consensus and agreement among participants. In the literature, the combination of the Interguartile Range (IQR) and Median is often observed (Giannarou, L & Zervas, E., 2014)³⁷, especially in the application of a 2-round Delphi study (Joan M Culley, 2011)³⁸. The IQR represents the absolute value of the distance between the 75th and 25th quartiles, with smaller values indicating a higher level of consensus (Jiayin, R., et al., 2024)³⁹. Specifically, an IQR≤1.00 indicated very strong consensus, strong consensus arises when 1.00<IQR≤2.00, moderate when 2.00<IQR<3.00, and finally, when IQR≥3.00 the level of consensus is low. On the other hand, the Median value separating the higher half from the lower half of the data sample. In the case of the seven-point Likert scale defined for the study, median values ≥ 5.00 indicate agreement among panelists in the corresponding statements (Niall D, Ferguson, 2005)⁴⁰. Therefore, to consider the necessary agreement and consensus rates satisfied, both among groups and within the sections of the questionnaires, the combination where IQR \leq 1.00 and \geq 75.00% agreement must be achieved.

Additionally, as the questionnaires for each group are different, as previously mentioned, a section of 15 common statements (Sectoral Questions) for all groups was created through comments and opinions of participants in open-ended questions. In the case of Sectoral Questions, in addition to IQR and the Median, non-parametric tests were conducted, for the purpose of verifying the results or identifying statistically significant differences where they may arise. The Kruskal-Wallis test was applied to identify and differences between groups. The null hypothesis is considered to be "The distribution of Statements is the same across categories of Groups". Thus, for p-value<0.05, there are statistical significance differences at the distribution of responses among the groups, and the null hypothesis is rejected. Conversely, the larger the p-value, the less statistically significance differences exist, and the null hypothesis is confirmed. Furthermore, the existence of significant differences is also indicated by the value of the H statistic. The higher the H value, the more likely there are differences between groups. Finally, within the same framework, Kendall's W test was applied to measure the overall agreement among groups for each statement. Evaluation of p-values is conducted similarly to previous methods. In addition, based on the values of Kendall's W, levels of agreement are derived. A higher Kendall's W

⁴⁰ Ferguson, N.D., Frutos-Viva, r F., Esteban, A., Fernandez-Segoviano, P., Aramburu, J.A., Najera, L. & Stewart, T.E. (2005). Acute respiratory distress syndrome: under-recognition by clinicians and diagnostic accuracy of three clinical definitions. *Critical Care Med.*, 33: 2228-2234.



³⁷ Giannarou, Lefkothea; Zervas, Efthimios (2014) : Using Delphi technique to build consensus in practice, International Journal of Business Science & Applied Management (IJBSAM), ISSN 1753-0296, International Journal of Business Science & Applied Management, s.l., Vol. 9, Iss. 2, pp. 65-82

³⁸ Culley JM. Use of a computer-mediated Delphi process to validate a mass casualty conceptual model. Comput Inform Nurs. 2011 May;29(5):272-9. doi: 10.1097/NCN.0b013e3181fc3e59. PMID: 21076283; PMCID: PMC4322391.

³⁹ Ruan, Jiayin; Chen, Shucheng; Ho, Yuen Shan; Wong, Vivian Taam; Lam, Mei Yuk; Tsang, Hector Wing Hong; Cheng, Ian Hoyin; Yeung, Wing Fai (2024), "Chinese medicine practitioners' consensus on traditional Chinese medicine diagnostic patterns, symptoms, and herbal formulas for COVID-19 survivors: A Delphi study". *European Journal of Integrative Medicine*. Volume 66



 $(0.00 \le W \le 1.00)$ indicates a higher level of correlation, while a lower Kendall's W (-1.00 \le W \le 0.00) indicates a lower level (Hadaya, P., 2012)⁴¹. Since the statements in the common section originate from the participants themselves, the goal is for both IQR and the Median, as well as the non-parametric tests, to confirm high levels of consensus and agreement without statistically significant differences between them.

⁴¹ Hadaya, P., Cassivi, L., & Chalabi, C. (2012). IT project management resources and capabilities: a Delphi study. International Journal of Managing Projects in Business, 5(2), 216-229. Available at: <u>https://www.emerald.com/insight/content/doi/10.1108/17538371211214914/full/html#idm46132208334384</u>



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201



4. Delphi Study Analysis

4.1 Description of the sample

As previously stated, participants were categorized into four groups according to their respective roles. In total, concerning the initial round, 79 participants completed the questionnaires comprehensively, encompassing all the biogeographical regions of the EU. These participants hailed from 14 countries, as depicted in the accompanying map. However, it is noteworthy that the preponderance of responders originates from the Mediterranean and Maritime North regions, primarily from Greece and Belgium.



Map 1 Geographical Coverage of focus groups



Figure 5 Delphi study participants' geographical distribution





Regarding the distribution of participants across groups, 8 belong to the Policymakers group, 14 to the Practitioners cohort, 12 to Civil Society Organizations, and 45 to Consumers.



Figure 6 Delphi study participants per group

During the Delphi, no additional demographic information or any element that could potentially reveal the participants' identities was requested, except their email addresses. The emails were strictly necessary solely for sending invitations to participate in the subsequent rounds; they were not utilized at any stage of the analysis and were not disclosed to any third parties.

4.2 First-Round Analysis

4.2.1 General findings from the First Round

Regarding the first round, 107 (37.12%) of the total 279 statements (including *Other Statements* from Consumers Group) received a very strong consensus, with IQR \leq 1.00. Consensus met in 18 out of 49 statements of the Strengths, 24 out of 68 in Weaknesses, 32 of the 77 statements related to Opportunities, 29 out of 65 for Threats, and 4 out of 20 for Other Statements (only for Consumers). On the other hand, 254 statements (91%) out of 279 received a high level of agreement, with a median score of 5.00 or higher.

The high level of agreement primarily stems from the clarity of certain statements and the fact that many of them address widely recognized issues. However, significant variations in response ranges exist despite the notably high agreements rates. In other words, the median provides a better representation of the center, without emphasizing the extreme values. This issue is addressed through the Interquartile Range (IQR). Hence, the apparent limitation of the results regarding the median presents a good opportunity for drawing substantial conclusions when comparing levels of consensus and agreement.







Figure 7 First-Round Delphi - Consensus achieved

4.2.2 Policy Group Analysis - Round 1

During the first round, 31 (41.89%) of the 74 statements for Policy Group received a very strong consensus ($IQR \le 1.00$) and 63 (85.13%) statements a firm agreement, with a median score of 5.00 or higher. The consensus was reached for 6 statements related to Strengths, 10 statements related to Weaknesses, 7 for Opportunities and 8 for Threats (Figure 8).



Figure 8 First-Round Delphi - Policy group consensus achieved

In addition, 27 responses met strong consensus ($1.00 < IQR \le 2.00$), 12 moderate consensus (2.00 < IQR < 3.00) and 4 low consensus ($IQR \ge 3.00$).

Figure 9 First-Round Delphi - Policy group level of consensus

In particular, panellists from Policy group agreed that "Food insecurity problems are not currently prevalent in EU countries" (S-Q1). Additionally, they claimed that sustainable production methods ensure the viability of large-scale as well as small/family-type food enterprises (S-Q3 & S-Q4). Moving forward to practices, has agreed that "Hydroponics offers the potential to increase food production without committing arable land" (S-Q8), while "Agroforestry in agricultural lands is a natural crop irrigation system and leads to a more efficient use of water" (S-Q9). Related to previous statements, policymakers believe that "EU policies encourage the adoption of eco-friendly technologies and practices in food production" (S-Q11).

On the other hand, the experts achieved low consensus regarding the statement that "globalization and international trade have positive effects on food security due to the increased quantity, availability, and affordability of foods" (S-Q2) and also that "the provision of tax or other incentives to food donation, contributes to the reduction of food waste and therefore to food security" (S-Q10). Finally, low levels of consensus and agreements observed in S-Q5 "Large-scale food enterprises can implement sustainable production methods more easily compared to small/family ones".

For the section of Weaknesses, agreed that "countries with weaker economies are more vulnerable to food crises" (W-Q2), and that "political and social instabilities intensify food insecurity" (W-Q3). Moreover, they concur that "there is a strong dependence in the agrifood sector on direct public financial support" (W-Q8) while "EU policies do not adequately address the needs of small-scale farmers and producers" (W-Q10). Another critical issue is that "food production is heavily concentrated in a few specific regions" (W-Q12). According to policymakers, even if hydroponics could increase food production without committing arable land, they agreed that the adoption of this method requires high costs (W-Q15) and an increased use of other resources as well (W-Q16). Noteworthy is the opinion of experts that environmental claims control systems of food enterprises are inadequate (W-Q20), as are the networks for collaboration, information sharing, and participation of all stakeholders in the food system, both at European and national levels (W-Q22). Finally, they contend that there is a lack of quantitative data on food loss and waste at every stage of the supply chain (W-Q21).

On the contrary, the panelists disagreed with the statement that "sustainable food production alone cannot meet global food demand" (W-Q4), as well as with assertions regarding "inadequate management of natural resources" (W-Q5) and "agricultural lands within protected areas" (W-Q6). As for the statement that "a significant percentage of agri-food products concerns processed food" (W-Q13), although the median suggests majority agreement among experts, there is a low consensus among them. Furthermore, they do not agree with the statement that "the Pollutant Exchange (Kyoto Protocol) creates unfair competition between more and less developed countries, affecting food security, climate change, and biodiversity" (W-Q18).

Regarding the Opportunities, experts agreed that "growing more than one type of crop in the same field (polyculture) could increase crop yields in the long term" (O-Q3). Moreover, they believe that "digital technologies can improve the traceability and transparency of the food system and facilitate the adoption of sustainable practices" (O-Q8), while "the creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) can contribute to the creation of new technologies and innovations, supporting agri-food production" (O-Q6). Additionally, supporting agri-food start-ups could contribute to the sustainability of the food system (O-Q11), and the financial regulations of the EU can attract young people to the agri-food sector (O-Q12). Furthermore, high levels of agreement and consensus were observed regarding the improvement of competition rules for collective initiatives (O-Q13), as well as the establishing of regulations and prohibitions that promote sustainability throughout the food supply chain (O-Q14). The aforementioned practices were deemed effective and feasible in enhancing the resilience of the food system and increasing the demand and supply of sustainable food.

On the other hand, panelists did not agree with the statements that "enhancing imports of agri-food products (where domestic production cannot meet the demand), is a good practice to ensure a country's food security and self-sufficiency" (O-Q2), thus highlighting the importance of creating strong local end-to-end supply chains. Finally, experts opposed the notion that the application of the European platform for food loss can contribute to the reduction by providing real-time data on losses (O-Q17). The outcomes of this statement are closely linked to the experts' opinion that there is a lack of quantitative data regarding food loss and waste at each stage of the supply chain (see Weaknesses).

According to the policymakers, climate change has negatively affected food production and security (T-Q1), and especially for some crops (e.g. vegetables, olives, etc.) the negative effects can be severe (T-Q2). In addition, "climate-induced extreme weather events, such as droughts, floods, and storms, are causing crop losses and threatening food production in many areas" (T-Q4). Another critical issue is that the "agricultural intensification and expansion are leading to biodiversity loss, soil degradation, and other negative environmental impacts that threaten the long-term sustainability of food production" (T-Q6). Moreover, the experts claimed that conflict and unrest in some countries cause food security problems in other parts of the world as well (T-Q9), while the global economic and political instability and insecurity can affect food prices, trade, and supply (T-Q10). It is also agreed that European trade policies are insufficient to increase demand for sustainable products (T-Q18). All the above lead to the conclusion

that "the food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers" (T-Q16).

Furthermore, policymakers do not agree with the assertion that *urbanization puts a strain* on the food system and food security (T-Q7). They also disagree with the statement suggesting that "the food crisis faced by countries outside the European area (e.g. sub-Saharan Africa) has an impact on European countries" (T-Q8). In addition, there is low consensus regarding that the high cost of livestock waste management causes significant pressure on the environment and climate change (T-Q17).

4.2.3 Practice Group Analysis - Round 1

Regarding the Practice group, a very high level of consensus (IQR \leq 1.00) was achieved in 14 (21.54%) statements out of total of 65. Among these, 1 (10.00%) concerned Strengths, 3 (16.67%) Weaknesses, 6 (27.27%) Opportunities, and 4 (26.67%) Threats. Despite the low percentage of consensus, almost all statements (63 or 96.92%) showed high agreement rates with median score of 5.00 or higher.

Figure 10 First-Round Delphi - Practice group consensus achieved

In addition, 38 responses met strong consensus ($1.00 < IQR \le 2.00$), 8 moderate consensus (2.00 < IQR < 3.00) and 5 low consensus ($IQR \ge 3.00$).

Figure 11 First-Round Delphi - Practice group level of consensus

For the section of Strengths, the practitioners agreed that eco-labelling of agri-food products could lead to an increase in demand and consumption of sustainable food (S-Q8). In addition, the recognition through environmental Marks of Excellence and events/awards for sustainable communities, enterprises, and products can play a crucial role in promoting and encouraging sustainable production and consumption (S-Q10).

On the other hand, in contrast to the responses of policymakers, participants in this group consider that *food insecurity issues are evident in EU countries*, as they did not agree with the corresponding statement (S-Q1). Additionally, based on their responses, it is concluded that they believe *sustainable production methods do not ensure the sustainability of both large-scale* (S-Q2) and *small/family type* (S-Q3) *enterprises. Moreover, experts achieved low consensus regarding the statement that "globalization and international trade have positive effects on food security as they have increased the quantity, availability, and affordability of food"* (S-Q7).

According to panellists, economic instability is one of the most important reasons for food insecurity (W-Q1). They also claimed that there are significant discrepancies and differences between the incomes of agriculture and other sectors (W-Q4), while a significant percentage of agri-food products pertains to processed food (W-Q9). Except that, practitioners (same as policymakers) believe that there are insufficient systems to control and document the environmental claims of food enterprises (W-Q17), as well as the networks of cooperation, information, and participation of all stakeholders in the agri-food system among EU countries and within each country (W-Q18).

Moreover, participants did not agree that the sustainable food production alone could not meet global food demand (W-Q2). Noteworthy is the opinion of experts that financial support to the agri-food sector does not concerns just a small number of products (W-Q7). Finally, low consensus achieved regarding the statement that "much of the food waste is due to a lack of understanding of product labels" (W-Q12), although they believe that "consumers do not have the knowledge to understand labels regarding the production and expiration of agri-food products" (W-Q11).

As for the opportunities, support for local markets (O-Q2), the use of local supply sources, the production and consumption of seasonal and local products (O-Q3), as well as shortening the food supply chain between producers and consumers (O-Q5), stood out among the responses of experts. Moreover, ensuring sustainability of the entire food value

chain (O-Q8), and improving competition rules for collective initiatives that promote sustainability throughout the agri-food supply chain (O-Q18) considered good and feasible practices aimed at creating more resilient food systems. Finally, it is worth mentioning the consensus regarding the importance of business cluster in supporting agricultural production through the creation of new technologies and innovations (O-Q13).

Furthermore, practitioners did not agree that "enhancing imports of agri-food products, where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency" (O-Q1). In addition, they believe that the imposition of social and environmental clauses and penalties on enterprises and organizations cannot lead to an increase in the supply of sustainable food (O-Q20).

Regarding threats, particular emphasis was placed on issues related to biodiversity and the impacts of climate change. Specifically, the *intensification of the use of enhancers and pesticides* (T-Q1) and *monoculture* (T-Q2), while producing larger among of foods in the short term, can have negative consequences over time on crop yields, biodiversity, and thus food security (T-Q3). *Drought* was considered one of the most significant problems threatening crop production in Europe (T-Q4), while *inadequate supply chains can lead to increased food loss and carbon emissions* (T-Q12).

Moreover, participants do not consider globalization and international trade as threats to food security and food systems (T-Q6). Additionally, they argued that adopting sustainable food production practices does not necessarily entail an increase in the prices of agricultural products (T-Q7). Furthermore, increasing the production of sustainable food will not affect the production of conventional food products or exacerbate food insecurity (T-Q9).

4.2.4 Civil Society Group Analysis - Round 1

According to the responses of Civil Society group, a very strong consensus ($IQR \le 1.00$) achieved at 31 (43.66%) of the total 71 statements and 65 (91.54%) a firm agreement, with a median score of 5.00 or more. The consensus was reached for 6 statements related to Strengths, 7 statements related to Weaknesses, 9 regarding Opportunities, as well as Threats.

Figure 12 First-Round Delphi - Civil Society group consensus achieved

In addition, 30 responses met strong consensus ($1.00 < IQR \le 2.00$), 6 moderate consensus (2.00 < IQR < 3.00) and 4 low consensus ($IQR \ge 3.00$).

Figure 13 First-Round Delphi - Civil Society group level of consensus

Based on their responses, participants concurred that traditional and indigenous knowledge regarding agriculture and food production can offer valuable insights for sustainable and resilient food systems (S-Q5) while cultural characteristics can affect the food security on certain regions (S-Q6). They believe that the creation of regenerative ecosystems, through the agri-food sector, which does not simply mitigate the negative consequences of the food system but supports and helps maintain and develop healthy ecosystems (S-Q2) is feasible. Additionally, they agreed that providing tax or other incentives (e.g. exemption from VAT) to facilitate food donation, contributes to the reduction of food waste and, therefore, to food security (S-Q14). Finally, they assert that civil society organization contribute to reducing inequalities in food production, availability, accessibility, and distribution (S-Q8), thus fostering a short of "Food Democracy" wherein all stakeholders in the food system can to some extent determine production and consumption policies (S-Q12).



On the other hand, despite achieving high agreement (median=6.00) on the statement that "civil society organization urge stakeholders to prioritize the most vulnerable, food insecure, and malnourished individuals and groups when designing and implementing food security and nutrition policies and programs" (S-Q10), consensus among them was low. Lastly, panelists believe that EU countries are currently facing situations of intense food insecurity (S-Q1).

According to experts, economic (W-Q2), political, and social instabilities (W-Q3) are some of the most important weaknesses that intensify food crisis and insecurity. In addition, participants agreed that "food production is heavily concentrated in few specific regions" (W-Q7), while monoculture leads to soil erosion and biodiversity loss (W-Q13). It is worth mentioning the responders' view that there are insufficient networks of cooperation, information, and participation of all stakeholders in the agri-food system (W-Q16), as well as inequalities in access to resources and wealth, thereby creating barriers to equitable and sustainable food systems (W-Q17).

Except that, experts do not regard sustainable production as a weakness of the food system in terms of meeting global food needs (W-Q4). Low levels of consensus were also observed in statements suggesting that "much of the food waste is due to lack of understanding of product labels" (W-Q11) and that "there is no adequate plan for the management and exploitation of household waste" (W-Q12).

The involvement of civil society organizations was considered to offer several opportunities aimed at the sustainability of the food system. Specifically, this could be achieved through monitoring compliance with sustainability standards throughout the value chain (0-Q9), supporting enterprises to adopt more sustainable methods of production, processing, storage, and distribution of agri-food products (0-Q10), supporting and empowering local markets (0-Q12), as well as their (civil society organizations) more direct involvement in policy-making through consultation and information provision (0-Q22). The application of the European Platform on Food Loss was also seen as an opportunity to reduce waste (0-Q11). Furthermore, they supported the statement that creating short/local supply chains between producers and consumers would have a positive impact on the sustainability of the system (0-Q14), as well as the use of traditional methods of food production, processing, and storage (0-Q18).

It is worth noting that there was no agreement on the statement that "the separation of agricultural and livestock areas could enhance food production, with a positive impact on the natural environment" (O-Q6). This disagreement leads to the conclusion that participants consider the existence of mixed areas significant, for both production and the environment.

Regarding the threats, participants from civil society group, agreed that *climate change* (T-Q1) and *biodiversity loss negatively affect food production and safety* (T-Q6). Specifically, for certain crop, the adverse effects of climate change can be devastating (T-Q2). Additionally, significant threats are considered to be the "uneven and irregular impacts of climate change, as they further complicate the creation and implementation of universally mitigation measures" (T-Q3). Furthermore, the intensification of pesticide use and fertilizers threatens long-term biodiversity and produce large among of





greenhouse gas emissions (T-Q12). Besides, some social issues threaten the food system as well. Participants agreed that consumer preferences and demand could lead to unsustainable methods and overproduction of agri-food products (T-Q8), while the demographic aging of rural areas threatens food production and rural depopulation (T-Q9). According to the panellists, inadequate supply chains can lead to large amounts of food loss and carbon emissions (T-Q14), with the European trade policies considered insufficient to increase demand for sustainable food (T-Q18).

On the other hand, there was no agreement on the statement that "globalization and international trade may have negative impacts on countries facing economic, social, or/and political difficulties regarding the food system and food security" (T-Q11). Finally, they disagree with the opinion that "policies supporting sustainable production would result in a reduction of conventional foods and thus an increase in food insecurity" (T-Q16).

4.2.5 Consumers Group Analysis - Round 1

Regarding the consumers, 31 (44.93%) statements out of 69 met very strong consensus and 63 (91.30%) achieved agreement with median score of 5.00 or more. Consensus was reached for 5 statements related to Strengths, 4 related to Weaknesses, 10 regarding Opportunities, 8 for Threats, and 4 regarding Other Statements.



Figure 14 First-Round Delphi - Consumers' group consensus achieved

Additionally, 27 responses achieved strong consensus, 1 moderate and 10 statements low consensus.







Figure 15 First-Round Delphi - Consumers' group level of consensus

For statements that referred to strengths, consumers agreed that "providing tax incentives (such as VAT exemption) to facilitate food donations reduces hunger for low-income households" (S-Q2), while "the gradual transition to sustainable practices throughout the food value chain creates new jobs" (S-Q5). In addition, they believe that cultural characteristics of a region affect the sustainability of the regional agri-food system as they, to some extent, determine the dietary patterns (S-Q11). It is noteworthy that consumers' agreement that Eco-labeling of agri-food products (S-Q7) and the recognition through environmental Marks of Excellence and awards for sustainable communities, enterprises, and products (S-Q8) could lead to an increase in demand and consumption of sustainable foods, consequently bolstering production.

On the contrary, consumers believe that the EU faces food insecurity problems, and globalization and international trade do not necessarily have a positive impact on food security, as they did not agree with the respective statements (S-Q1 & S-Q3).

Financial issues were considered among the most critical weaknesses, as participants exhibited ligh levels of agreement and consensus in statements such as "economic instability significantly contributes to food insecurity situations" (W-Q1) and "countries with weaker economies are more vulnerable to food crises" (W-Q2). Additionally, they believe that "a significant percentage of agri-food products pertains to processed food" (W-Q5) and "food production is concentrated in a few specific areas" (W-Q4).

On the other hand, lower levels of consensus were observed regarding the statement that "the prices of agri-food products do not reflect the real cost of resource use and greenhouse gas emissions" (W-Q8) and "there are inadequate networks of collaboration, information, and participation among stakeholders in the food system" (W-Q9).

Regarding opportunities, the highest rates of consensus and agreement were observed among participants. The most significant were deemed to be the *support for local markets* (O-Q1) and *the utilization of local supply sources, as well as the production and consumption of local and seasonal products* (O-Q5). Special emphasis was also placed on short supply chains. Specifically, *short supply chains between producers and consumers are expected to have a positive impact on both sustainability and food security* (O-Q2 & O-Q3). *Collaboration and empowerment of the role of cooperatives, producers and consumers can contribute to the shortening of supply chains* (O-Q4). Furthermore, *the use of traditional methods of production, processing, and storage in some cases may have a*





positive impact on the sustainability of the food system (O-Q8), while reducing food waste is likely to contribute to addressing food insecurity, climate change, and biodiversity (O-Q9). Additionally, improved communication and marketing strategies (O-Q10), as well as the use of technology to provide information about sustainable food and patterns (O-Q14), are considered significant steps towards improving the food system.

Similar levels of agreement and consensus were achieved in the section on threats as well. *The population weakening and demographic ageing of rural areas significantly threaten the food system* (T-Q2). Additionally, factors such as *modern lifestyle and dietary patterns* (T-Q3), *high prices of sustainable and organic products* (T-Q5), and their *limited availability* (T-Q6) were equally deemed critical risks to the resilience of the food system. Moreover, the emphasis consumers place on *brand names* (T-Q7), *convenience* (T-Q8), and *habitually choosing specific agricultural products* (T-Q10) pose obstacles to increasing the demand and consumption of sustainable foods. Finally, participants believe that the *lack of information and awareness regarding the environmental and social impacts of food production may hinder consumers from making informed choices* (T-Q12).

In the section of "Other Statements", which consists of more behavioral issues, levels of agreement vary, while rates of consensus are significantly lower compared to previous sections. According to the responses, the majority of participants indicate that they are aware of their dietary need and adhere to them (B-Q5). They also acknowledge and prefer seasonal products over non-seasonal ones (B-Q14). Furthermore, the panelists agree that they can recognize sustainable and organic foods and choose them over non-organic ones, provided that their prices are relatively low/affordable (B-Q17). Finally, it is concluded that there is awareness regarding the impacts of consumers' dietary habits and an understanding that the preference for sustainable foods would result in improvements in welfare, the economy, society, and the environment (B-Q20).

On the other hand, low consensus was observed in the statement regarding the *use of shopping lists based on consumers' meal plans* (B-Q4), while participants do not agree with statements suggesting that *they might discard a food item if they notice damage to its packaging, even though they know it is suitable for consumption* (B-Q8). Moreover, they did not agree with statements that they regularly *consume meat, dairy products* (B-Q11), and *fast food* (B-Q12). Additionally, consumers claim that *there is not ample availability, accessibility, and affordable prices of sustainable and organic foods in retail* (B-Q18). Finally, they believe that in their *place of residence, there are insufficient means and facilities for the utilization of foods that are unsuitable for consumption, as well as corresponding information for citizens* (B-Q9).

4.2.6 Open-ended questions - Round 1

Regarding open-ended questions, as already mentioned, participants had the option to freely add their comments at the end of each section. Additionally, in the questionnaires distributed in the area of Greece, there were some targeted development questions. This way, "an informal dialogue" and "brainstorming" among the participants emerged. During the first round of questions, participants' responses were recorded, compared with the main issues in the literature, classified according to their significance, and based on the





meaning of the responses, the "Sectoral Questions" section was designed for the second round. At this point, some of the key findings from the open-ended questions are briefly presented, categorized according to the positive or negative tone provided by the participants.

Positive (Strengths/Opportunities)	Negative (Weaknesses/Threats)
Education & Training	High prices for organic food
Information & Science support	 Decreased productivity and limited supply of sustainable foods
Knowledge & Collaboration	Wrong consumer choices
 Consumer mass action (collective informed choices can lead to positive changes in the food system) 	Climate change and extreme weather events
Consumer education & Consumer culture	Unequal distribution of resources
 Global change in diets & consumption patterns 	 Sustainable foods are targeted towards high-income markets
Environmental awareness	Significant post-harvest losses
Dissemination of Information	 High cost and low demand for sustainable foods
• Youth to the agri-food sector	Changes in land use
Certification/labelling	 High operation costs for distribution chains
New technologies	 Increased demands on labor (for sustainable foods)
	Lack of workforce

Table 3 Delphi study - Open-ended questions findings

Presented below is a selection of the most noteworthy participants' remarks:

"Food security in the meaning of availability is not an issue currently in the EU, yet food affordability is."

"There is no hunger in Europe. There is a certain level of malnutrition though."

"Food insecurity is not caused by a shortage of food supply, but by unequal distribution. There is more than enough food to enable the world to feed itself – however, food that could be used for human consumption is fed to animals, used as biofuels, or wasted rather than feeding hungry people. This is an inefficient use of limited land resources."

"Standards for vegetables and fruit aesthetics (size, shape, color) contribute to food waste. Land degradation, climate change, and unsustainable use of natural resources are growing threats for food security.

Biodiversity loss is a major, and under-recognized, threat to food security."





"Global change in diets and consumption patterns (e.g., less dairy and meat) could contribute to addressing food insecurity, while having positive effects on climate change and biodiversity due to resource savings."

"Consumers should not have to pay a premium for food that is better for their health and the environment – meaning food that has fewer externalities. A better application of the 'Polluter Pays'/'Provider Gets' principles on the supply side would have an impact on the consumption/demand side, as it would mean moving towards 'true cost' accounting for food (with prices better reflecting externalities). This would be in line with the Farm to Fork Strategy's stated ambition to make the sustainable choice the most affordable one."

"Scientific evidence increasingly shows that information/education and labelling, albeit necessary and important, are by far insufficient to trigger shifts in diets in the extent which experts say would be required. The 'food environment' must change (including aspects such as advertising and marketing, food promotion, pricing, food characteristics, etc.)."

"Reduction in productivity and loss of income, food crisis, poverty, malnutrition, and hunger (primary threats facing the food system). In other words, a nutritional crisis and potential mass migration movements. On the other hand, the loss of one-third of production in certain regions of Africa due to drought may lead, in response, to attempts to expand cultivated areas. It is estimated that by 2030, this could result in an increase of 2 billion acres of cultivated land (an area significantly larger than that of Western Europe), leading to extensive deforestation, high carbon dioxide emissions, and significant biodiversity loss. A vicious cycle! Much is expected from investments in technology, digitization, innovation, smart agriculture, but who will bear the cost of these?"

4.3 Second-Round Analysis

4.3.1 General finding from the Second Round

Regarding the second round, 49 participants took part, out of the 79 from the first round. Thus, the response rate is 62.00%, which is considered sufficient for the research needs (Lidwine B. Mokkink, et al., 2010)⁴². More specifically, the response rates for the policy group were 100%, for practice 57.00%, for civil society 58.00%, while for the consumers group was 58.00%. Additionally, the proportional distribution of participants per group remained at the same levels as the percentages of the initial round.

⁴² Mokkink LB, Terwee CB, Patrick DL, Alonso J, Stratford PW, Knol DL, Bouter LM, de Vet HC. "The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes." J Clin Epidemiol. 2010 Jul;63(7):737-45. doi: 10.1016/j.jclinepi.2010.02.006. PMID: 20494804.







Figure 16 Second-Round Delphi number of participants & response rate

According to the responses, 43 (38.39%) out of 112 statements achieved a very strong consensus. In the section of opportunities, the percentage of statements met consensus was 53,33%, in threats 33,33%, in the Sectoral Questions 40.00%, while in the section "Other Statements" concerning only the consumers group, the consensus rate was only 6.25% (1/16 statements). Furthermore, the results regarding the agreement are of interest. The agreement rate among policymakers was 78.37%, among practitioners 95.23%, among civil society organization 78.37%, and the consumers had 78.04% agreements. Similar rates apply within each section, with statements regarding opportunities reaching an agreement rate of 88.88%, threats 83.33%, and sectoral questions 100%. Conversely, while in all groups and sections the levels of agreement were higher than the desired (\geq 70.00%), in the section of other statements, which contains more behavioral characteristics and concerns only the consumers, the agreements rate was less than half (43.75%). In combination with the low levels of consensus, the need and prospects arising from a better understanding of consumer behavior in the food system become evident.



Figure 17 Second-Round Delphi - Consensus achieved





4.3.2 Policy Group - Round 2

The analysis of the policymakers' responses during the second round of the Delphi indicated consensus regarding 2 (16.67%) more statements related to opportunities out of the 12 remained, and 1 (10.00%) related to threats.



Figure 18 Second-Round Delphi - Policy group consensus achieved

More specifically, participants achieved a high level of consensus, disagreeing with the statement that "enhancing imports of agri-food products where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency" (O-Q2). Conversely, high levels of agreement and consensus were reached regarding the contribution of international collaborations in addressing global challenges of food insecurity and biodiversity loss (O-Q6). However, potential changes in taxation to support sustainable practices and foods (O-Q8, O-Q11, & O-Q12) garnered low to moderate consensus among participants. Additionally, pressures and challenges stemming from international trade were considered as threats to biodiversity and climate change (T-Q5). On the other hand, experts argue that the formation of business clusters (T-Q7) is unlikely to burden the areas where they are based (e.g., due to increased gas emissions or reduced biodiversity).

In general, it is worth noting that consensus levels in the second round are lower, as the IQR average increased slightly in both sections, although this did not affect the outcomes.

4.3.3 Practice Group - Round 2

In contrast to policymakers, during the second round, the group of practitioners achieved significantly higher levels of consensus on the remaining statements. Specifically, consensus was reached on 14 (87.50%) out of the 16 statements in the Opportunities and 6 (54.55%) in the Threats, while 8 (53.33%) out of the 15 statements in the Sectoral Questions sections met very strong consensus. Overall, practitioners reached consensus on one-third of the statements in the second round.







Figure 19 Second-Round Delphi - Practice group consensus achieved

Regarding opportunities, the absolute agreement (median=7.00) and consensus (IQR=0.00) were observed in the statements that "demand for locally produced food increases demand for locally grown plants and varieties, providing significant opportunities for farmers/producers" (O-Q3). Additionally, similar importance was given to other related statements, supporting sustainable and local products (O-Q4), the use of traditional methods of food production, processing, and storage (O-Q6), and the decentralization of production and consumption activities, strengthening local economies and improving food security (O-Q5). Furthermore, the creation of modern supply systems and geographically distributed warehouses (O-Q11 & O-Q12), short supply chains (O-Q2), and research, innovation (O-Q7), and technology (O-Q9 & O-Q10), are considered opportunities to strengthen the food system.

On the other hand, one of the most significant long-term threats was considered to be the *intensification on the use of enhancers and pesticides* (T-Q1). Experts agreed that *globalization and international trade create pressures and problems both in biodiversity and climate change* (T-Q2), while the *increase in input prices in the agri-food sector hinders sustainable food production* (T-Q5). Finally, participants claim that *the food system and its mechanisms in their current form are not able to respond to potential future and hazards* (T-Q9).

4.3.4 Civil Society Group - Round 2

According to the responses of the experts, very high consensus was achieved on 15 (40,54%) out of the total 37 statements. Specifically, in 6 (46,15%) out of the 13 statements in the opportunities section, 4 (44,44%) out of the 9 statements in the threats section, and 5 (33,33%) out of the 15 statements in the sectoral questions section, the IQR was less than or equal to 1.00. On average, the levels of agreement and consensus remained at the same levels as those of the first round. However, it is worth noting that extreme values increased due to the relatively small number of participants.







Figure 20 Second-Round Delphi - Civil Society group consensus achieved

The exploitation of protected areas (NATURA) was deemed a significant opportunity to achieve food security and support biodiversity (0-Q1), while experts agreed that mixed cropping systems (polyculture) could potentially increase crop yields in the long term (O-Q3). Moreover, the utilization of local food sources, the production and consumption of local and seasonal products (0-Q9), as well as the decentralization of sustainable production and consumption methods at the local level (0-Q10), would result in strengthening the socioeconomic status of rural areas, thus positively contributing to the sustainability of the food system. Furthermore, experts argue that collaboration among consumer associations, producers, and practitioners could lead to the promotion and empowerment of sustainable diets, involving the entire value chain (0-Q13). Additionally, panelists concurred that urbanization (T-Q1), globalization, and international trade (T-Q4) & T-Q5) burden the food system, exerting pressure in biodiversity and climate change. Dietary patterns were also deemed a significant threat, impacting food security, sustainability, biodiversity, and climate change (T-Q3). Finally, participants believe that policies supporting the production of sustainable foods do not imply a reduction in the production of mass/conventional foods and therefore do not threaten food security (T-Q8).

4.3.5 Consumers Group - Round 2

Out of the 41 statements in the second round, participants achieved a very strong consensus on 9 (21.95%). Of these, 2 (50.00%) pertained to opportunities, 1 (16.67%) to threats, while 1 (6.25%) out of the 16 were related to "Other Statements", and 5 (33.33%) out of the total 15 were in the section of sectoral questions. In general, both agreement and consensus remained mostly at the levels of the initial round.







Figure 21 Second-Round Delphi - Consumers group consensus achieved

Responses in the follow-up round indicated that panelists consider the decentralization of food production and consumption activities as a significant opportunity to strengthen local economies and improve food security (O-Q1). Additionally, they believe that increased demand for sustainable foods by consumers may encourage more farmers and producers to adopt these practices, leading to the sustainability of the system and the preservation of biodiversity (O-Q4). On the other hand, they agreed that alterations in the packaging or appearance of agri-food products lead to increased food waste, even if suitable for consumption (T-Q5).

Regarding the behavioral statements, consumers supported the notion that they are *unable* to identify sustainable and organic agri-food products and do not choose them over nonorganic ones (B-Q14), as this statement had low agreement (median=4.00) and high consensus (IQR=1.00). In addition, low levels of consensus and agreement were achieved in the statement regarding the *use of shopping lists when purchasing agri-food products* (B-Q4). Furthermore, contradictions were observed in the statements that participants often consume fast food (B-Q11), while simultaneously considering food disposal facilities and corresponding information for citizens insufficient (B-Q8). Finally, they claimed that in retail, there is not significant availability, accessibility, and affordable prices for sustainable agri-food products (B-Q15), and there is moderate agreement regarding the willingness-to-pay for sustainable foods to support environmentally friendly agricultural practices (B-Q16).

4.3.6 Sectoral Questions - Round 2

Regarding the Sectoral Questions, analyzing the results overall for all groups, consensus was reached on 6 (40.00%) out of the 15 statements. Additionally, the level of agreements were very high (median \geq 5.00) for 100% of the statements. Analyzing the responses separately for each group, consensus was observed in 4 (26.67%) statements for the policy





group, 8 (53.33%) for the practitioners, 5 (33.33%) for the civil society organizations, while consumers reached consensus at 33.33%, or 5 statements.



Figure 22 Second-Round Delphi - Sectoral Statements consensus achieved

Furthermore, it is worth mentioning that in a joint analysis of the responses, 12 statements (80.00%) achieved at least strong consensus, with an IQR \leq 2.00. Responses from the practice and consumer groups moved at the same level of consensus, while slightly lower consensus was achieved among policymakers, and only in the group of civil society organization did the majority of the statements (9 or 60.00%) have low levels of consensus, yet with high levels of agreement (73.33%).



Figure 23 Second-Round Delphi - Sectoral Statements levels of consensus

As already mentioned, the statements in the Sectoral Questions section stem from comments, observations, and opinions of participants through the open-ended questions of the first round. Therefore, the agreement and consensus among participants of all groups





as a whole are of great importance for the research, as it partly confirms the dialogical nature of the panelists, serving as a kind of substitute for real-time interviews. For this reason, besides checking for agreement and consensus, non-parametric tests were conducted. Specifically, the Kruskal-Wallis test and the Kendall-W test were applied. According to the results of the Kruskal-Wallis test, in 14 out of 15 statements, no statistically significant differences were found between the mean values of the four groups (p-value>0.05 & low H values) confirming the null hypothesis (the distribution of statements is the same across categories for Groups). The only statement where the null hypothesis was rejected (p-value=0.006 & high H) is the 15th one, stating that *improving* the position of producers in the value chain is necessary through measures such as targeted advice, strengthening cooperation among farmers, ensuring effective mechanisms against unfair trading practices, etc. Regarding these specific statements, the most significant differences were observed between the pairs "Consumers-Policy" (Asymptotic "Consumers-Practice significance=0.004), (Asymptotic significance=0.015), and "Consumers-Civil Society" (Asymptotic significance=0.070). As for the Kendall's W test, similar results were obtained. In the total statements, the W index is greater than o, but lower than the highest value (1.00), indicating relative overall agreement among groups.

	Kruskal-Wallis test		Kendall's W test	
Statements	Н	P-value	Kendall's W	P-value
1*	2.304	0.512	0.022	0.926
2*	3.564	0.313	0.099	0.555
3	2.361	0.501	0.112	0.503
4*	4.739	0.192	0.094	0.577
5	4.033	0.258	0.197	0.248
6	1.454	0.693	0.087	0.609
7	3.852	0.278	0.031	0.882
8	4.663	0.198	0.017	0.948
9*	2.321	0.508	0.116	0.488
10	0.702	0.873	0.074	0.671
11	1.870	0.600	0.138	0.406
12	5.545	0.136	0.237	0.173
13*	6.064	0.109	0.180	0.287
14*	2.746	0.432	0.097	0.567
15	12.380	0.05	0.367	0.052

Table 4 Second-Round Delphi - Sectoral Statements non-parametric tests

Among the statements with the highest degree of agreement and consensus, the need for upgrading rural areas (infrastructure, accessibility, connectivity, innovation) to achieve "generational renewal" in the primary sector (Q14) stands out. Additionally, the use of harmful pesticides in European farms is considered one of the biggest threats to regional food security (Q1), while the restoration of nature, as envisaged by proposals (such as the European Nature Restoration Law), will increase the resilience and robustness of the European food system (Q2). Moreover, a sectoral approach to food systems legislation,





covering agriculture, climate, biodiversity, and economic issues through a sustainable food systems framework, is considered crucial in combating threats to the European food system (Q4). In addition, participants agreed that consumers should not pay more for foods that are better for their health and the environment, applying the principles of "Polluter pays/Provider gets", making sustainable choices more affordable, according to the "Farm2Fork Strategy (Q9). Finally, it is argued that as long as the production of sustainable foods (and consequently the available quantity) remains low, prices for these products will remain high (Q13). On the other hand, low consensus was observed in the statement regarding the need to increase cultivated areas to address situations of malnutrition and hunger (Q6). Participants disagree that significant amounts of food are wasted through organic farming (due to diseases, harvesting methods, storage, transportation, etc.) (Q10), while higher prices for organic foods are not due to food losses resulting from organic farming (Q11).





5. Survey methodological approach

The survey conducted for this study aimed to gather insights on consumers' needs, interests, and triggers of behavioural change towards more sustainable consumption across the European Union. The survey was designed and deployed using the SurveyMonkey platform, employing a random sampling approach to ensure representation from residents of all EU member states. To maximize the reach and efficiency of data collection, the survey was shared via Prolific, a paid crowdsourcing platform, in early November (M12). By leveraging this platform, we were able to reach a broader audience and efficiently collect a large number of responses within a short period. As an incentive for participation, respondents were offered a small fee by Prolific, which encouraged engagement and ensured a diverse pool of participants.

To ensure that the survey targeted the appropriate participants, we implemented filters during the screening process on Prolific. Specifically, we sought responses from individuals residing in all 27 EU member states. Furthermore, we pre-screened potential participants to ensure their familiarity with the process and the validity of their responses. Specifically, only individuals who had previously participated in a minimum of 20 studies and had a contribution approval rate of at least 90% were included in the survey.

By adopting this methodology, we aimed to obtain a robust sample size for analysis (n = 2,785), representative of the EU population's diverse perspectives on sustainable consumption. This approach allowed us to collect a wide range of data and derive meaningful insights into the factors influencing consumers' behaviour towards sustainable food consumption at a pan-European level. As presented in Figure 24Error! Reference s ource not found., our study aimed at deciphering the different links between citizens' needs, triggers, interests, familiarity and their behaviour around sustainable food consumption.







Figure 24. Interlinked factors affecting citizens' sustainable food consumption

5.1 Sampling methodology and target groups

To ensure wide representation, we utilised a crowdsourcing platform aiming to engage consumers across the European Union (EU), regardless of their demographic factors. By targeting consumers specifically, we aimed to obtain a sample that accurately reflected the diverse perspectives and demographics of the EU consumer population, enabling a comprehensive understanding of sustainable consumption behaviours. This methodology promoted inclusivity and minimized potential biases associated with restricted participant pools, leading to a more robust and representative survey outcome.

5.2 Process & Measures

5.2.1 Process

In order to analyse the survey data and gain valuable insights into sustainable behaviour and sustainable food consumption, we followed a comprehensive statistical analysis process. The first step involved preprocessing techniques to clean and prepare the raw data for further analysis, like checking data completeness, identifying and removing outliers and instances with missing data, and transforming the final dataset into a usable format.

Next, descriptive statistics were used to explore the data and provide a summary of the survey responses. Measures of central tendency, such as mean, and median, were calculated to understand the typical or most common values for each survey question. Additionally, measures of variability, such as standard deviation, were utilised to assess the distribution of responses. To identify any patterns or differences in respondents' opinions, the data was further analysed based on sociodemographic factors such as age, gender, education level and area of residence. This analysis allowed us to understand how





these variables might influence attitudes and behaviours related to sustainable behaviour and sustainable food consumption.

Regression analysis was then conducted to delve deeper into the relationships between various variables in the data. This enabled us to investigate the influences of different factors on sustainable behaviour and sustainable food consumption. In addition to common explanatory sociodemographic variables like gender, age, and income, we included variables related to sustainable food consumption, interests, needs and triggers.

5.2.2 Measures & Questionnaire structure

The participants were welcomed to the survey and provided with some basic information about the survey's purpose and data anonymisation. In order to measure the public's perceptions, needs and interests around sustainable consumption, the survey used nominal and ordinal scales. Data was collected on the following key factors affecting sustainable consumption: familiarity, willingness to pay premium, purchase intention and purchase behaviour. We further collected data on the perceived challenges, their feelings during a specific time period, along with the role of (i) nutrition, (ii) environment, (iii) social sustainability (iv) price, (v) security and (vi) taste. The detailed questionnaire is presented in Annex D.

Familiarity with sustainable consumption: Participants were asked to indicate whether they are familiar with the concept of sustainable behaviour, indicating the extent to which they relate with five items answered on a 5-point scale (1= highly familiar - 5= familiar at all).

Willingness to pay premium: In order to determine the willingness to pay extra to purchase sustainable products, participants were asked to indicate their level of agreement with five statements on a Likert scale of 1 (strongly agree) to 5 (strongly disagree), previously validated by Yadav, Rambalak and Pathak (2017). Additionally, participants were also asked to indicate the extra percentage they would be willing to pay selecting one of the six items (0%, 1-5%, 6-10%, 11-15%, 16-20%, more than 20%).

Purchase intention: Based on a previously used set of questions by Yadav, Rambalak, and Pathak (2017), we measured the respondents' purchase intentions. The participants indicated the extent to which they agree with a set of three items on a 5-point scale (1 =strongly disagree - 5 = strongly disagree).

Purchase behaviour: Similarly to purchase intention, we measured participants' purchase behaviour based on a previously validated set of questions by Yadav, Rambalak, and Pathak (2017). The respondents indicated the extent to which they agree with a set of three items on a 5-point scale (1 = strongly disagree - 5 = strongly disagree).

Familiarity with sustainable food consumption: Participants were asked to indicate the extent to which they are familiar with the concept of sustainable food consumption, indicating the extent to which they relate with five items answered on a 5-point scale (1= highly familiar - 5= familiar at all).

Challenges in sustainable food purchase: In order to identify the key challenges faced by participants when trying to buy sustainable food products, respondents were asked to





reflect their perceptions by choosing between five items (lack of availability, higher cost, lack of information, limited product choices, other).

Sustainable healthy diet behaviour: Participants were asked a set of questions previously used by Polzin et al. (2023) to assess the role of nutrition, environment, social, economic, security and taste in exhibiting a sustainable healthy diet behaviour. Respondents were asked to indicate on a 5-point scale their reflections based on their own diet and experience (1= No, and I don't expect to in the next 6 months - 5= Yes, and I have for more than 6 months).

Interests: Respondents were asked to indicate their interests and agreement to a set of statements on a 5-point scale (1 = strongly disagree - 5 = strongly disagree), previously used by Hsu et al. (2020).

Self-efficacy: Participants were asked to reflect on a set of statements on self-efficacy, responding to a previously employed instrument by Chen, Gully and Eden (2001), indicating their agreement on a 5-point scale (1 = strongly disagree - 5 = strongly disagree).

Food security: To assess how secure the participants feel with regards to food supply, they were asked to indicate on a 4-point scale (1= never true, 3= often true, 4= I don't know) to a set of questions previously used by U.S. Household Food Security Survey Module (2012). This variable was also assessed through an additional set of questions, where they reflected on their past experiences on a 3-points scale (1= Yes, 2= No, 3= I don't know).

Sense of control: Based on a previously used set of questions by Lachman and Weaver (1998), our study assessed the participants' sense of control as a factor affecting behaviour around sustainable consumption. This was measured through a set of four statements on a 5-point scale (1 = strongly disagree - 5 = strongly agree).

Time perspective/Future considerations: To capture if time orientation plays an important role in shaping respondents' sustainable food consumption, we collected responses for twelve questions, previously validated by Hevey et al. (2010), on a 5-point Likert scale (1 = Extremely uncharacteristic - 5 = Extremely characteristic).

Closeness to nature: Based on Mayer, Stephan and McPherson Frantz (2004), we assessed the effect of participants' closeness to nature on their food purchase behaviour, through a set of thirteen questions on a 5-point scale (1 = strongly disagree - 5 = strongly agree).

Stress: Using an instrument developed by Cohen et al. (1983), our study evaluated how stress and different emotional states affects participants' sustainable behaviour. The participants indicated the extent to which they relate to a set of twelve items answered on a 5-point scale (1= never - 5 = very often).

Demographics: Several demographic items were included in the survey, such as area of residence, age, gender, level of education, and net annual household income.

Table 5. Survey Questionnaire structure

Questionnaire structure	Questions (Annex D)
Familiarity with sustainable consumption	1





Willingness to pay premium	2, 3
Purchase intention	4
Purchase behaviour	5
Familiarity with sustainable food consumption	6
Challenges in sustainable food purchase	7
Sustainable healthy diet behaviour	8
Interests	9 - 12
Environmental issues related to food security	13
Self-efficacy	14, 15
Food security	16 - 19
Sense of control	20
Time orientation	21 - 23
Closeness to nature	24 - 26
Stress	27 - 29
Demographics (place of residence, age, gender, education, income)	30-38

5.3 Data collection

Data was collected using a crowdsourcing platform, specifically Prolific, to ensure a representative sample of participants from across the EU. This approach prioritized accessibility, allowing people to participate regardless of where they live, their age, gender, or other demographic factors. Participants were compensated for their time, which encouraged a higher response rate.

Following data collection, a thorough cleaning process was carried out to remove incomplete or disqualified responses. This included filtering out participants who did not meet certain criteria, such as failing attention check questions or completing the survey too quickly. After this cleaning process, a final sample size of 2,785 responses from EU consumers was obtained, representing a subset of the initial 3,130 participants.





6. Survey Analysis

6.1 General description of the sample

The sample size for the survey comprised 2,785 respondents from the individuals reached through a crowdsourcing platform (Prolific) (see section 2.4.3 for a more detailed explanation). This number was achieved after cleaning the data from non-qualified responses (e.g., those that filled in less than half of the questionnaire's sections). The sample was drawn from a population consisting of individuals aged 18 years and above, residing across the 27 EU states.

Figure 25 displays the gender distribution among respondents, indicating a balanced malefemale mix, with female participants comprising 48% of the sample, and males representing 49%. Furthermore, Figure 26 demonstrates that more than 60% of the sample lives in urban areas across EU, 23.4% resides in semi-urban areas and 10.5% in rural areas.



Figure 25. Gender distribution of the experts' survey respondents

Figure 26. Area of residence of the experts' survey respondents

When examining the distribution across different age groups, the sample displayed a varied representation, with the 25 to 44 age group being the most prevalent, constituting approximately 40.9% of the total respondents (Table 6). The age bracket of 18 to 24 comprised 30.6%, and the range of 35 to 44 made up 15.1%. Furthermore, respondents aged 45 to 54 constituted 6.2%, those in the 55 to 64 range represented 2.4%, and a smaller fraction of the sample (0.8%) applied to individuals aged 65 and above.

Table 6.	Survey	participants'	age	distribution
----------	--------	---------------	-----	--------------

Age	Frequency	Percentage
18-24	958	30,6%
25-34	1281	40,9%
35-44	474	15,1%
45-54	195	6,2%
55-64	75	2,4%
65+	25	0,8%





The survey findings indicate that the sample was largely composed of individuals with higher levels of formal education (Table 7). Specifically, the majority of respondents (67.8%) held a university degree, with 38.7% possessing a Bachelor's degree or equivalent as the highest attained degree, 26.4% holding a Master's degree, and 2.7% holding a PhD degree. In contrast, 23.9% of respondents had completed their secondary school education as their highest educational qualification. Notably, a small percentage of respondents (0.9%) reported completing only primary school, while 2.9% held other types of diplomas, such as professional programs. Furthermore, 1.4% of respondents preferred not to disclose their educational qualification.

Highest level of education	Frequency	Percentage
Bachelor's degree or equivalent	1212	38.7%
Doctorate's degree (PhD)	83	2.7%
I would rather not disclose it	45	1.4%
Master's degree	825	26.4%
Other type of diploma (e.g., professional programmes)	69	2.2%
Primary school diploma	27	0.9%
Secondary school diploma	747	23.9%

Table 7. Education Level Distribution of the Experts Survey's Respondents

According to the survey results, a proportion of respondents (10.7%) opted not to disclose their annual household income, while a significant share of the sample (49.3%) fell within the range of \pounds 15,001 to \pounds 55,000 per year (Table 8). Notably, 18% of the respondents reported a household income of over \pounds 5,001 to \pounds 15,000 per year.

Income level (in Euros)	Frequency	Percentage
I would rather not disclose it	336	10.7%
€100.001 or more	41	1.3%
€15.001 - €25.000	619	19.8%
€25.001 - €40.000	620	19.8%
€40.001 - €55.000	303	9.7%
€5.000 or less	223	7.1%
€5.001 - €15.000	562	18.0%
€55.001 - €70.000	172	5.5%
€70.001 - €85.000	72	2.3%
€85.001 - €100.000	60	1.9%

Table 8. Income level distribution of survey participants





6.2 Insights around sustainable consumption - purchase behaviour

In this section, we present insights on the participants' familiarity with sustainable consumption and their behavioural patterns around green purchases.

The level of familiarity with the concept of sustainable consumption among respondents was measured on a scale of 1 to 5, with 1 being "Highly familiar", and 5 being "Not familiar at all" (Figure 27). A noteworthy majority of the sample indicated that they are either highly familiar (6.1%), very familiar (26.3%) or moderately familiar (51.9%) with sustainable consumption. The remaining sample indicated lower familiarity with the concept, with 13.3% sharing that they are less familiar, and 2.2% that they are not familiar at all.



On a scale 1-5, how familiar are you with the concept of sustainable consumption?

Figure 27. Levels of participants' familiarity with sustainable consumption

In order to assess the respondents' sustainable consumption and purchase behaviour, a set of survey questions was designed, capturing participants' habits and intentions with regards to sustainable consumption.

Concerning respondents' willingness to pay a premium for sustainably produced products, 37.1% of participants expressed a readiness to pay an additional 1 to 5% (Figure 28). A substantial portion, accounting for 34%, indicated a willingness to allocate an extra 6 to 10% for sustainable options. Furthermore, 14.3% of the sample conveyed a preparedness to pay between 11 and 15%, while 5.5% were open to paying a premium of 16-20%. It's noteworthy to highlight that a distinct group, almost 7% of the sample, declared their unwillingness to pay more for sustainable products.







Willingness to Pay Extra for Sustainable

Further, Figure 29 depicts the respondents' intentions to pay more for a green product that makes efforts to be environmentally sustainable. According to the findings, the majority of respondents either agreed (52.8%) or strongly agreed (4.8%) that they would be willing to pay extra for green products. Conversely, 15% disagreed with the idea of paying a premium for environmentally friendly products, and 3.7% strongly disagreed with the statement. Notably, 22.9% neither agreed nor disagreed with the statement.





Survey participants were presented with a series of questions regarding their willingness to purchase sustainable products, and they were asked to indicate their level of agreement (refer to Figure 30). The overwhelming majority of respondents either agreed (53.2%) or strongly agreed (4.8%) that they are willing to buy sustainable products for personal use. An overall percentage of almost 20% indicated that they disagree (15.1%) or strongly disagree (3.7%) with paying more to purchase green products. A moderate share, of 23.1% expressed neutrality, stating that they neither agree nor disagree with the provided



Figure 28. Participants' willingness to pay extra for sustainable products in %



statements. These findings underscore the overall positive attitudes of the participants towards adopting sustainable purchasing behaviour.

Please indicate your level of agreement with the



Figure 30. Participants' willingness to purchase sustainable products

6.3 Sustainable food consumption

In this section, we aim to present our findings with regards to participants' familiarity and behaviour in the context of sustainable food consumption. Specifically, we investigate the respondents' behavioural patterns with regards to a number of factors, including (i) nutrition, (ii) environment, (iii) social, (iv) economic, (v) security and (vi) taste.



On a scale 1-5, how familiar are you with the concept of sustainable food consumption?

Figure 31Figure 31 visually represents the participants' familiarity with the concept of sustainable food consumption. The data elucidates that a substantial portion, comprising 47.9% of the participants, expressed a moderate level of familiarity with the concept. Additionally, 26.7% stated they are very familiar, and an extra 6.7% claimed a high level of





familiarity. In contrast, 15.3% indicated a lower degree of familiarity with the term, while 2.1% reported not being familiar with it at all. This distribution of familiarity levels underscores the varied degrees of awareness and understanding among the surveyed participants, providing valuable insights into the overall comprehension of sustainable food consumption within the surveyed population.



On a scale 1-5, how familiar are you with the concept of sustainable food consumption?

6.3.1 Food Behavioural Aspects, Intentions and Preferences

In terms of recent food experiences and dietary intentions, the survey presented various options for respondents to reflect on different parameters, prompting them to consider their diet and food purchasing experiences in both recent and upcoming weeks. This was designed to help us understand the underlying sustainability dimensions that motivate sustainable food consumption behaviour.

In Figure 32, more specifically, the focus is on nutritional considerations related to food consumption. The results reveal a predominant trend towards prioritising high nutritional values, with over 55% of the sample indicating a preference for whole fruits, vegetables, grains, nuts, and beans. Moreover, a substantial majority, exceeding 60% of the participants, reported purchasing a diverse range of foods containing various fats, proteins, vitamins, and more. Additionally, approximately 40% of the sample expressed a tendency to avoid highly processed foods with empty calories. Conversely, a noteworthy minority, comprising almost 18% of respondents, indicated that they neither avoid highly processed foods nor intend to do so in the next six months.



Figure 31. Participants' familiarity with the concept of sustainable food consumption





Participants' Reflections on Recent Food Experiences and Future **Dietary Intentions - Nutrition**

Figure 32. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (nutrition)

Figure 33 presents the outcomes of participants' further reflections on recent and prospective choices related to the environmental aspects of food consumption. Notably, more than 74% of the sample emphasised their commitment to avoiding excessive food purchases and minimising food waste, with the intention to uphold this behaviour for the next six months. Additionally, a significant share of 42.11% indicated a conscious effort to steer clear of highly packaged foods and single-use plastics, expressing their commitment to continue this practice in the foreseeable future. Interestingly, a contrasting perspective emerged, with almost 27% of the sample indicating that they currently do not prioritise purchasing foods with lower land, water, and greenhouse gas footprints, and they do not plan to alter this approach in the future.



Participants' Reflections on Recent Food Experiences and Future

Figure 33. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (environment)

In our effort to comprehensively understand participants' behavioural patterns concerning food consumption, we sought to gauge their consideration of the social sustainability





aspects of food consumption (Figure 34). Approximately 36.2% of respondents indicated a preference for purchasing food produced humanely for both animals and workers, while 18.9% stated that they neither follow nor intend to adopt such a pattern in the next six months. Additionally, 37.8% of the sample expressed a tendency to avoid supporting food businesses perceived as unfair or exploitative in their practices.

Furthermore, we aimed to explore the role of culture in shaping citizens' food purchasing behaviour. The results revealed that a significant majority, exceeding 62%, indicated a preference for buying food that aligns with their cultural or customary diet. These findings provide valuable insights into the diverse factors influencing consumer choices within the context of social and cultural sustainability in the food industry.



Participants' Reflections on Recent Food Experiences and Future Dietary Intentions - Social

Figure 34. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (Social)

The survey delved also into the influence of economic factors on the adoption of sustainable food consumption through the set of questions presented in Figure 35. The collected responses indicated a significant role played by economic factors in shaping dietary habits and intentions. A substantial majority, comprising more than 85% of the sample, expressed a preference for buying food that is affordable and aligns with their budget. Additionally, 68.81% reported choosing food from stores and restaurants that offer a wide range of options. Furthermore, 52.87% indicated the flexibility to buy food whenever and wherever they want. Notably, one of our findings revealed that almost a third of respondents (26.99%) shared that although they currently buy food whenever and wherever they desire, this behaviour began only within the last six months.







Participants' Reflections on Recent Food Experiences and Future Dietary Intentions - Economic

Figure 35. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (Economic)

We also inquired about participants' experiences concerning their sense of food security (Figure 36). A significant majority, comprising 73.7%, indicated that they purchase enough food to ensure they do not go hungry. Simultaneously, 53.57% expressed the practice of avoiding low-quality foods that are neither desirable nor nourishing. Furthermore, more than 60% of the sample indicated a preference for buying food that is not only safe but also free of dangerous chemicals or bacteria. These responses provide valuable insights into the diverse strategies and considerations individuals employ to maintain a sense of food security in their daily lives.



Figure 36. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (Food security)

Participants also reflected on how much taste plays a role in their food purchases, with the vast majority indicating that it plays an important role (Figure 37). More than 80% of the respondents stated that they purchase tasty food that is pleasing to them, while a share of 64.9% indicated that their food purchases are affected by the visual appearance of the food items. Additionally, a share of almost 80% expressed that they prioritise food that not only tastes good but also contributes to their overall well-being, both physically and emotionally.







Participants' Reflections on Recent Food Experiences and Future Dietary Intentions - Taste and Visual appearance

Figure 37. Participants' Reflections on Recent Food Experiences and Future Dietary Intentions (Food taste)

The survey also included an assessment of the participants' perceptions regarding their self-efficacy (Figure 38). They were asked to indicate their confidence in performing effectively on various tasks, and the results indicated a significant majority expressing strong agreement (18.75%) or agreement (57.79%) with the statement. The findings depict a predominant profile of individuals who are confident in their abilities and feel capable of performing well even in challenging situations.



Figure 38. Participants' perceived self-efficacy

Examining participants' experiences related to food supply security, Figure 39 illustrates the extent to which they perceive the absence of food security. The majority of the sample reported no encounters with food insecurity, with approximately 65% indicating that they have never faced such situations. In contrast, 24% of respondents admitted to sometimes relating to the statement, suggesting that some participants experience intermittent challenges. In terms of respondents' capacity to maintain balanced meals, 56% affirmed that they could consistently afford to eat in a balanced manner. Meanwhile, nearly 30% admitted to occasionally being unable to afford balanced meals. Overall, we note that the





majority feels secure regarding their household food supply, but a significant percentage faces occasional challenges in affording a balanced diet.



Figure 39. Participants' experiences related to food security

Continuing our study, the analysis delves into the intricate relationship between sustainable food consumption and the participants' perception of control in their day-today existence. As depicted in Figure 40, the overwhelming majority of respondents expressed a general sense of control over their lives. Specifically, a significant portion agreed (46%), and a notable percentage strongly agreed (14%) that whatever happens in the future mostly depends on them. In essence, these results illuminate a noteworthy connection between sustainable food consumption and a prevailing sense of control, shedding light on the participants' attitudes and perceptions regarding their agency in navigating life's uncertainties.

Sense of control



Figure 40. Participants' sense of control

In Figure 41, we present the results of our time-orientation-related question, aiming to assess the links between participants' consideration of time in their daily routine and food choices. Participants indicated that they do take into account temporal perspectives in their overall behavior. Specifically, the majority showed a tendency to address not immediate needs but to consider future implications and the long-term impact of their actions. About 68% of the sample indicated that they think about how things might unfold





in the future and actively strive to influence those things through their day-to-day behavior. A significant portion stated that acting to satisfy immediate concerns is uncharacteristic (around 35%), with an additional 13% considering it extremely uncharacteristic of them. They emphasized that their behavior is not solely influenced by the immediate outcomes of their actions, which are matters of days or weeks.



Time orientation

Figure 41. Participants' considerations of time & future

The study also sought to gather data on participants' connection with nature to evaluate how their closeness to nature influences sustainable food consumption (Figure 42). The collected data indicated that the vast majority of participants feel a strong connection to nature and the environment. More specifically, a significant portion of respondents either agreed (48.7%) or strongly agreed (14.8%) with the statement that they perceive the natural world as a community to which they belong. Approximately 60% of participants disagreed (41.19%) or strongly disagreed (21.52%) with the statement that they often feel disconnected from nature. The data implies that a considerable portion of the study participants not only view nature as an integral part of their lives but also actively consider it as a community to which they belong. As we analyse further in the Discussion section, a strong connection to nature can play a crucial role in shaping attitudes and behaviors related to sustainable food consumption. Understanding this bond provides valuable insights into the intricate dynamics between individuals' connection with nature and their choices in promoting sustainability.





100% 90% 80% 70% 60%

> 50% 40%

30%

20%

10% 0%

I often feel a

with the natural

I think of the

community to

sense of oneness natural world as a

world around me. which I belong.



When I think of

my life, I imagine

myself to be part

of a larger cyclical

process of living.



I recognize and

appreciate the

intelligence of

other living

organisms.

I often feel

disconnected

from nature.

In addition to the factors previously examined, the survey delved into the relationship between participants' feelings of stress and their engagement in sustainable food consumption. It is noteworthy that a substantial portion of the study participants, comprising more than half, conveyed experiencing frequent bouts of nervousness and stress over the past month. Specifically, 28.64% mentioned feeling fairly often, while 24.86% reported feeling very often in this emotional state. Furthermore, a significant share of respondents disclosed a sense of powerlessness over important aspects of their lives. Around 25.46% expressed feeling fairly often, and an additional 13.52% reported feeling very often that they were unable to control pivotal elements of their daily existence.



Exploring Feelings and Thoughts: Frequency Assessment Over the Last Month

Figure 43. Participants' feelings of stress over the past month





6.4 Enablers and barriers: specificities that drive or hamper sustainable food consumption

In this section, we will analyse our exploration of both the positive drivers (enablers) and challenges (barriers) that shape consumer behaviour in the realm of sustainable food consumption. In Figure 44, the results presented aim to identify the most challenging parameters for consumers, impeding the purchase of sustainable food. The predominant barrier, as indicated by 63.6% of the sample, was the higher costs associated with sustainable food compared to non-sustainable alternatives. Following this, 15% of respondents highlighted the lack of information on product sustainability as a significant challenge. Additionally, 10.9% mentioned limited product choices, which discouraged them from opting for various sustainable products, while 7.3% identified a lack of availability as an obstacle. A smaller share of 1.8% of the sample suggested facing other challenges not explicitly specified. The identified challenges provide valuable insights for stakeholders aiming to promote sustainable consumption, emphasising the need for strategic interventions targeting cost perceptions, information dissemination, product variety, and availability to foster a more sustainable consumer landscape.



Figure 44. Participants' challenges in purchasing sustainable food

To enhance our comprehension of the key factors shaping respondents' behaviour towards sustainable food consumption, we solicited their assessments of the importance of various factors, including environmental impact, health benefits, quality, ethical considerations, cost, brand reputation, eco-labels, and availability (Figure 45). According to the results, the paramount factor influencing respondents in the purchase of sustainable food products is the perceived quality of the items. Subsequently, cost, health benefits, and availability appear to significantly impact citizens' food purchasing behaviour. However, brand reputation and the presence of eco-labels seem to carry less weight as criteria for participants when selecting sustainable food. The findings suggest a noteworthy trend in consumer preferences, revealing that the presence of eco-labels holds relatively less significance in participants' decision-making processes when selecting sustainable food. While factors such as quality, cost, and availability emerged as key influencers, the





prominence of eco-labels appears to be diminished. This observation may indicate that consumers are placing greater emphasis on tangible attributes such as the inherent quality of the food product, its economic feasibility, and its accessibility, as opposed to relying heavily on certifications like eco-labels.



Figure 45. Factors affecting participants' sustainable food purchase behaviour

Continuing our exploration of the factors influencing sustainable food consumption, participants in the survey also highlighted their primary environmental concerns related to food security (Figure 46). Over 70% of respondents identified climate change as the foremost threat against food security, and 66.7% expressed significant concern about environmental pollution, encompassing water, soil, and air pollution. Additionally, more than half of the sample identified food wastage as a threat to food security. These findings underscore the participants' recognition of the interconnectedness between environmental challenges and the sustainable production and consumption of food.



Figure 46. Participants' Highest Environmental Concerns Regarding Food Security





6.5 Discussion and key respondent profiles

6.5.1 Discussion of main findings

This section aims to present the insights gained through the EU survey and the reviewed literature. These insights have been classified based on their effect on sustainable food consumption, highlighting stakeholders' perspectives and interests. The following analyses examined specific variables extracted from the survey dataset based on their relevance and their potential to provide meaningful insights into the phenomena under investigation. These were: sustainable behaviour, self-efficacy, time-orientation, closeness-to-nature, stress, food security, sense of control, interests, age, gender, education, income.

Our analysis employed a regression-based method known as Path Analysis⁴³, complemented by fuzzy-set Qualitative Comparative Analysis - fsQCA (Ragin, 2000)⁴⁴. The results are directly reported in this section for the sake of avoiding redundance between the strict reporting of the results and their interpretation. This analysis was performed on the data set of the EU survey, which included enough observations to allow a more in-depth exploration of the relationships among the variables of study. The raw output of our analysis is presented in Annex E, Annex F.

6.5.1.1 Path Analysis results

In our study, Path Analysis was utilised to examine the interconnections among sociodemographic, behavioural, and psychological variables in relation to citizens' interest in sustainable food consumption. Within this framework, sustainable behaviour was identified as a mediating variable. The psychological and behavioural constructs, as well as the sociodemographic variables, were selected to comprehensively represent the array of factors that directly or indirectly influence sustainable food purchasing decisions. Table 9 details these constructs and variables, outlining their respective roles as enablers or barriers in exhibiting sustainable food behaviour (see also Annex E).

Identified Factors	Sustainable Food Consumption	Sustainable behaviour
Sustainable behaviour	+	N/A
Age	+	N/A
Stress	-	N/A
Closeness to nature	+	+

Table 9. Identified factors affecting key sustainable behaviour and sustainable food consumption

 ⁴³ Wright, S. (1934). The method of path coefficients. The annals of mathematical statistics, 5(3), 161-215.
 ⁴⁴ Ragin, C. C. (2000). Fuzzy-set social science. University of Chicago Press.



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement n° 101084201



Gender (male)	+	+
Gender (female)	N/A	+
Time orientation	-	-
Food security	-	N/A
Self-efficacy	+	N/A
Cost	+	-
Ethical reasons	+	+
Quality	+	N/A
Health benefits	+	N/A
Eco-labels	N/A	+
Brand reputation	N/A	-
Environmental impact	N/A	+
Income	N/A	+

Sustainable behaviour. In terms of the direct effects on sustainable food consumption, the data reveals a substantial positive impact associated with sustainable behaviour. This suggests that individuals who actively adopt sustainable behaviour patterns across various aspects of their lives are more inclined to extend this environmentally conscious behaviour to their food choices. This finding aligns with existing literature, emphasising the link of sustainable behaviours and highlights the pivotal role of overarching sustainable behaviour habits in influencing specific dietary choices. As individuals increasingly prioritise sustainability in their overall consumption practices, the positive impact on sustainable food choices becomes a logical extension, reflecting a holistic commitment to environmentally conscious lifestyles.

Gender. Among demographic factors, gender, particularly being male, demonstrates a direct positive effect. This finding implies that, within the surveyed population, there is an apparent inclination among males toward sustainable food consumption. Existing literature supports this observation, suggesting that gender can play a role in shaping individuals' attitudes and behaviours regarding sustainable practices, including dietary choices.

Age. The analysis indicates that age exhibits a positive, but relatively small effect. This suggests that, within the surveyed population, there is a modest association between age and sustainable food consumption.




Cost. The findings reveal an interesting relationship between the perceived cost of sustainable food products and individuals' consumption patterns. Contrary to conventional expectations where higher costs might be presumed to discourage consumption, the analysis suggests a positive influence. This implies that individuals are more inclined to engage in sustainable food consumption when they perceive these products to be priced higher. Possible explanations for this phenomenon could include the perception of higher costs signalling superior quality or ethical production practices, motivating consumers to make more environmentally conscious choices despite the financial implication.

Closeness to nature: One prominent positive influencer identified in the analysis is "closeness to nature". This finding highlights a meaningful correlation between individuals who feel a deep connection to nature and their inclination towards opting for sustainable food options. Essentially, the data suggests that those with a strong affinity for the natural environment are more likely to embrace and prioritize environmentally conscious dietary choices. This connection implies that individuals who perceive themselves as an integral part of the broader natural world are motivated to align their dietary practices with sustainability, recognizing the impact of their choices on the environment.

Stress and Time orientation. Contrarily, the data analysis uncovers noteworthy negative impacts associated with both "Stress" (-0.045) and "Time orientation" (-0.052), shedding light on the intricate dynamics that influence individuals' engagement in sustainable food consumption. The negative correlation linked to stress suggests that individuals grappling with higher stress levels are less inclined to adopt sustainable dietary practices. This finding implies that stress may act as a deterrent, potentially diverting individuals' attention away from environmentally conscious food choices.

Moreover, the negative impact associated with a present-oriented time perspective further accentuates the complexity of psychological factors at play. Individuals who predominantly focus on immediate concerns and short-term perspectives exhibit a reduced likelihood of embracing sustainable food practices. This insight suggests that those who prioritize immediate gratification or short-term benefits are less attuned to the long-term environmental implications of their dietary decisions. Together, these findings underscore the complex interplay of psychological factors in shaping individuals' behaviours toward sustainable food consumption. Stress and a present-oriented time perspective emerge as barriers, highlighting the need for holistic approaches that address psychological well-being and time perspective in promoting sustainable dietary choices.

6.5.2 Distinctive Profiles indicative of sustainable food behaviour - fsQCA results

To achieve a more comprehensive profiling of respondents from the EU survey, we employed the fsQCA method, allowing the identification of various combinations of conditions associated with the observed outcomes. The data analysis' results illuminated distinct respondent profiles that exemplify sustainable food behaviour, with each profile delineated by specific demographics and lifestyle factors (Figure 47, Annex G). It's important to note that due to the limited presence of non-binary individuals in the initial





survey sample, an exact profile for this group could not be derived, highlighting the need for more inclusive research in future studies.

Profile 1 encompasses young women with higher incomes residing in urban or semi-urban areas. This group is defined by demographic features such as age below 45 and income levels surpassing €25,000. The urban or semi-urban residential setting aligns with their propensity for sustainable food practices.

In **Profile 2**, aged and educated women in urban or semi-urban areas exhibit sustainable food behaviour. This group is characterized by demographic features such as age equal to or above 45 and educational attainment at the level of a bachelor's degree or equivalent. The urban or semi-urban residential setting further defines their sustainable food behaviour.

Profile 3 represents young, educated women with lower incomes who reside in rural areas. This group is identified by age below 45, educational attainment of a bachelor's degree or equivalent, and income levels not exceeding €25,000. The preference for sustainable food behaviour is coupled with the distinct residential setting of rural areas.

Profile 4 involves young, less educated men with higher incomes living in urban or semiurban areas. Demographic features include age below 45, educational attainment below a bachelor's degree or equivalent, and income levels exceeding €25,000. The urban or semiurban residential setting is associated with their sustainable food practices.

Profile 5 comprises aged, educated men with higher incomes residing in urban or semiurban areas. This group is characterized by age equal to or above 45, educational attainment at the level of a bachelor's degree or equivalent, and income levels exceeding €25,000. The urban or semi-urban residential setting is integral to their sustainable food behaviour.







Figure 47. Sustainable Food Behavioural profiles based on survey findings

The analysis highlights the varying determinants of sustainable food behaviour, revealing that education plays a pivotal role for women, while income and residential location are primary influencers for men. Women with higher educational attainment are more inclined to adopt sustainable practices, emphasizing the significance of educational backgrounds in shaping behaviour. Conversely, for men, economic considerations and residing in urban or semi-urban areas are key factors influencing sustainable food behaviour. This understanding of demographic influences provides a foundation for targeted strategies that consider gender-specific factors in promoting sustainable dietary choices.

Building on these insights, the survey's profiling of individuals based on sustainable food behaviour offers a nuanced understanding of distinct profiles, such as young women with higher incomes in urban areas (Profile 1) and aged, educated men with higher incomes in urban areas (Profile 5). Recognising these profiles allows for more tailored interventions. Initiatives aimed at promoting sustainable food practices in urban or semi-urban areas can address the specific preferences and concerns of Profile 1 and Profile 5 individuals. Simultaneously, efforts targeting rural areas can be designed to resonate with the characteristics of Profile 3, representing young, educated women with lower incomes. This targeted approach leverages the benefits of understanding unique demographic profiles, facilitating more effective and tailored strategies to encourage environmentally conscious dietary choices across diverse populations.





7. Conclusions

7.1 Delphi study conclusion

The present study aims to provide an analysis of key stakeholders in the food system, regarding broader issues of climate change, biodiversity, and food security. Specifically, the objective is to identify the main challenges, needs, and trends of stakeholders through a two-round Delphi study, seeking consensus on significant Strengths, Weaknesses, Opportunities, and Threats, with the scope of providing relevant information and contributing to the creation of more resilient food systems. The Delphi study was conducted with 79 participants from various European countries, covering all biogeographical regions among four groups; Policymakers, Practitioners, Civil Society Organizations, and Consumers.

According to the opinions of experts, the following joint conclusions emerge:

- Most of the participants (except policymakers) believe that Europe is facing food insecurity problems.
- Economic and political instabilities are some of the most important threats for food insecurity.
- The intensification of the use of enhancers and pesticides in order to increase production has long-term negative effects on food security, while reducing biodiversity and increasing greenhouse gas emissions.
- There is a strong dependence in the agri-food sector on direct public financial support, especially in small-scale food enterprises.
- There is a large gap in monitoring, information and collaboration on food sustainability methods, environmental impact, and food waste.
- High process and reduced availability of sustainable agri-food products are observed, which limits their consumption.
- Factors such as brand name and ease of preparation and consumption often lead to unsustainable food choices.
- The adoption of sustainable food production methods will have a positive environmental impact, but there is uncertainty regarding how this will happen and whether it will be able to meet global food demand.
- Eco-labeling and the existence of signs of environmental excellence could lead to more conscious choices of agri-food products and increase the demand and consumption of sustainable food.
- New technologies and the use of digital media can increase both sustainable production and consumption.
- Shortening the food supply chain, use of local supply as well as the production and consumption of seasonal and local agri-food products, contributes positively to the sustainability of the food system.
- It is important to upgrade rural areas (infrastructure, accessibility, connectivity, opportunities, innovations) to achieve "Generation renewal" in the primary sector and strengthen the food system.





Furthermore, significant conclusions regarding Goals 2 (Zero Hunger) and 12 (Responsible Consumption and Production) of the Agenda 2030 emerge from the participants' responses. Specifically, high rates of consensus and agreement regarding access to safe, nutritious, and adequate food emphasize the criticality of the issue, particularly for the poor and disadvantaged (Target 2.1). The involvement of Civil Society Organizations, according to the responses, is considered to be able to contribute to reducing inequalities and creating a "nutritional democracy" regime. Additionally, emphasis was placed on enhancing smallscale producers and ensuring equitable access to natural resources, knowledge, financial services, and markets (Target 2.3). Moreover, investments in international partnerships, technological development, research, and rural infrastructure (Target 2.a) are among the statements that achieved high levels of agreement. Regarding SDG 12, efficient use of natural resources (Target 12.2), reducing food loss and waste throughout the supply chain (Target 12.3), and encouraging mainly large enterprises to adopt sustainable practices and incorporate information about their sustainability (Target 12.6) stand out from the participants' responses. Finally, ensuring adequate information and awareness for all stakeholders (Target 12.8) and promoting local culture and products (Target 12.b) achieved high levels of consensus and agreements as well.

The exploration of disparities among the segments within the SWOT matrix and behaviorrelated statements underscores the intricate nature and importance of human dynamics and consumer conduct. While broad consensus is observed across factors pertaining to strengths, weaknesses, opportunities, threats, and sectoral questions in the food sector, significantly lower rates of concurrence emerge in the realm of "Other Statements". This accentuates the necessity for a nuanced comprehension of human behavior and consumer preferences. Such insights are pivotal for crafting strategies that align with consumer needs and preferences, thereby fostering the development of sustainable and resilient food systems that prioritize health, equity, and environmental sustainability of the food system.

7.2 Survey conclusions

The study on sustainable food consumption examined a diverse sample of 2,785 individuals, encompassing various demographic characteristics. Noteworthy features included a mean age of 30.7, diverse educational backgrounds, and a broad income distribution. The evaluation of sustainable food consumption unveiled generally normal distributions for the examined variables, with robust internal consistency observed in constructs like self-efficacy, food security, and sustainable behaviour. The correlation matrix analysis underscored positive relationships among psychological factors, revealing connections such as a positive association between a sense of control and self-efficacy, and environmental awareness correlating with ethical considerations.

In Path Analysis, direct effects on sustainable food consumption highlighted the pivotal role of sustainable behaviour, with positive impacts from gender (being male), age, closeness to nature, and various other contributing factors. Conversely, stress, food security, and present-oriented time orientation exhibited negative impacts. The direct effects on sustainable behaviour emphasised the positive influence of environmental awareness, ethical considerations, both male and female genders, eco-labels, and income. Conversely,





negative effects were associated with concerns about cost, brand reputation, and a present-oriented time perspective. The study further uncovered indirect effects through sustainable behaviour as a mediator, highlighting the importance of income, environmental awareness, and eco-labels in shaping sustainable food choices.

In conclusion, the study identifies sustainable behaviour as the most significant driver of sustainable food choices, while time orientation emerges as the most substantial barrier influencing such behaviours. These findings provide valuable insights into the complex web of factors shaping sustainable food consumption behaviours, emphasising the central role of sustainable behaviour while acknowledging the diverse influences and barriers at play.

Further research and work of ECO-READY

The Eco-Ready project will work towards the promotion of sustainable food purchase practices among different stakeholder groups. Through the exchanges with the 10 Living labs across Europe, the establishment of our holistic Observatory and the mobile application, the project strives to raise awareness around food security, and the promotion of sustainable food consumption. Through various engagement activities, the project aims to inform stakeholders on how the topics of food security and sustainable behaviour relate to building resilient agricultural consumption. The identification of behavioural factors affecting sustainable behaviour, and the formation of distinct profiles of consumers who tend to exhibit a more sustainable behaviour pattern, can help to bring behavioural change, put in place tailored actions and tools and help policy-makers and practitioners to build more resilient food production systems.

The results from the present report will serve as valuable input and baseline for all this work in the project, with the ultimate goal to help promote the increase of food security and trigger a behavioural change towards more sustainable behaviour among citizens.









Delphi Study: First-Round Questionnaires



Delphi Study: Stakeholders analysis

Round 1

The present questionnaire is part of the ECOREADY project «Achieving Ecological Resilient Dynamism for the European food system through consumer-driven policies, socio-ecological challenges, biodiversity, data-driven policy, sustainable futures», funded by the European Union's HORIZON-CL6-2022 research and Innovation programme under grant agreement N°101084201. More information and details about the project can be found on the ECO-Ready website at: <u>https://www.eco-ready.eu/</u>

The objective is to identify the Strengths, Weaknesses, Opportunities and Threats related to food security, biodiversity, and climate change towards revealing their key challenges, needs, and trends. There are two rounds of questionnaires to complete the study.

In the current round (1st round), you are asked to indicate your level of agreement in every statement to all four categories below (i.e., Strengths, Weaknesses, Opportunities and Threats). In addition, if you feel something is missing, you can add your statement to the last open-ended question in every category.

The data are collected only for research purposes. The completion of the questionnaire takes less than 16 minutes.

Thank you for your time!







Questionnaire for Policymakers (SWOT)

STRENGTHS

1) Food insecurity problems are not currently prevalent in EU countries (including the UK).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Globalization and international trade have positive effects on food security as they have increased the quantity, availability, and affordability of food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Sustainable production methods ensure the viability of large-scale food enterprises.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4) Sustainable production methods ensure the viability of small/family-type food enterprises.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Large-scale food enterprises can implement sustainable production methods more easily compared to small/family ones.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Energy production from Renewable Energy Sources is increasing, contributing to the food system's sustainability and environmental protection.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Hydroponic food production in inner cities, saves the resources needed to process, transport, store, and resell the products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

8) Hydroponics offers the potential to increase food production without committing arable land.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Agroforestry in agricultural lands is a natural crop irrigation system and leads to a more efficient use of water.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





10) The provision of tax or other incentives (e.g., exemption from VAT) to facilitate food donation, contributes to the reduction of food waste and therefore to food security and saving resources.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) EU policies encourage the adoption of eco-friendly technologies and practices in food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) EU policies foster cooperation and partnerships among different sectors to address food security and biodiversity conservation.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) The new EU Common Agricultural Policy (CAP) provides support for farmers and encourages sustainable practices.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

WEAKNESSES

1) Economic instability is one of the most important reasons for food insecurity.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) Countries with weaker economies are more vulnerable to food crises.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly agree

3) Political and social instabilities intensify food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Sustainable food production alone cannot meet global food demand.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Inadequate management of natural resources leads to lower food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





6) The planning and management of agricultural lands within protected areas is currently insufficient.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Significant discrepancies and differences exist between the income of agriculture and other sectors.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) There is a strong dependence in the agri-food sector on direct public financial support.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) An unequal distribution of financial support is observed, with small farmers receiving a relatively small percentage of it.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) EU policies do not adequately address the needs of small-scale farmers and producers.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) Financial support to the agri-food sector mainly concerns a small number of products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) Food production is heavily concentrated in a few specific regions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) A significant percentage of agri-food products concerns processed food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree

14) Imports of agri-food products are larger than exports (the deficit trade balance), which potentially implies a burden on the environment due to the "food miles" that the products travel.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) The adoption of hydroponics in food production requires high costs.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly





16) The adoption of hydroponics in food production requires an increased use of resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) Food production through hydroponics is unable to meet the food demand.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) The Pollutant Exchange (Kyoto Protocol) creates unfair competition between more and less developed countries, affecting food security, climate change, and biodiversity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

19) Agri-food prices do not reflect the true costs of resource use and greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly

20) There are insufficient systems to control and document the environmental claims of food enterprises, which could lead to the adoption of more sustainable production methods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

21) There is an absence of quantitative data recording food waste and loss for each stage of the supply chain.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

22) There are insufficient networks of cooperation, information, and participation of all stakeholders in the agri-food system among EU countries and within each country.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

23) EU food policies are not adequately aligned with other environmental policies and initiatives.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

24) EU policies do not adequately address the needs of small-scale farmers and producers.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

25) Please add your statement/s (and ranking) below, if you feel something is missing.

•••••

OPPORTUNITIES





1) The COVID-19 pandemic has highlighted the need for more resilient and sustainable food systems.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Enhancing imports of agri-food products where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency.

-	•			•		
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
aisagice		uisagi cc	nor usagree	agree		agree

3) Growing more than one type of crop in the same field (polyculture) could increase crop yields in the long term.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) For some crops (e.g., wheat, rice) climate change has positive effects on increasing their yields.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) Planting non-productive forest plants on agricultural land is a good practice of more efficient resource management, with positive impacts on biodiversity and food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) can contribute to the creation of new technologies and innovations that support agri-food production.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) New technologies and practices offer opportunities for more sustainable and efficient food production and distribution.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Digital technologies can improve the traceability and transparency of the food system, and facilitate the adoption of sustainable practices.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) International cooperation and partnerships can help address global food security and biodiversity challenges.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





10) The existence of an institutional framework through the new CAP for providing support to young farmers will strengthen the food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) Supporting agri-food start-ups will contribute to food system sustainability and food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) EU financial regulations (e.g., Young farmers initiative) attract young people to the agri-food sector.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) Improving competition rules for collective initiatives that promote sustainability throughout the agri-food supply chain, is a good and feasible practice to create a more resilient food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) Establishing regulations and prohibitions to promote sustainability among agri-food enterprises is a good and feasible practice to increase the supply and demand of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	5	agree

15) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

16) The involvement of civil society organizations in monitoring the value chain's compliance with sustainability standards, could contribute to building a resilient and environmentally friendly food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) The application of a European Platform on food loss can contribute to reducing waste by providing real-time data on food loss.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) A possible transfer of taxes from labour to resource use could make the agri-food sector more attractive, for both workers and entrepreneurs, as it would potentially increase staff wages, while also reducing the total operating cost of enterprises that adopt sustainable methods.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

19) Changes in taxation, at the national and European level, regarding sustainable food are possible with the aim of supporting food security, biodiversity and tackling climate change.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

20) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

THREATS

1) Climate change has negatively affected food production and security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) For some crops, the negative effects of climate change can be severe (e.g., vegetables, olives, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) The uneven and irregular impacts of climate change make it challenging to develop universally applicable measures.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		uisagree	nor disagree	agree		agree

4) Climate-induced extreme weather events, such as droughts, floods, and storms, are causing crop losses and threatening food production in many areas.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Uncertainty and unpredictability in climate change impacts make it difficult to plan and implement effective food policies and measures.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Agricultural intensification and expansion are leading to biodiversity loss, soil degradation, and other negative environmental impacts that threaten the long-term sustainability of food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Urbanization puts a strain on the food system and food security.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) The food crisis faced by countries outside the European area (e.g., sub-Saharan Africa) has an impact on European countries.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) Conflict and unrest in some countries could cause food security problems in other parts of the world as well.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Global economic and political instability and insecurity can affect food prices, trade, and supply.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Globalization and international trade can have negative consequences for countries facing economic, social, and/or political difficulties regarding food security and the food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

13) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) will burden and create environmental pressures (increased greenhouse gas emissions and reduced biodiversity) for the areas in which they are based.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) The Emissions Trading System (Kyoto Protocol) threatens food security in less developed countries due to reasons such as a lack of technology, methods, and financial resources.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

15) The Emissions Trading System (Kyoto Protocol) risks not reducing greenhouse gas emissions, as developed countries can trade emissions surplus/deficit, allowing them to pay fines or "buy" pollutants from weaker states.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

16) The food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) The high cost of livestock waste management causes significant pressure on the environment and climate change.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) European trade policies are insufficient to increase demand for sustainable products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree		disagree	nor disagree	agree	, igi ee	agree

19) Please add your statement/ (and ranking) below, if you feel something is missing.

•••••

Questionnaire for Practitioners (SWOT)

STRENGTHS

1) Food insecurity problems are not currently prevalent in EU countries (including the UK).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Sustainable production methods ensure the viability of large-scale food enterprises.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

3) Sustainable production methods ensure the viability of small/family-type food enterprises.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4) Large-scale food enterprises are able to implement sustainable production methods more easily compared to small/family ones.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Energy production from Renewable Energy Sources is increasing, contributing to the food system's sustainability and environmental protection.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) The provision of tax or other incentives (e.g., exemption from VAT) to facilitate food donation contributes to the reduction of food waste and therefore to food security and saving resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Globalization and international trade have positive effects on food security as they have increased the quantity, availability, and affordability of food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Eco-labelling of agri-food products could lead to an increase in demand and consumption of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The trustworthiness of agri-food products' eco-labelling and sustainability claims is important to consumers' decision of purchasing and consuming sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Recognition through environmental Marks of Excellence and events/awards for sustainable communities, enterprises, and products can play a crucial role in promoting and encouraging sustainable production and consumption.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly

11) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

WEAKNESSES

1) Economic instability is one of the most important reasons for food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Sustainable food production alone could not meet global food demand.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree		disagree	nor disagree	agree	, igi 00	agree

3) Inadequate management of natural resources leads to lower food production.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

 Significant discrepancies and differences exist between the incomes of agriculture and other sectors.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) There is a strong dependence of the agri-food sector on direct public financial support.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) An unequal distribution of financial support is observed, with small farmers receiving a relatively small percentage of it.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly

7) Financial support to the agri-food sector mainly concerns a small number of products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

8) Food production is heavily concentrated in a few specific regions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) A significant percentage of agri-food products pertains to processed food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Consumers choose products based on factors such as price and brand rather than their environmental footprint or nutritional value.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) Consumers do not have the knowledge to understand labels regarding the production and expiration of agri-food products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Much of the food waste is due to a lack of understanding of product labels.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





13) There is an absence of quantitative data recording food waste and loss for each stage of the supply chain.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

14) There is no adequate plan for the management and exploitation of household waste, both at the European and national levels.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) will have a positive impact only on the regions in which they are based in terms of technology, innovations, knowledge, and the cost of producing sustainable agri-food products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

16) Agri-food prices do not reflect the true costs of resource use and greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Dibugice	disagree	nor disagree	agree	Agree	agree

17) There are insufficient systems to control and document the environmental claims of food enterprises, which could lead to the adoption of more sustainable production methods.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

18) There are insufficient networks of cooperation, information, and participation of all stakeholders in the agri-food system among EU countries and within each country.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

19) Please add your statement/s (and ranking) below, if you feel something is missing.

OPPORTUNITIES

.....

1) Enhancing imports of agri-food products, where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) Supporting local markets could contribute positively to food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





3) Shortening the food supply chain between producers and consumers would have a positive impact on food sustainability.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4) Cooperation and strengthening the role of cooperatives and producer organizations could contribute to shortening the food supply chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) The use of local sources of supply, as well as the production and consumption of seasonal and local agri-food products, contributes positively to the sustainability of the food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Demand for "locally produced" food raises the demand for locally cultivated plants and varieties, providing significant opportunities for farmers.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Increasing public interest in sustainable and locally sourced food can create further opportunities for small-scale food producers and enterprises.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Ensuring the sustainability of the entire food value chain, from production to consumption, is crucial for creating a resilient and sustainable food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) Decentralization of food production and consumption activities can help to strengthen local economies, reduce transportation costs, and improve food security and access.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The use of traditional methods of food production, processing, and storage, in some cases, has positive effects in terms of the sustainability of the food system.

				-		
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
uisagiee		uisayiee	nor usagree	agree		agree

11) Research and innovation related to the production of sustainable agri-food products could lead to a reduction in the production cost and, therefore, to a drop in market prices.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Reducing food waste could contribute to addressing food insecurity while having positive effects on climate change and biodiversity due to resource savings.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

13) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers and other supporting services) can contribute to the creation of new technologies and innovations that support agri-food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) The rise of e-commerce presents an opportunity to develop distribution networks using short food supply chains.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) ICT integration in the primary sector (agriculture, farming, fishing etc.) can help increase sustainable food production.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

16) The development of modern supply systems and geographically distributed warehouses by large retail chains helps to minimize costs along the value chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) The development of modern supply systems and geographically distributed warehouses by large retail chains helps to minimize the environmental impacts along the value chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) Improving competition rules for collective initiatives that promote sustainability throughout the agri-food supply chain is a good and feasible practice to create a more resilient food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

19) Public-private partnerships can enhance the sustainability and resilience of the food system by leveraging resources and expertise from different sectors.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





20) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

21) A possible transfer of taxes from labour to resource use could make the agri-food sector more attractive, for both workers and entrepreneurs, as it would potentially increase staff wages, while also reducing the total operating cost of enterprises that adopt sustainable methods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

22) Taxation can play a role in regulating the supply and demand of sustainable food, but it should be balanced with other policy measures.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

23) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

THREATS

1) The intensification of the use of enhancers and pesticides to increase crop production has longterm negative effects on food security, whereas in may also result in biodiversity loss and higher greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Monoculture can produce larger amounts of certain foods at lower costs in the short term, but it reduces biodiversity and threatens food security in the long term.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Biodiversity loss and climate change negatively affect food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Drought is one of the significant abiotic stresses threatening crop production in Europe.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





6) Globalization and international trade can have negative consequences for countries facing economic, social, and/or political difficulties regarding food security and the food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) The adoption of sustainable production methods will lead to an increase in the prices of agri-food products.

1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagiee	disagree	nor disagree	agree	Agree	agree

8) Rising input prices in the agri-food sector hinder sustainable food production.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Policies to support the production of sustainable agri-food products would have the effect of reducing mass/conventional production and thus increasing food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Changes in consumer preferences and demands can lead to unsustainable practices and overproduction of food products

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) will burden and create environmental pressures (increased greenhouse gas emissions and reduced biodiversity) for the areas in which they are based.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) Inefficient supply chains can lead to significant food waste and increased carbon emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) The food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) The high cost of livestock waste management causes significant pressure on the environment and climate change.





1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat	Agree	Strongly

15) European trade policies are insufficient to increase demand for sustainable products.

1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagiee	disagree	nor disagree	agree	Agree	agree

16) Please add your statement/ (and ranking) below, if you feel something is missing.

•••••

Questionnaire for Civil Society (SWOT)

STRENGTHS

1) Food insecurity problems are not currently prevalent in EU countries (including the UK).

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

 It is possible to create regenerative ecosystems, through the agri-food sector, which does not simply mitigate the negative consequences of the food system but supports and helps maintain and develop healthy ecosystems.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Civil Society Organizations support diversity and cooperation, unlike enterprises and markets that tend towards homogeneity influenced by competition.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
aisagree	U U	aisagree	nor alsagree	agree	-	agree

4) Hydroponic food production in inner cities saves the resources needed to process, transport, store, and resell the products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Traditional and indigenous knowledge about agriculture and food production can offer valuable insights for sustainable and resilient food systems.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	U	agree

6) The cultural characteristics (morals, customs, religion, etc.) of a region affect the food security in that region.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





7) The cultural characteristics (morals, customs, religion, etc.) of a region affect the sustainability of the regional agri-food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

8) Civil Society Organizations contribute to reducing inequalities in food production, availability, accessibility, and consumption, thereby supporting food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Civil Society Organizations urge stakeholders to integrate gender equality and women's empowerment in the design and implementation of food security and nutrition policies and programmes.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Civil Society Organizations urge stakeholders to give the highest priority to the most vulnerable, food-insecure and malnourished individuals and groups when designing and implementing food security and nutrition policies and programmes.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) Civil Society Organizations confirm the commitment of governments to implement the right to adequate food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Civil Society Organizations create a regime of "food democracy", where all stakeholders of the food system can influence more directly and determine, to a certain extent, the applied policies and the course of production and consumption.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

13) The collaboration between Civil Society Organizations provides a holistic approach regarding food security, climate change, and biodiversity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) The provision of tax or other incentives (e.g., exemption from VAT) to facilitate food donation, contributes to the reduction of food waste and, therefore, to food security and saving resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) Please add your statement/s (and ranking) below, if you feel something is missing.





.....

WEAKNESSES

1) Economic instability is one of the most important reasons for food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Economically weaker countries face a more severe food crisis.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Political and social instabilities intensify food insecurity.

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	/ GIEC	agree

4) Sustainable food production alone cannot meet global food demand.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Inadequate management of natural resources leads to lower food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) The planning and management of agricultural lands within protected areas is currently insufficient.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Food production is heavily concentrated in a few specific regions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) A significant percentage of agri-food products pertains to processed food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	0	agree

9) Consumers choose products based on factors such as price and brand rather than their environmental footprint or nutritional value.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Consumers do not have the knowledge to understand labels regarding the production and expiration of agri-food products.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) Much of the food waste is due to a lack of understanding of product labels.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) There is no adequate plan for the management and exploitation of household waste, both at the European and national levels.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) Monoculture leads to soil erosion and biodiversity loss.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) Agri-food prices do not reflect the true costs of resource use and greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) There are insufficient systems to control and document the environmental claims of food enterprises, which could lead to the adoption of more sustainable production methods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

16) There are insufficient networks of cooperation, information, and participation of all stakeholders in the agri-food system among EU countries and within each country.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) Inequalities in access to resources and wealth can create barriers to equitable and sustainable food systems.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

18) Please add your statement/s (and ranking) below, if you feel something is missing.

OPPORTUNITIES

.....

1) The exploitation of NATURA areas can contribute to food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	_	disagree	nor disagree	agree		agree





2) Crop Wild Relatives (plants closely related to crop plants) can increase levels of food security while also working positively for the environment and biodiversity.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

3) Growing more than one type of crop in the same field (polyculture) could increase crop yields in the long term.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) For some crops (e.g. wheat, rice) climate change has positive effects on increasing their yields.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Reducing the use of harmful pesticides and crop enhancers could increase crop yields in the long term.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) The separation of agricultural and livestock lands enhances food production while having a positive effect on the natural environment.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Establishing regulations and prohibitions to promote sustainability among agri-food enterprises is a good and feasible practice to increase the supply and demand of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The involvement of Civil Society Organizations in monitoring the value chain's compliance with sustainability standards could contribute to building a resilient and environmentally friendly food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The operation of Civil Society Organizations can help businesses throughout the supply chain to shift towards more sustainable methods of production, processing, storage, and distribution of agri-food products.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The application of a European Platform on food loss can contribute to reducing waste by providing real-time data on food loss.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Civil Society Organizations can help EU SMEs integrate into the food system through means such as strengthening local markets.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) Increasing public interest in sustainable and locally sourced food can create further opportunities for small-scale food producers and enterprises.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

14) Shortening the food supply chain between producers and consumers would have a positive impact on food sustainability.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) Cooperation and strengthening the role of cooperatives and producer organizations could contribute to shortening the food supply chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

16) The use of local sources of supply, as well as the production and consumption of seasonal and local agri-food products contribute positively to the sustainability of the food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) The decentralization of sustainable production and consumption activities at the local level would result in the strengthening of society, businesses, and the products of these areas.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) The use of traditional methods of food production, processing, and storage, in some cases, has positive effects in terms of the sustainability of the food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





19) The actions of Civil Society Organizations can strengthen the sustainability of the food system and change consumer behaviour in this direction by informing and sensitizing consumers.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

20) Civil Society Organizations can contribute to the "Social Connection" regarding the responsibility and awareness of everyone involved in the food system, sustainable production and consumption.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

21) Cooperation between consumer, producer, and worker cooperatives could lead to the promotion and empowerment of sustainable nutrition, involving the entire value chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

22) Civil Society Organizations should be more directly involved in the formulation of policies regarding the food system, through opinions and providing information.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

23) Please add your statement/s (and ranking) below, if you feel something is missing.

•••••

THREATS

1) Climate change has negatively affected food production and security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) For some crops, the negative effects of climate change can be severe (e.g., vegetables, olives, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) The uneven and irregular impacts of climate change make it challenging to develop universally applicable measures.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Urbanization puts a strain on the food system and food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





5) The food crisis faced by countries outside the European area (e.g., sub-Saharan Africa) has an impact on European countries.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) Biodiversity loss and climate change negatively affect food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly

7) Dietary patterns affect food security, sustainability, climate change and biodiversity.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

8) Changes in consumer preferences and demands can lead to unsustainable practices and overproduction of food products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) The population weakening and demographic ageing of rural areas threaten food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) Globalization and international trade can have negative consequences for countries facing economic, social and/or political difficulties regarding food security and the food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) The intensification of the use of enhancers and pesticides to increase production has long-term negative effects on food security while reducing biodiversity and increasing greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) The conventional way of agri-food production has negative consequences for pollinators, degrading biodiversity and production as well.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) Inefficient supply chains can lead to significant food waste and increased carbon emissions.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) The food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

16) Policies to support the production of sustainable agri-food products would have the effect of reducing mass/conventional production and thus increasing food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

17) Most public subsidies regarding agri-food sector concern activities that have a negative impact on the environment and biodiversity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) European trade policies are insufficient to increase demand for sustainable products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

19) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

Questionnaire for Consumers (SWOT)

STRENGTHS

1) Food insecurity problems are not currently prevalent in EU countries (including the UK).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Providing tax incentives (such as VAT exemption) to facilitate food donations reduces hunger for low-income households.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Globalization and international trade have positive effects on food security as they have increased the quantity, availability, and affordability of food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





4) New enterprises are entering the sustainable food industry, providing more choices for consumers, both in terms of product and price variety.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) The gradual transition to sustainable practices throughout the food value chain creates new jobs.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Sustainable food consumption has a positive environmental impact and also improves the health of consumers, thus achieving food security and nutritional security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Eco-labelling of agri-food products could lead to an increase in demand and consumption of sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Recognition through environmental Marks of Excellence and events/awards for sustainable communities, enterprises, and products can play a crucial role in promoting and encouraging sustainable production and consumption.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The trustworthiness of agri-food products' eco-labelling and sustainability claims is important to consumers' decision of purchasing and consuming sustainable food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The cultural characteristics (morals, customs, religion, etc.) of a region affect the food security in that region.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Diougroo	disagree	nor disagree	agree		agree

11) The cultural characteristics (morals, customs, religion, etc.) of a region affect the sustainability of the regional agri-food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) The rise of alternative food systems, such as farmers' markets and community-supported agriculture, can provide consumers with access to fresh, locally grown food while supporting small-scale farmers and promoting food security.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) Please add your statement/s (and ranking) below, if you feel something is missing.

•••••

WEAKNESSES

1) Economic instability is one of the most important reasons for food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Countries with weaker economies are more vulnerable to food crises.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Political and social instabilities intensify food insecurity.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Food production is heavily concentrated in a few specific regions.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) A significant percentage of agri-food products pertains to processed food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Lack of understanding about product labels contributes to a significant amount of food waste.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Effective management and utilization of household waste is lacking at both the national and European levels.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Agri-food prices do not reflect the true costs of resource use and greenhouse gas emissions.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) There are insufficient networks of cooperation, information, and participation of all stakeholders in the agri-food system among EU countries (including the UK) and within each country.





1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

10) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

OPPORTUNITIES

1) Supporting local markets could contribute positively to food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) Shortening the food supply chain between producers and consumers would have a positive impact on food sustainability.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly agree

3) Shortening the food supply chain between producers and consumers would have a positive impact on food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Cooperation and strengthening the role of cooperatives and producer organizations could contribute to shortening the food supply chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) The use of local sources of supply, as well as the production and consumption of seasonal and local agri-food products, contributes positively to the sustainability of the food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Decentralization of food production and consumption activities can help to strengthen local economies, reduce transportation costs, and improve food security and access.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Cooperation between consumer, producer, and worker cooperatives could lead to the promotion and empowerment of sustainable nutrition, involving the entire value chain.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) The use of traditional methods of food production, processing, and storage, in some cases, has positive effects in terms of the sustainability of the food system.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) Reducing food waste could contribute to addressing food insecurity, while having positive effects on climate change and biodiversity due to resource savings.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) A better communication and marketing strategy for sustainable agri-food products could increase consumer demand, even if prices for these products are high.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) Decreased consumption of livestock products will raise demand for European-grown and proteinbased plants.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) Education and awareness-raising efforts can increase consumer understanding of the linkages between food choices, environmental, social, and economic sustainability, leading to increased demand for sustainable agri-food products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

13) Increasing consumer demand for sustainably produced food can encourage more farmers and producers to adopt these practices, leading to greater sustainability and biodiversity conservation.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

14) The use of technology, such as apps and websites that provide information on sustainable food choices, can empower consumers to make more informed decisions about the food they purchase and consume.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

THREATS

1) Dietary patterns include the majority of foods whose production damages the environment and biodiversity, and is responsible for a large proportion of greenhouse gases.




1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) The population weakening and demographic ageing of rural areas threaten food production.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Modern lifestyles and consumption patterns lead to an increase in the consumption of "fast food".

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

4) The lack of knowledge and information regarding the environmental impact of food leads consumers to make incorrect dietary choices, both for the environment and for their health.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) The high prices of sustainable and organic foods limit their consumption.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
uisayiee		uisayiee	noi uisagiee	ayiee		ayiee

6) Limited availability and high prices of sustainably produced food can make it challenging for consumers to make environmentally responsible choices.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Consumers place particular emphasis on the brand name of products rather than their environmental impact and/or nutritional value.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly agree

8) Consumers may prioritize convenience and cost over environmental and social considerations when purchasing food products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) The ease of food preparation and consumption often leads to unsustainable food choices.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Habitual consumer choices pose barriers to growing sustainable food demand.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The incorrect understanding of the consumption and expiration dates of products leads to the waste of a large amount of food.





1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) Lack of information and awareness about the environmental and social impacts of food production can make it difficult for consumers to make informed choices.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

13) Alterations in the packaging or appearance of products lead to an increase in food waste, even though they are fit for consumption.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) Consumers rarely consider the origin of the agri-food products they consume.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

15) Please add your statement/s (and ranking) below, if you feel something is missing.

OTHER STATEMENTS

.....

1) When buying agri-food products, I choose those whose packaging is as environmentally friendly and recyclable as possible.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disaglee	disagree	nor disagree	agree		agree

2) When buying agri-food products, I choose those whose packaging seems to best protect the product without concern for its sustainability.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) I know the principles of the circular economy and operate accordingly, both in terms of household consumption of materials and food.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4) I use a shopping list based on my meal plan when grocery shopping.

	-				-	
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	5	agree

5) I am aware of my nutritional needs and adjust my diet accordingly.

	•			• •		
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





6) I know the appropriate portion size depending on the food and my needs, and I eat as much as I need without excess food.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) I try as much as possible to reduce the loss and waste of food coming from my household.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) I tend to discard food that has spoiled or has damaged packaging, even if it is still consumable.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) In my place of residence, there are appropriate means and structures for the utilization of food that is not suitable for consumption (e.g., household waste and food bins), as well as the corresponding information for citizens.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) I am conscious of my dietary choices and their impacts.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) I regularly consume meat and dairy products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) I often eat fast food.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Diougroo	disagree	nor disagree	agree		agree

13) I prioritize the consumption of locally produced food and pay attention to the origin of the food I eat.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

14) I know about seasonal products, and I prefer to consume them over non-seasonal ones.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree

15) I prefer diversity in my diet, and I consume different types of agri-food products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagiee	disagree	nor disagree	agree		agree





16) I am able to identify sustainable and organic agri-food products and choose them over nonorganic ones, regardless of price.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

17) I am able to identify sustainable and organic agri-food products and choose them over nonorganic ones, only if the price is reasonable.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

18) In the retail trade, there is great availability, accessibility, and affordability of sustainable and organic food.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

19) I am willing to pay a premium for organic and sustainably produced food to support environmentally-friendly farming practices.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaroo	Strongly
disagree	Disagiee	disagree	nor disagree	agree	Agree	agree

20) I believe that changing my dietary patterns and standards towards more sustainable food would improve not only my standard of living but also benefit society, the economy, and the environment.

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagiee	disagree	nor disagree	agree		agree

21) Please add your statement/s (and ranking) below, if you feel something is missing.

.....

Open-ended questions (Policy-Practice-Civil Society)

- 1) According to the strategic plan of the new Common Agricultural Policy (CAP), significant expenses are foreseen for providing advisory services to farmers, as well as for training and education activities for Agricultural Consultants. In your opinion, what are the main benefits expected to arise from the aforementioned measures, particularly concerning the environment and food production?
- 2) Drawing from your expertise, what are the primary capabilities (skills, knowledge, influence, etc.) that could contribute to the strengthening and sustainability of the food system?
- 3) According to research, organic farming has been proven to contribute to increased biodiversity and environmental protection, while simultaneously benefiting producers by enabling resource savings through reduced costs of pesticides (75-100%), fertilizers (45-90%), and others. However, this method also reduces crop yields (5-30%). Why do you believe organic product prices remain predominantly high, despite the cost reductions mentioned above, combined with "green" subsidies and grants to producers, potentially offsetting to some extent the loss of crop yields?
- 4) To become part of a resilient and sustainable agri-food system, what problems do you believe necessitate further research and changes as an expert's contribution?





- 5) With the increase in subsidies earmarked for Young Farmers under the CAP 2023-2027, what benefits do you believe could arise from attracting young farmers and herders in terms of strengthening and sustaining the food system?
- 6) How do you envision that new technologies (and technology in general) could contribute to improving the food system?
- 7) The implementation of the European Green Deal in the new CAP 2023-2027 stipulates that 25% of rural subsidies should be directed towards eco schemes (environmentally friendly practices). However, if a producer does not include any sustainable actions in their declaration, they will forfeit 25% of their subsidies. What impact do you believe the above measure would have, especially for small-scale producers and newcomers to the sector?
- 8) What are considered to be the primary threats facing the food system due to climate change, biodiversity loss, and food insecurity?

Open-ended questions (Consumers)

- 1) What do you consider to be the primary capabilities (skills, knowledge, influence, etc.) you possess as a consumer that could contribute to strengthening and sustaining the food system?
- 2) To contribute as a consumer to a resilient and sustainable agri-food system, what problems do you believe necessitate further research and changes?
- 3) How do you believe new technologies (and technology in general) could contribute to improving the food system?
- 4) What are considered to be the primary threats facing the food system due to climate change, biodiversity loss, and food insecurity?







Delphi Study: Second-Round Questionnaires



Delphi Study: Stakeholders analysis

Round 2

Dear expert,

A while ago you were invited to participate in a Delphi Study, contacted in the context of the ECOREADY project «Achieving Ecological Resilient Dynamism for the European food system through consumer-driven policies, socio-ecological challenges, biodiversity, data-driven policy, sustainable futures», funded by the European Union's HORIZON-CL6-2022 research and Innovation programme under grant agreement Nº101084201. More information and details about the project can be found on the ECO-Ready website at: https://www.eco-ready.eu/

We would like to thank you for your contribution and to invite you to complete this second and last round of the survey, indicated your level of agreement in the following statements regarding the potential/future of the European food system (Opportunities & Threats). The questionnaire contains those statements, which have not met consensus in the first round. In addition, there is one extra section of 15 statements (Sectoral Questions), based on suggestions from experts during the first round.

Consensus was obtained through the IQR, which represents the distance between the 25th and 75th percentile value of ratings. A smaller IQR indicates more consensus. Statements that obtained a Very Strong Consensus (IQR≤1.00) have been excluded from this round. The questionnaire contains statements **Consensus** (1.00<IQR≤2.00), **Moderate Consensus** (2.00<IQR<3.00) with Strong and Low Consensus (IQR≥3.00).

The level of consensus is listed for each statement.

The data are collected only for research purposes. The completion of the questionnaire takes less than 15 minutes

Thank you for your time!









Questionnaire for Policymakers

Opportunities

1) The COVID-19 pandemic has highlighted the need for more resilient and sustainable food systems. First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Enhancing imports of agri-food products where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency.

First Round Rating: IQR=2.75 - Moderate Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

3) For some crops (e.g., wheat, rice) climate change has positive effects on increasing their yields. First Round Rating: IQR=2.50 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

4) Planting non-productive forest plants on agricultural land is a good practice of more efficient resource management, with positive impacts on biodiversity and food production. F

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	7 (gi 00	agree

5) New technologies and practices offer opportunities for more sustainable and efficient food production and distribution.

First	Round	Rating:	IQR=1.50 -	Strong	Consensus
-------	-------	---------	------------	--------	-----------

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

6) International cooperation and partnerships can help address global food security and biodiversity challenges.

	5 .	5				
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	/ igi cc	agree

- First Round Ratina: IOR=1.50 Strona Consensus
- 7) The existence of an institutional framework through the new CAP for providing support to young farmers will strengthen the food system.

First Round Rating: IQR=1.75 - Strong Consensus

	5	5				
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	ea.g. ee	disagree	nor disagree	agree	, .g. ee	agree

8) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.



First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

9) The involvement of civil society organizations in monitoring the value chain's compliance with sustainability standards, could contribute to build a resilient and environmentally friendly food system.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

10) The application of a European Platform on food loss can contribute to reduce waste by providing real-time data on food loss.

First Round Rating: IQR=2.50 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagiee	disagree	nor disagree	agree	Agree	agree

11) A possible transfer of taxes from labour to resource use could make the agri-food sector more attractive, for both workers and entrepreneurs, as it would potentially increase staff wages, while also reduce the total operating cost of enterprises that adopt sustainable methods.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

12) Changes in taxation, at the national and European level, regarding sustainable food are possible with the aim of supporting food security, biodiversity and tackling climate change.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree		disagree	nor disagree	agree	Agree	agree

Threats

1) The uneven and irregular impacts of climate change make it challenging to develop universally applicable measures.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Uncertainty and unpredictability in climate change impacts make it difficult to plan and implement effective food policies and measures.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Urbanization puts a strain on the food system and food security.

First Round Rating: IQR=2.75 - Moderate Consensus





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) The food crisis faced by countries outside the European area (e.g., sub-Saharan Africa) has an impact on European countries.

First Round Rating: IQR=2.50 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
uisagiee		uisagiee	nor disagree	agree		agree

5) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Globalization and international trade can have negative consequences for countries facing economic, social, and/or political difficulties regarding food security and the food system. *First Round Rating: IQR=1.75 - Strong Consensus*

	5 4					
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) will burden and create environmental pressures (increased greenhouse gas emissions and reduced biodiversity) for the areas in which they are based.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) The Emissions Trading System (Kyoto Protocol) threatens food security in less developed countries due to reasons such as a lack of technology, methods, and financial resources.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The Emissions Trading System (Kyoto Protocol) risks not reducing greenhouse gas emissions, as developed countries can trade emissions surplus/deficit, allowing them to pay fines or "buy" pollutants from weaker states.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The high cost of livestock waste management causes significant pressure on the environment and climate change.

First Round Rating: IQR=2.50 - Moderate Consensus





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Sectoral Questions

1) The use of harmful pesticides in European farms poses one of the biggest threats to regional food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) The restoration of nature, as foreseen under such proposals as the EU Nature Restoration Law, will increase the resilience and robustness of the European food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Coherence between food security and nature conservation in Europe can be achieved through further largescale reform of our current approach to agricultural subsidies, where the EU Common Agricultural Policy has an important role to play.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) A cross-sectoral approach to legislation on food systems, covering agricultural, climate, biodiversity, and economic matters through a sustainable food systems framework, will help to combat threats to the food system in Europe.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) In the context of the EU, a continuation of the ambition of the European Green Deal after 2024 will be necessary to ensure that the European food system remains resistant to threats.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) There is a need to increase cultivated areas in order to address situations of malnutrition and hunger.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Food insecurity is not caused by a shortage of food supply, but by unequal distribution. There is more than enough food to enable the world to feed itself – however, food that could be used for





human consumption is fed to animals, used as biofuels, or wasted rather than feeding hungry people. This is an inefficient use of limited land resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

8) Standards for vegetables and fruit aesthetics (size, shape, colour) contribute to food waste.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Consumers should not have to pay a premium for food that is better for their health and the environment. A better application of the 'Polluter Pays'/'Provider Gets' principles on the supply side would have an impact on the consumption/demand side, as it would mean moving towards 'true cost' accounting for food (with prices better reflecting externalities). This would be in line with the Farm to Fork Strategy's stated ambition to make the sustainable choice the most affordable one.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Through organic farming, large amounts of food are wasted (due to diseases, methods of harvesting, storage, transportation, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The food losses resulting from organic farming are partly responsible for the higher prices of these products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) The increased demand for manual labour (increased labour input per unit of product) is a cause of higher prices for organic foods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) As long as the production of sustainable foods (and consequently, the available quantity) remains low, the prices for these products will stay high.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly

14) It is important to upgrade rural areas (infrastructure, accessibility, connectivity, opportunities, innovations) to achieve "Generation renewal" in the primary sector.





1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

15) Improving the position of producers in the value chain is necessary through measures such as providing targeted advice, fostering collaboration among farmers, ensuring effective mechanisms against unfair trading practices, etc.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

Questionnaire for Practitioners

Opportunities

1) Enhancing imports of agri-food products, where domestic production cannot meet the demand, is a good practice to ensure a country's food security and self-sufficiency.

First Round Rating: IQR=2.25 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	-	alsagree	nor disagree	agree	-	agree

2) Cooperation and strengthening the role of cooperatives and producer organizations could contribute to shorten the food supply chain.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Dibugi CC	disagree	nor disagree	agree	Agree	agree

3) The use of local sources of supply, as well as the production and consumption of seasonal and local agri-food products, contributes positively to the sustainability of the food system. *First Round Rating: IQR=2.00 - Strong Consensus*

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Increasing public interest in sustainable and locally sourced food can create further opportunities for small-scale food producers and enterprises.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Decentralization of food production and consumption activities can help to strengthen local economies, reduce transportation costs, and improve food security and access.

First Round Rating: IQR=2.00 - Strong Consensus





1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

6) The use of traditional methods of food production, processing, and storage, in some cases, has positive effects in terms of the sustainability of the food system.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Research and innovation related to the production of sustainable agri-food products could lead to a reduction in the production cost and, therefore, to a drop in market prices.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Discorco	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

8) Reducing food waste could contribute to address food insecurity while having positive effects on climate change and biodiversity due to resource savings.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	_	disagree	nor disagree	agree		agree

9) The rise of e-commerce presents an opportunity to develop distribution networks using short food supply chains.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

10) ICT integration in the primary sector (agriculture, farming, fishing etc.) can help increase sustainable food production.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

11) The development of modern supply systems and geographically distributed warehouses by large retail chains helps to minimize costs along the value chain.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) The development of modern supply systems and geographically distributed warehouses by large retail chains helps to minimize the environmental impacts along the value chain.

First Round Rating: IQR=2.00 - Strong Consensus

		-				
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





13) Public-private partnerships can enhance the sustainability and resilience of the food system by leveraging resources and expertise from different sectors.

First	Round	Ratina	IOR=2 00	- Strong	Consensus
11130	nounu	nuuniy.	101-2.00	Strong	Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

14) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.

First Round Rating: IQR=2.25 - Moderate Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

15) A possible transfer of taxes from labour to resource use could make the agri-food sector more attractive, for both workers and entrepreneurs, as it would potentially increase staff wages, while also reducing the total operating cost of enterprises that adopt sustainable methods.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

16) Taxation can play a role in regulating the supply and demand of sustainable food, but it should be balanced with other policy measures.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

Threats

1) The intensification of the use of enhancers and pesticides to increase crop production has longterm negative effects on food security, whereas in may also result in biodiversity loss and higher greenhouse gas emissions.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Globalization and international trade can have negative consequences for countries facing economic, social, and/or political difficulties regarding food security and the food system.

First Round Rating: IQR=2.25 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree





4) The adoption of sustainable production methods will lead to an increase in the prices of agri-food products.

First Round Rating: IQR=3.00 - Low Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) Rising input prices in the agri-food sector hinder sustainable food production.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

6) Policies to support the production of sustainable agri-food products would have the effect of reducing mass/conventional production and thus increasing food insecurity.

First Round Rating: IQR=3.25 - Low Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

7) Changes in consumer preferences and demands can lead to unsustainable practices and overproduction of food products.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) The creation of business clusters (geographical concentration of interconnected enterprises, suppliers, and other supporting services) will burden and create environmental pressures (increased greenhouse gas emissions and reduced biodiversity) for the areas in which they are based.

First Round Rating: IQR=1.25 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The high cost of livestock waste management causes significant pressure on the environment and climate change.

First Round Rating: IQR=2.00 - Strong Consensus

	5	5				
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) European trade policies are insufficient to increase demand for sustainable products.

First Round Rating: IQR=1.25 - Strong Consensus





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Sectoral Questions

1) The use of harmful pesticides in European farms poses one of the biggest threats to regional food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) The restoration of nature, as foreseen under such proposals as the EU Nature Restoration Law, will increase the resilience and robustness of the European food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

3) Coherence between food security and nature conservation in Europe can be achieved through further largescale reform of our current approach to agricultural subsidies, where the EU Common Agricultural Policy has an important role to play.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) A cross-sectoral approach to legislation on food systems, covering agricultural, climate, biodiversity, and economic matters through a sustainable food systems framework, will help to combat threats to the food system in Europe.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) In the context of the EU, a continuation of the ambition of the European Green Deal after 2024 will be necessary to ensure that the European food system remains resistant to threats.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) There is a need to increase cultivated areas in order to address situations of malnutrition and hunger.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Food insecurity is not caused by a shortage of food supply, but by unequal distribution. There is more than enough food to enable the world to feed itself – however, food that could be used for human consumption is fed to animals, used as biofuels, or wasted rather than feeding hungry people. This is an inefficient use of limited land resources.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Standards for vegetables and fruit aesthetics (size, shape, colour) contribute to food waste.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) Consumers should not have to pay a premium for food that is better for their health and the environment. A better application of the 'Polluter Pays'/'Provider Gets' principles on the supply side would have an impact on the consumption/demand side, as it would mean moving towards 'true cost' accounting for food (with prices better reflecting externalities). This would be in line with the Farm to Fork Strategy's stated ambition to make the sustainable choice the most affordable one.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

10) Through organic farming, large amounts of food are wasted (due to diseases, methods of harvesting, storage, transportation, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The food losses resulting from organic farming are partly responsible for the higher prices of these products.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

12) The increased demand for manual labour (increased labour input per unit of product) is a cause of higher prices for organic foods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree

13) As long as the production of sustainable foods (and consequently, the available quantity) remains low, the prices for these products will stay high.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) It is important to upgrade rural areas (infrastructure, accessibility, connectivity, opportunities, innovations) to achieve "Generation renewal" in the primary sector.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree





15) Improving the position of producers in the value chain is necessary through measures such as providing targeted advice, fostering collaboration among farmers, ensuring effective mechanisms against unfair trading practices, etc.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Questionnaire for Civil Society

Opportunities

1) The exploitation of NATURA areas can contribute to food security.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree	-	agree

2) Crop Wild Relatives (plants closely related to crop plants) can increase levels of food security while also working positively for the environment and biodiversity.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Growing more than one type of crop in the same field (polyculture) could increase crop yields in the long term.

First Round Rating: IQR=1.75 - Strong Consensus

	-	-				
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
aisagiee		alsayiee	nor usagree	agree		agiee

4) Reducing the use of harmful pesticides and crop enhancers could increase crop yields in the long term.

First Round Rati	ng: IQR=2.00 - S	Strong Consensi	15			
1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree		disaaree	nor disagree	aaree	/ igi cc	aaree

5) The separation of agricultural and livestock lands enhances food production while having a positive effect on the natural environment.

First Round Rating: IQR=3.50 - Low Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) The imposition of social and environmental clauses and penalties on enterprises and organizations could lead to an increase in the supply of sustainable food.

First Round Rating: IQR=1.75 - Strong Consensus



agree



1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Increasing public interest in sustainable and locally sourced food can create further opportunities for small-scale food producers and enterprises.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

8) Cooperation and strengthening the role of cooperatives and producer organizations could contribute to shortening the food supply chain.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

9) The use of local sources of supply, as well as the production and consumption of seasonal and local agri-food products contribute positively to the sustainability of the food system.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) The decentralization of sustainable production and consumption activities at the local level would result in the strengthening of society, businesses, and the products of these areas.

First Round	Rating:	IQR=1.50	- Strong	Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The actions of Civil Society Organizations can strengthen the sustainability of the food system and change consumer behaviour in this direction by informing and sensitizing consumers.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) Civil Society Organizations can contribute to the "Social Connection" regarding the responsibility and awareness of everyone involved in the food system, sustainable production and consumption. *First Round Rating: IQR=1.75 - Strong Consensus*

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) Cooperation between consumer, producer, and worker cooperatives could lead to the promotion and empowerment of sustainable nutrition, involving the entire value chain.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree		disagree	nor disagree	agree	, .g. ee	agree





Threats

1) Urbanization puts a strain on the food system and food security.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

2) The food crisis faced by countries outside the European area (e.g., sub-Saharan Africa) has an impact on European countries.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

3) Dietary patterns affect food security, sustainability, climate change and biodiversity. *First Round Rating: IQR=1.75 - Strong Consensus*

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

4) Globalization and international trade create significant pressures and problems for both biodiversity and climate change.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

5) Globalization and international trade can have negative consequences for countries facing economic, social and/or political difficulties regarding food security and the food system. *First Round Ratina: IOR=2.50 - Moderate Consensus*

	5 4					
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) The conventional way of agri-food production has negative consequences for pollinators, degrading biodiversity and production as well.

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

7) The food system and its mechanisms, in their current form, are not able to respond to possible future risks and dangers.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Policies to support the production of sustainable agri-food products would have the effect of reducing mass/conventional production and thus increasing food insecurity.

First Round Rating: IQR=3.75 - Low Consensus





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

9) Most public subsidies regarding agri-food sector concern activities that have a negative impact on the environment and biodiversity.

First Round Rating: IQR=1.75 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

Sectoral Questions

1) The use of harmful pesticides in European farms poses one of the biggest threats to regional food security.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) The restoration of nature, as foreseen under such proposals as the EU Nature Restoration Law, will increase the resilience and robustness of the European food system.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

3) Coherence between food security and nature conservation in Europe can be achieved through further largescale reform of our current approach to agricultural subsidies, where the EU Common Agricultural Policy has an important role to play.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

4) A cross-sectoral approach to legislation on food systems, covering agricultural, climate, biodiversity, and economic matters through a sustainable food systems framework, will help to combat threats to the food system in Europe.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

5) In the context of the EU, a continuation of the ambition of the European Green Deal after 2024 will be necessary to ensure that the European food system remains resistant to threats.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) There is a need to increase cultivated areas in order to address situations of malnutrition and hunger.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Food insecurity is not caused by a shortage of food supply, but by unequal distribution. There is more than enough food to enable the world to feed itself – however, food that could be used for human consumption is fed to animals, used as biofuels, or wasted rather than feeding hungry people. This is an inefficient use of limited land resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Standards for vegetables and fruit aesthetics (size, shape, colour) contribute to food waste.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Consumers should not have to pay a premium for food that is better for their health and the environment. A better application of the 'Polluter Pays'/'Provider Gets' principles on the supply side would have an impact on the consumption/demand side, as it would mean moving towards 'true cost' accounting for food (with prices better reflecting externalities). This would be in line with the Farm to Fork Strategy's stated ambition to make the sustainable choice the most affordable one.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree	Somewhat agree	Agree	Strongly

10) Through organic farming, large amounts of food are wasted (due to diseases, methods of harvesting, storage, transportation, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The food losses resulting from organic farming are partly responsible for the higher prices of these products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

12) The increased demand for manual labour (increased labour input per unit of product) is a cause of higher prices for organic foods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) As long as the production of sustainable foods (and consequently, the available quantity) remains low, the prices for these products will stay high.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) It is important to upgrade rural areas (infrastructure, accessibility, connectivity, opportunities, innovations) to achieve "Generation renewal" in the primary sector.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) Improving the position of producers in the value chain is necessary through measures such as providing targeted advice, fostering collaboration among farmers, ensuring effective mechanisms against unfair trading practices, etc.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Questionnaire for Consumers

Opportunities

1) Decentralization of food production and consumption activities can help to strengthen local economies, reduce transportation costs, and improve food security and access.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) Decreased consumption of livestock products will raise demand for European-grown and proteinbased plants.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

 Education and awareness-raising efforts can increase consumer understanding of the linkages between food choices, environmental, social, and economic sustainability, leading to increased demand for sustainable agri-food products.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) Increasing consumer demand for sustainably produced food can encourage more farmers and producers to adopt these practices, leading to greater sustainability and biodiversity conservation.

First Round Rating: IQR=2.00 - Strong Consensus





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Threats

1) Dietary patterns include the majority of foods whose production damages the environment and biodiversity, and is responsible for a large proportion of greenhouse gases.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

2) The lack of knowledge and information regarding the environmental impact of food leads consumers to make incorrect dietary choices, both for the environment and for their health. *First Round Rating: IQR=2.00 - Strong Consensus*

	5	5				
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

3) The ease of food preparation and consumption often leads to unsustainable food choices. First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

4) The incorrect understanding of the consumption and expiration dates of products leads to the waste of a large amount of food.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) Alterations in the packaging or appearance of products lead to an increase in food waste, even though they are suitable for consumption.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree

6) Consumers rarely consider the origin of the agri-food products they consume.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly

Sectoral Questions

1) The use of harmful pesticides in European farms poses one of the biggest threats to regional food security.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree





2) The restoration of nature, as foreseen under such proposals as the EU Nature Restoration Law, will increase the resilience and robustness of the European food system.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

3) Coherence between food security and nature conservation in Europe can be achieved through further largescale reform of our current approach to agricultural subsidies, where the EU Common Agricultural Policy has an important role to play.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree		agree

4) A cross-sectoral approach to legislation on food systems, covering agricultural, climate, biodiversity, and economic matters through a sustainable food systems framework, will help to combat threats to the food system in Europe.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

5) In the context of the EU, a continuation of the ambition of the European Green Deal after 2024 will be necessary to ensure that the European food system remains resistant to threats.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) There is a need to increase cultivated areas in order to address situations of malnutrition and hunger.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

7) Food insecurity is not caused by a shortage of food supply, but by unequal distribution. There is more than enough food to enable the world to feed itself – however, food that could be used for human consumption is fed to animals, used as biofuels, or wasted rather than feeding hungry people. This is an inefficient use of limited land resources.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

8) Standards for vegetables and fruit aesthetics (size, shape, colour) contribute to food waste.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

9) Consumers should not have to pay a premium for food that is better for their health and the environment. A better application of the 'Polluter Pays'/'Provider Gets' principles on the supply side





would have an impact on the consumption/demand side, as it would mean moving towards 'true cost' accounting for food (with prices better reflecting externalities). This would be in line with the Farm to Fork Strategy's stated ambition to make the sustainable choice the most affordable one.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

10) Through organic farming, large amounts of food are wasted (due to diseases, methods of harvesting, storage, transportation, etc.).

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

11) The food losses resulting from organic farming are partly responsible for the higher prices of these products.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly

12) The increased demand for manual labour (increased labour input per unit of product) is a cause of higher prices for organic foods.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

13) As long as the production of sustainable foods (and consequently, the available quantity) remains low, the prices for these products will stay high.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

14) It is important to upgrade rural areas (infrastructure, accessibility, connectivity, opportunities, innovations) to achieve "Generation renewal" in the primary sector.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

15) Improving the position of producers in the value chain is necessary through measures such as providing targeted advice, fostering collaboration among farmers, ensuring effective mechanisms against unfair trading practices, etc.

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree		disagree	nor disagree	agree		agree

Other Statements

1) When buying agri-food products, I choose those whose packaging is as environmentally friendly and recyclable as possible.





First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

2) When buying agri-food products, I choose those whose packaging seems to best protect the product without concern for its sustainability.

First Round Rating: IQR=4.00 - Low Consensus

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

3) I know the principles of the circular economy and operate accordingly, both in terms of household consumption of materials and food.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

4) I use a shopping list based on my meal plan when grocery shopping.

First Round Rating: IQR=3.00 - Low Consensus

	-					
1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

5) I know the appropriate portion size depending on the food and my needs, and I eat as much as I need without excess food.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

6) I try as much as possible to reduce the loss and waste of food coming from my household. First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

7) I tend to discard food that has spoiled or has damaged packaging, even if it is still consumable. First Round Rating: IQR=4.00 - Low Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

8) In my place of residence, there are appropriate means and structures for the utilization of food that is not suitable for consumption (e.g., household waste and food bins), as well as the corresponding information for citizens.

First Round Rating: IQR=3.50 - Low Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

9) I am conscious of my dietary choices and their impacts.





1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

10) I regularly consume meat and dairy products.

First Round Rating: IQR=3.00 - Low Consensus

1234567Strongly disagreeDisagreeSomewhat disagreeNeither agreeSomewhat por disagreeSomewhat agreeAgreeStrongly agree		-					
Strongly Disagree Somewhat Neither agree Somewhat Agree Strongly	1	2	3	4	5	6	7
disagree nor disagree agree agree agree	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

11) I often eat fast food.

First Round Rating: IQR=2.50 - Moderate Consensus

1	2	3	4	5	6	7
Strongly	Disagroo	Somewhat	Neither agree	Somewhat	Agroo	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

12) I prioritize the consumption of locally produced food and pay attention to the origin of the food I eat.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagiee	disagree	nor disagree	agree		agree

13) I prefer diversity in my diet, and I consume different types of agri-food products.

First Round Rating: IQR=1.50 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

14) I am able to identify sustainable and organic agri-food products and choose them over nonorganic ones, regardless of price.

First Round	Rating:	IQR=2.00 -	Strong	Consensus

1	2	3	4	5	6	7
Strongly	Disagraa	Somewhat	Neither agree	Somewhat	Agree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree

15) In the retail trade, there is great availability, accessibility, and affordability of sustainable and organic food.

First Round Rating: IQR=3.50 - Low Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Dibugice	disagree	nor disagree	agree	/ gree	agree

16) I am willing to pay a premium for organic and sustainably produced food to support environmentally friendly farming practices.

First Round Rating: IQR=2.00 - Strong Consensus

1	2	3	4	5	6	7
Strongly	Disagree	Somewhat	Neither agree	Somewhat	Aaree	Strongly
disagree	Disagree	disagree	nor disagree	agree	Agree	agree







Delphi Study Results

Policy - First-Round Results

	Strengths			Weaknesses	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	6.00	0.75	1	5.00	1.75
2	5.50	3.50	2	6.00	0.75
3	5.00	1.00	3	6.00	0.75
4	6.00	1.00	4	6.00	2.25
5	4.00	2.25	5	6.00	2.50
6	5.00	1.75	6	5.00	3.00
7	5.00	1.75	7	5.50	1.75
8	5.50	1.00	8	6.00	0.00
9	6.00	1.00	9	6.00	2.25
10	4.50	3.50	10	6.00	1.00
11	6.00	1.00	11	4.50	1.75
12	5.00	1.75	12	4.00	0.75
13	6.00	1.75	13	5.00	3.50
			14	6.00	1.75
			15	5.00	1.00
			16	4.00	1.00
			17	5.50	1.75
			18	4.50	2.50
			19	6.00	2.00
			20	6.00	1.00
			21	6.00	0.75
			22	6.00	1.00
			23	4.50	2.00
			24	4.00	1.50
	Opportunities			Threats	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	6.00	1.75	1	7.00	1.00
2	5.50	2.75	2	6.00	0.75
3	6.00	0.75	3	6.00	1.50
4	4.50	2.50	4	7.00	0.75
5	5.00	2.75	5	6.00	1.75
6	6.00	1.00	6	6.00	1.00
7	6.00	1.50	7	5.50	2.75
8	6.00	0.00	8	6.00	2.50
9	7.00	1.50	9	6.50	1.00
10	5.50	1.75	10	6.00	1.00



11

6.00

1.00

The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement $n^\circ\,101084201$

11

4.50

2.00



12	5.00	1.00	12	5.00	1.75
13	6.00	1.00	13	4.00	1.75
14	6.00	1.00	14	5.00	1.75
15	5.00	1.75	15	6.00	2.00
16	6.00	1.75	16	6.00	0.75
17	6.00	2.5	17	6.00	2.50
18	5.00	2.00	18	5.50	1.00
19	6.00	1.75			

Policy - Second-Round Results

	Opportunities			Threats	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	6.00	2.75	1	6.00	1.50
2	4.00	0.75	2	5.00	3.25
3	4.00	2.50	3	6.00	2.00
4	5.00	2.75	4	5.00	1.75
5	6.00	2.50	5	6.50	1.00
6	7.00	1.00	6	5.50	2.75
7	5.50	1.75	7	3.50	3.25
8	5.00	2.75	8	4.00	3.25
9	6.00	1.75	9	5.50	2.50
10	4.00	2.50	10	5.00	3.75
11	5.00	3.50			
12	6.50	2.75			

Practice - First-Round Results

	Strengths			Weaknesses	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	4.00	5.00	1	5.50	1.00
2	6.00	2.25	2	5.00	2.25
3	6.00	2.25	3	6.00	1.25
4	5.00	2.00	4	6.00	1.25
5	6.00	1.25	5	6.00	2.00
6	6.00	2.00	6	5.50	2.00
7	5.00	2.25	7	4.50	3.00
8	6.00	1.00	8	6.00	1.50
9	6.00	2.00	9	6.00	1.00
10	6.00	1.25	10	6.00	2.00
			11	5.00	1.25
			12	5.00	3.00
			13	6.00	2.00



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement $n^\circ101084201$



	14	6.00	2.00
	15	6.00	1.25
	16	5.00	2.25
	17	6.00	0.00
	18	6.00	1.25

	Opportunities			Threats	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	5.50	2.25	1	7.00	1.25
2	6.50	1.00	2	7.00	1.00
3	6.00	1.00	3	7.00	0.00
4	6.00	1.25	4	6.00	1.00
5	6.00	1.00	5	6.00	1.25
6	6.00	2.00	6	5.00	2.25
7	6.00	1.25	7	5.00	3.00
8	7.00	1.00	8	5.00	1.25
9	6.00	2.00	9	5.00	3.25
10	5.50	1.25	10	6.00	2.00
11	6.00	1.25	11	5.00	1.25
12	7.00	1.25	12	6.00	1.00
13	6.00	0.25	13	5.50	2.00
14	6.00	2.00	14	5.00	2.00
15	6.00	1.25	15	5.50	1.25
16	5.50	1.50			
17	5.50	2.00			
18	5.50	1.00			
19	6.00	2.00			
20	5.00	2.25			
21	5.00	1.25			
22	7.00	2.00			

Practice - Second-Round Results

	Opportunities		Threats				
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR		
1	6.00	3.25	1	6.50	1.00		
2	6.50	1.00	2	6.00	1.00		
3	7.00	0.00	3	5.00	0.75		
4	7.00	0.75	4	4.00	1.75		
5	6.50	1.00	5	5.50	1.00		
6	5.50	1.00	6	3.00	3.50		
7	6.00	1.00	7	6.00	1.75		
8	7.00	1.00	8	5.00	4.25		
9	6.50	1.00	9	6.00	1.00		
10	6.00	1.00	10	6.00	1.00		
11	6.00	0.00	11	5.50	2.75		





12	6.00	0.00		
13	6.00	0.75		
14	5.00	2.50		
15	6.00	1.00		
16	7.00	1.00		

Civil Society - First-Round Results

	Strengths		Weaknesses			
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR	
1	3.50	3.75	1	5.50	2.50	
2	6.50	1.00	2	6.00	1.00	
3	5.00	1.75	3	7.00	1.00	
4	5.00	1.75	4	3.00	3.75	
5	6.00	1.00	5	6.00	0.00	
6	6.00	1.00	6	6.00	2.00	
7	6.00	1.75	7	6.00	1.00	
8	6.00	1.00	8	6.00	1.75	
9	5.50	2.00	9	6.00	1.75	
10	6.00	2.50	10	6.00	1.75	
11	5.00	2.00	11	5.00	2.75	
12	5.00	1.00	12	5.00	2.75	
13	5.00	1.75	13	6.50	1.00	
14	6.00	0.00	14	6.50	2.50	
			15	6.00	1.50	
			16	6.00	1.00	
			17	6.00	1.00	
	Opportunities			Threats		
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR	
1	4.50	2.00	1	7.00	1.00	
2	6.00	1.75	2	7.00	1.00	
3	6.00	1.75	3	6.00	1.00	
4	4.00	1.00	4	6.00	1.50	
5	5.00	2.00	5	6.00	2.00	
6	4.00	3.50	6	6.50	1.00	
7	6.00	1.00	7	6.00	1.75	
8	5.00	1.75	8	6.00	1.00	
9	5.50	1.00	9	6.00	1.00	
10	5.50	1.00	10	6.00	2.00	
11	6.00	1.00	11	6.00	2.50	



12

13

14

6.00

6.00

6.00

1.00

1.50

0.75

The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement $n^\circ101084201$

12

13

14

6.50

6.00

6.50

1.00

1.75

1.00



15	6.00	1.75	15	6.00	2.00
16	6.00	1.75	16	3.50	3.75
17	6.00	1.50	17	5.00	1.75
18	5.00	1.00	18	6.00	1.00
19	6.00	1.75			
20	6.00	1.75			
21	6.00	1.75			
22	6.00	0.75			

Civil Society - Second-Round Results

	Opportunities		Threats				
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR		
1	7.00	1.00	1	6.00	1.00		
2	6.00	2.00	2	6.00	2.00		
3	6.00	1.00	3	6.00	1.00		
4	6.00	4.00	4	6.00	1.00		
5	5.00	5.00	5	6.00	1.00		
6	4.00	4.00	6	6.00	4.00		
7	7.00	2.00	7	5.50	2.00		
8	6.00	2.00	8	3.00	3.00		
9	7.00	1.00	9	3.00	2.00		
10	6.00	1.00					
11	6.00	2.00					
12	6.00	1.00					
13	7.00	1.00					

Consumers - First-Round Results

	Strengths			Weaknesses	
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR
1	5.00	3.00	1	6.00	1.00
2	6.00	1.00	2	6.00	1.00
3	4.00	3.00	3	6.00	2.00
4	6.00	2.00	4	6.00	1.00
5	5.00	1.00	5	6.00	1.00
6	6.00	1.50	6	5.00	2.00
7	6.00	1.00	7	6.00	2.00
8	6.00	1.00	8	6.00	3.00
9	6.00	2.00	9	6.00	3.00
10	5.00	2.00			
11	6.00	1.00			
12	6.00	2.00			



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement $n^\circ 101084201$



	Opportunities		Threats				
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR		
1	6.00	1.00	1	6.00	2.00		
2	6.00	1.00	2	6.00	1.00		
3	6.00	1.00	3	6.00	1.00		
4	6.00	1.00	4	6.00	2.00		
5	6.00	1.00	5	6.00	1.00		
6	6.00	1.50	6	6.00	1.00		
7	6.00	1.00	7	5.00	1.00		
8	6.00	1.00	8	6.00	1.00		
9	7.00	1.00	9	6.00	1.50		
10	5.00	1.00	10	5.00	1.00		
11	6.00	2.00	11	6.00	2.00		
12	6.00	2.00	12	6.00	1.00		
13	6.00	2.00	13	5.00	2.00		
14	6.00	1.00	14	5.00	2.00		

Other Statements								
Statements	Agreement - Median	Consensus - IQR						
1	5.00	2.00						
2	4.00	4.00						
3	5.00	1.50						
4	5.00	3.00						
5	5.00	1.00						
6	5.00	2.00						
7	6.00	2.00						
8	3.00	4.00						
9	4.00	3.50						
10	6.00	1.50						
11	5.00	3.00						
12	2.00	2.50						
13	6.00	2.00						
14	6.00	1.00						
15	6.00	1.50						
16	5.00	2.00						
17	6.00	1.00						
18	4.00	3.50						
19	5.00	2.00						
20	6.00	1.00						

Consumers - Second-Round Results

Opportunities			Threats			
Statements	Agreement - Median	Consensus - IQR	Statements	Agreement - Median	Consensus - IQR	
1	6.00	1.00	1	5.50	2.25	



The ECO-READY project has received funding from the European Union's Horizon Europe Research and Innovation Programme under grant agreement $n^\circ101084201$



2	5.00	2.00	2	6.00	2.00
3	6.00	2.00	3	7.00	2.00
4	6.00	1.00	4	6.00	1.25
			5	6.00	1.00
			6	5 00	3 00

Other Statements								
Statements	Agreement - Median	Consensus - IQR						
1	5.00	2.00						
2	5.00	3.00						
3	5.00	2.00						
4	4.50	4.25						
5	4.50	2.00						
6	6.00	2.00						
7	5.00	4.00						
8	3.50	3.00						
9	6.00	2.25						
10	6.00	2.25						
11	4.00	3.00						
12	6.00	2.25						
13	5.00	2.00						
14	4.00	1.00						
15	3.50	2.25						
16	4.50	2.00						

Second-Round - Sectoral Questions

	То	Total Policy		licy	Practice		Civil Society		Consumers	
Statements	Agreement	Consensus	Agreement	Consensus	Agreement	Consensus	Agreement	Consensus	Agreement	Consensus
	Median	IQR	Median	IQR	Median	IQR	Median	IQR	Median	IQR
1	6.00	1.00	5.50	3.25	6.00	1.75	5.00	4.00	6.00	1.25
2	6.00	1.00	6.00	1.50	6.00	1.00	6.00	5.00	6.00	1.00
3	6.00	2.00	6.00	1.75	6.00	0.75	6.00	1.00	6.00	2.00
4	6.00	1.00	6.00	1.00	6.50	1.00	7.00	2.00	6.00	1.25
5	6.00	2.00	6.00	1.75	6.00	1.00	4.00	5.00	6.00	1.00
6	5.00	3.50	4.50	2.75	6.00	2.25	5.00	5.00	5.50	4.00
7	6.00	2.00	6.50	1.00	6.00	1.75	6.00	4.00	6.00	2.25
8	6.00	2.00	6.50	1.00	6.00	0.75	6.00	1.00	6.00	2.00
9	6.00	1.00	6.50	2.50	5.50	1.00	6.00	3.00	6.00	1.00
10	5.00	3.00	4.50	3.75	5.00	3.50	5.00	3.00	5.00	2.00
11	5.00	3.00	4.00	3.75	5.50	1.75	5.00	4.00	5.00	3.00
12	5.00	2.00	5.50	2.75	5.50	2.00	3.00	4.00	5.00	1.25
13	6.00	1.00	5.00	2.50	6.00	2.00	6.00	1.00	6.00	1.00
14	7.00	1.00	6.50	1.75	7.00	0.75	7.00	1.00	7.00	1.00
15	6.00	2.00	7.00	0.75	7.00	1.00	7.00	1.00	5.50	2.00







Survey Questionnaire

Disclaimer and privacy statement

This research study is conducted in the context of the ECO-READY project. The goal of this survey is to get a better understanding of the needs, interests and triggers that affect sustainable consumption. This understanding will help us contribute to the development of consumer-driven resilience strategies. Once aggregated and analysed, the findings of this survey will be reported in a public deliverable that will be uploaded to the project's website.

Completing the survey will take you approximately 12 to 14 minutes. Thank you in advance for helping us gather your relevant knowledge and opinions!

All the collected answers will be combined and anonymised before any results are published. All data will be treated according to GDPR, guaranteeing your privacy.

□ I have read the ECO-READY Data Protection Policy and I agree to the terms and conditions.

Definition of Sustainable Consumption

Sustainable consumption refers to the practice of making choices in our daily lives that minimize negative environmental and social impacts while maintaining or improving our quality of life (UNEP, 2023). It encompasses various aspects, including the products we purchase, the way we use them, and the broader systems that support our consumption patterns. Sustainable consumption involves considering the environmental, economic, and social consequences of our actions to ensure the well-being of both current and future generations.

In the context of this survey, sustainable consumption pertains to the choices individuals make regarding the food they eat and the products they purchase and use, with a focus on reducing harm to the environment, and conserving resources.

What is your Prolific unique ID?

.....

Sustainable consumption

Sustainable consumption

- 1. On a scale 1-5, how familiar are you with the concept of sustainable consumption?
 - o Highly familiar
 - Very familiar
 - Moderately familiar
 - Less familiar
 - Not familiar at all




2. Please indicate your level of agreement with the following statements:

	Strongly	Disagree	Neither agree nor	Agree	Strongly Agree
	Disagree		disagree		
I would pay more for a green					
product that is making efforts					
to be environmentally					
sustainable.					

3. Please indicate the extra percentage that you would be willing to pay for sustainable products:

	0%	1 - 5%	6 – 10%	11 – 15%	16 – 20%	More than 20%
I would be willing to pay this						
extra percentage on the						
sustainable products to						
support the						
organization's/product						
efforts to be						
environmentally.						

4. Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I will purchase					
sustainable products					
for personal use.					
I am willing to purchase					
sustainable products					
for personal use.					
I will make an effort to					
purchase sustainable					
products.					

5. Please indicate your level of agreement with the following statements:

	Strongly Disgaree	Disagree	Neither agree nor disgaree	Agree	Strongly Agree
I have been purchasing					
sustainable products on a					
regular basis.					
I have sustainable					
purchasing behavior for my					
daily needs products.					
I have had sustainable					
purchasing behavior over					
the past six months.					

Sustainable food consumption

- 6. On a scale 1-5, how familiar are you with the concept of sustainable food consumption?
 - $\circ \quad \text{Highly familiar} \\$
 - \circ Very familiar
 - Moderately familiar





- Less familiar
- Not familiar at all
- 7. What challenges do you face when trying to purchase sustainable food products?
 - Lack of availability
 - Higher cost compared to non-sustainable products
 - \circ $\;$ Lack of information on the sustainability of products
 - $\circ \quad \text{Limited product choices}$
 - Other (please specify): _____
- 8. Reflect on your own diet and your experience purchasing food in recent weeks. Think about the food you plan to buy over the next few weeks. Do you expect to make any changes? Please tell us which of the following statements apply to you and your food.

Nutrition

	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I buy mostly whole					
grains, nuts, and					
beans.					
I avoid most highly processed foods					
that have empty					
I buy a diversity of			\Box		
foods with many					
different fats,					
etc.					

Environment

	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I avoid buying too much food and creating food waste.					
I buy foods with lower land, water, and greenhouse gas footprints.					
I avoid highly packaged foods and single-use plastics.					

Social





	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I buy food that is produced humanely for both animals and workers.					
I avoid food businesses that are unfair or exploitative in their practices.					
I buy food that fits my cultural or customary diet.					

Economic

	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I buy food that is					
affordable and fits					
my budget.					
I buy food from					
stores and					
restaurants where					
I have lots of					
options.					
I buy food					
whenever and					
wherever I want it.					

Security

	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I buy enough food					
to last so that I					
don't go hungry.					
I avoid low quality					
foods that are not					
desirable or					
nourishing.					
I buy food that is					
safe and free of					
dangerous					





chemicals	or		
bacteria.			

Taste

	No, and I don't expect to in the next 6 months	No, but I want to start in the next 6 months	I want to and I plan to start in the next month	Yes, but I only started in the last 6 months	Yes, and I have for more than 6 months
I buy tasty food that is pleasing and satisfying to me.					
I buy visually appealing food that looks good to me.					
I buy food that makes me feel good, physically and mentally.					

Interests

9. On a scale 1-5, how important are the following factors for you to purchase sustainable food products?

	Not important at all	Less	Moderately	Very	Highly
		important	important	important	important
Environmental					
impact					
Health benefits					
Quality					
Ethical reasons					
Cost					
Brand reputation					
Eco-labels					
Availability					

10. On a scale 1-5, please indicate your agreement with the following statements:

I believe that	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
sustainable food is healthier.					
sustainable food is cleaner.					
sustainable food can improve my dietary balance.					

11. On a scale 1-5, please indicate your agreement with the following statements:

			_	
Strongly disagree	Disagree	Neither agree nor	Agree	Strongly agree
		disagree		





I often search for information about sustainable			
1000.			
I like to talk to people about			
sustainable food.			
I am interested in			
sustainable food.			
I am interested in			
purchasing sustainable food.			

12. On a scale 1-5, please indicate your agreement with the following statements:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am willing to accept that sustainable food costs more.					
I am willing to re- budget if I want to purchase sustainable food.					

13. What specific environmental issues related to food security are you most concerned about and would like to know more about? (Select up to three)

- Climate change
- Deforestation
- Environmental pollution (e.g. air, water, soil)
- Biodiversity loss
- o Food waste
- Resource depletion (e.g. water, minerals)
- Other, please specify: _____

Needs & Triggers

Self-efficacy

14. Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neither agree nor	Agree	Strongly Agree
			disagree		
I will be able to					
achieve most of					
the goals that I					
set for myself.					
When facing					
difficult tasks, I					
am certain that I					





will accomplish			
them.			
In general, I think			
that I can obtain			
outcomes that			
are important to			
me.			
I believe I can			
succeed at most			
any endeavor to			
which I set my			
mind.			

15. Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I will be able to successfully overcome many challenges.					
I am confident that I can perform effectively on many different tasks.					
Compared to other people, I can do most tasks very well.					
Even when things are tough, I can perform quite well.					

Food security

16. For the following statements, please indicate whether the statement was *often true*, *sometimes true*, or *never true* for you/your household <u>in the last 12 months</u> (since XX month).

	Never true	Sometimes true	Often true	I don't know
The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more.				
I/we couldn't afford to eat balanced meals.				





17. a. In the last 12 months, did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

Yes

- □ No (Skip 8.b.)
- □ I don't know (Skip 8.b.)

8.b. If your answer in Q8 was "Yes", how often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- □ Almost every month
- □ Some months, but not every month
- □ Only 1 or 2 months
- □ I don't know
- 18. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?
 - Yes
 - □ No
 - □ I don't know
- 19. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?
 - Yes
 - □ No
 - □ I don't know

Sense of control

20. Please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I can do just about anything that I really set my mind to.					
Whatever happens in the future mostly depends on me.					
When I really want to do something, I usually find a way to succeed at it.					
Whether or not I am able to get what I want is in my own hands.					





Time orientation

21. On a scale 1-5, please rate the following statements.

	Extremely	Uncharacteristic	Neutral	Characteristic	Extremely
	uncharacteristic				characteristic
I consider how things might be in the future and try to influence those things with my day-to-day behaviour					
Often I engage in a particular behaviour in order to achieve outcomes that may not result for many years					
I only act to satisfy immediate concerns, figuring the future will take care of itself					
My behaviour is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions					

22. On a scale 1-5, please rate the following statements.

	Extremely	Uncharacteristic	Neutral	Characteristic	Extremely
	uncharacteristic				characteristic
My convenience is a big					
factor in the decisions I					
make or the actions I					
take					
I am willing to sacrifice					
my immediate					
happiness or well-being					
in order to achieve					
future outcomes					
I think it is important to					
take warnings about					
negative outcomes					
seriously even if the					
negative outcome will					
not occur for many					
years					





I think it is more			
important to perform a			
behaviour with			
important distant			
consequences than a			
behaviour with less-			
important immediate			
consequences			

23. On a scale 1-5, please rate the following statements.

	Extremely	Uncharacteristic	Neutral	Characteristic	Extremely
	uncharacteristic				characteristic
I generally ignore					
warnings about					
possible future					
problems because I					
think the problems will					
be resolved before they					
reach crisis level					
I think that sacrificing					
now is usually					
unnecessary since					
future outcomes can be					
dealt with at a later					
time					
I only act to satisfy					
immediate concerns,					
figuring that I will take					
care of future problems					
that may occur at a later					
date					
Since my day-to-day					
work has specific					
outcomes, it is more					
important to me than					
behaviour that has					
distant outcomes.					

Closeness to nature

24. Please answer each of these questions in terms of the way you generally feel. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

	Strongly	Disagree	Neutral	Agree	Strongly
	Disugree				Ayree
I often feel a sense of oneness with the					
natural world around me.					
I think of the natural world as a					
community to which I belong.					





I recognize and appreciate the			
intelligence of other living organisms.			
I often feel disconnected from nature.			
When I think of my life, I imagine myself			
to be part of a larger cyclical process of			
living.			

25. Please answer each of these questions in terms of the way you generally feel. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I often feel a kinship with animals and					
plants.					
I feel as though I belong to the Earth as					
equally as it belongs to me.					
I have a deep understanding of how my					
actions affect the natural world.					
I often feel part of the web of life.					

26. Please answer each of these questions in terms of the way you generally feel. There are no right or wrong answers. Using the following scale, in the space provided next to each question simply state as honestly and candidly as you can what you are presently experiencing.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Like a tree can be part of a forest, I feel embedded within the broader natural world.					
When I think of my place on Earth, I consider myself to be a top member of a hierarchy that exists in nature.					
I often feel like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees.					
My personal welfare is independent of the welfare of the natural world.					

Stress

27. In this question you are asked about your feelings and thoughts during the last month. In each case, you are asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

Never	Almost	Sometimes	Fairly	Very often
	never		often	





In the last month, how often have you been upset because of something that happened unexpectedly?			
In the last month, how often have you felt that you were unable to control the important things in your life?			
In the last month, how often have you felt nervous and "stressed"?			
In the last month, how often have you dealt successfully with irritating life hassles?			

28. In this question you are asked about your feelings and thoughts during the last month. In each case, you are asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

	Never	Almost	Sometimes	Fairly	Very often
		never		often	
In the last month, how often have you felt					
that you were effectively coping with					
important changes that were occurring in					
your life?					
In the last month, how often have you felt					
confident about your ability to handle					
your personal problems?					
In the last month, how often have you felt					
that things were going your way?					

29. In this question you are asked about your feelings and thoughts during the last month. In each case, you are asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

	Never	Almost	Sometimes	Fairly	Very often
		never		often	
In the last month, how often have you					
been able to control irritations in your					
life?					
In the last month, how often have you felt					
that you were on top of things?					
In the last month, how often have you					
found yourself thinking about things that					
you have to accomplish?					
In the last month, how often have you					
been able to control the way you spend					
your time?					





In the last month, how often have you felt			
difficulties were piling up so high that you			
could not overcome them?			

Socio-demographic Questions

Which country are you from?

[Drop-down list of EU countries + 'other: please specify']

Which country are you currently living in?

[Drop-down list of EU countries + 'other: please specify']

Which city/town/villages are you currently living in?

Please specify: _____

Gender: How do you identify?

- o Female
- o Male
- o Non-binary
- o I would rather not say

Please indicate your age:

- o **18-24**
- o **25-34**
- o **35-44**
- o **45-54**
- o **55-64**
- \circ 65 and over

Please indicate your area of residence:

- o Urban
- \circ Semi-urban
- o Rural

What is the highest level of education you have completed?

- Primary school diploma
- Secondary school diploma
- o Bachelor's degree or equivalent
- Master's degree
- Doctorate's degree (PhD)
- Other type of diploma (e.g., professional programmes)





o I would rather not disclose it

What is your net annual household income (in Euros)?

- €5.000 or less
- 。 €5.001 €15.000
- o €15.001 €25.000
- 。 €25.001 40.000
- 。 €40.001 €55.000
- 。 €55.001 €70.000
- 。 €70.001 €85.000
- 。 €85.001 €100.000
- €100.001 or more
- o I would rather not disclose it

How large is your household?

	1	2	3	4	>4	None
Number of earners						
Number of financially-dependent children						
and adults						





Annex E

Path analysis results

Dependent variable	Predictor	Estimate	р
	Sustainable behaviour	0.23199	<.001
	Age	0.00329	<.001
	Stress	-0.04549	0.02
	Closeness to nature	0.08927	<.001
	Gender = Male	0.05220	0.004
Sustainable food	Time orientation	-0.05181	0.006
consumption	Food security	-0.04155	<.001
	Self efficacy	0.08483	<.001
	Cost	0.04467	<.001
	Ethical reasons	0.03709	<.001
	Quality	0.09597	<.001
	Health benefits	0.05864	<.001

Mediator	Predictor	Estimate	р
	Environmental impact	0.24613	<.001
	Ethical reasons	0.05119	<.001
	Cost	-0.10213	<.001
	Brand reputation	-0.02298	<.001
Sustainable behaviour	Gender = Male	0.09804	<.001
Sustainable benaviour	Gender = Female	0.18958	.007
	Eco-labels	0.09816	<.001
	Time orientation	-0.13698	<.001
	Closeness to nature	0.14480	<.001
	Age	-0.00292	0.004
	Income	0.01575	0.001

Indirect effect	Estimate	р
Income \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.004	0.002
Age \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	-0.001	0.004





Closeness nature \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.034	<.001
Gender = Male \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.023	<.001
Gender = Female \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.044	0.008
Time orientation \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	-0.032	<.001
Eco-labels \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.023	<.001
Brand reputation \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	-0.005	0.015
Cost \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	-0.024	<.001
Ethical reasons \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.012	<.001
Environmental impact \Rightarrow Sustainable behaviour \Rightarrow Sustainable food consumption	0.057	<.001

Predictor	Direct effect	Indirect effect	Total effect
Sustainable behaviour	0,232	-	0,232
Age	0,003	-0,001	0,002
Stress	-0,045	-	-0,045
Closeness to nature	0,089	0,034	0,123
Gender = Male	0,052	0,023	0,075
Time orientation	-0,052	-0,032	-0,084
Food security	-0,042	-	-0,042
Self efficacy	0,085	-	0,085
Cost	0,045	-0,024	0,021
Ethical reasons	0,037	0,012	0,049
Quality	0,096	-	0,096
Health benefits	0,059	-	0,059
Income	-	0,004	0,004
Gender = Female	-	0,044	0,044
Environmental impact	-	0,057	0,057
Eco-labels	-	0,023	0,023









ECO-LABELS

GENDER (female)

0.098

0.189

160





Correlation matrix analysis

Correlation Matrix																		
	Self_efficacy	Sense_control	Time_orientation	Closeness_nature	Stress	Age	Environmental	Health	Quality	Ethical	Cost	Brand	Eco-	Availability	Food_security	Gender	Education	Income
Self_efficacy	1,00						Impact	Dellellts		Teasons		reputation	labels					
Sense_control	0,62	1,00																
Time_orientation	-0,25	-0,12	1,00															
Closeness_nature	0,23	0,17	-0,29	1,00														
Stress	-0,56	-0,38	0,21	-0,12	1,00													
Age	0,04	-0,09	-0,09	0,10	-0,18	1,00												
Environmental impact	0,11	0,04	-0,22	0,41	-0,02	0,08	1,00											
Health benefits	0,29	0,21	-0,17	0,22	-0,18	0,08	0,25	1,00										
Quality	0,27	0,21	-0,11	0,16	-0,14	0,07	0,15	0,50	1,00									
Ethical reasons	0,07	0,00	-0,20	0,37	0,03	0,05	0,58	0,16	0,15	1,00								
Cost	-0,08	-0,03	0,05	-0,03	0,13	-0,07	-0,11	0,03	0,07	-0,04	1,00							
Brand reputation	0,09	0,08	0,03	0,08	-0,03	0,03	0,10	0,09	0,16	0,17	0,04	1,00						
Eco-labels	0,15	0,08	-0,16	0,31	-0,06	0,07	0,53	0,23	0,17	0,45	-0,08	0,38	1,00					
Availability	0,07	0,06	-0,04	0,08	-0,01	0,03	0,07	0,12	0,21	0,08	0,25	0,17	0,17	1,00				
Food_security	-0,11	-0,11	0,16	0,01	0,25	-0,05	0,01	-0,06	-0,12	0,04	0,07	0,03	0,03	0,01	1,00			
Gender	-0,08	-0,03	-0,09	0,17	0,16	-0,05	0,16	0,00	-0,03	0,25	0,10	0,02	0,16	0,12	0,02	1,00		
Education	0,20	0,10	-0,14	0,06	-0,16	0,15	0,11	0,12	0,07	0,07	-0,05	0,01	0,08	-0,01	-0,10	0,06	1,00	
Income	0,17	0,11	-0,11	0,00	-0,20	0,17	0,01	0,04	0,04	-0,02	-0,12	0,02	0,00	0,00	-0,19	-0,11	0,21	1,00

							Corre	lation Matri	c									
	Self_efficacy	Sense_control	Time_orientation	Closeness_nature	Stress	Age	Environmental	Health	Quality	Ethical	Cost	Brand	Eco-	Availability	Food_security	Gender	Education	Income
Self_efficacy	_						impact	Denents		Teasons		reputation	labels					
Sense_control	0.620***	_																
Time_orientation	-0.247***	-0.117***	-															
Closeness_nature	0.229***	0.165***	-0.290***	-														
Stress	-0.556***	-0.380***	0.208***	-0.119***	-													
Age	0.041*	-0.090***	-0.088***	0.100***	-0.177***	-												
Environmental impact	0.110***	0.044*	-0.223***	0.413***	-0.021	0.082***	-											
Health benefits	0.286***	0.206***	-0.173***	0.217***	-0.175***	0.081***	0.247***	-										
Quality	0.267***	0.205***	-0.108***	0.156***	-0.138***	0.074***	0.146***	0.496***	-									
Ethical reasons	0.067***	0.002	-0.197***	0.366***	0.031	0.049*	0.580***	0.160***	0.146***	-								
Cost	-0.079***	-0.029	0.049*	-0.029	0.126***	- 0.074***	-0.113***	0.034	0.070***	-0.036	-							
Brand reputation	0.094***	0.082***	0.032	0.081***	-0.025	0.028	0.101***	0.089***	0.162***	0.172***	0.036	-						
Eco-labels	0.149***	0.082***	-0.163***	0.312***	-0.056**	0.069***	0.525***	0.231***	0.171***	0.450***	-0.082***	0.377***	-					
Availability	0.069***	0.055**	-0.035	0.084***	-0.009	0.034	0.067***	0.121***	0.210***	0.078***	0.247***	0.167***	0.172***	-				
Food_security	-0.106***	-0.110***	0.159***	0.013	0.246***	-0.049**	0.006	-0.057**	-0.119***	0.043*	0.074***	0.028	0.032	0.012	_			
Gender	-0.077***	-0.031	-0.092***	0.170***	0.157***	-0.051**	0.156***	-0.004	-0.028	0.251***	0.101***	0.022	0.155***	0.122***	0.021	-		
Education	0.197***	0.101***	-0.140***	0.061**	-0.159***	0.152***	0.112***	0.118***	0.067***	0.072***	-0.045*	0.009	0.081***	-0.005	-0.097***	0.058**	_	
Income	0.166***	0.105***	-0.111***	-0.001	-0.197***	0.173***	0.011	0.035	0.040*	-0.016	-0.120***	0.017	0.002	0.003	-0.191***	-0.111***	0.213***	-
							Note. * p < .05,	** p < .01, *	** p < .001									





Dependent variable	Predictor	Estimate	р
	Sustainable behaviour	0.23199	<.001
	Age	0.00329	<.001
	Stress	-0.04549	0.02
	Closeness to nature	0.08927	<.001
	Gender = Male	0.05220	0.004
Sustainable food	Time orientation	-0.05181	0.006
consumption	Food security	-0.04155	<.001
	Self efficacy	0.08483	<.001
	Cost	0.04467	<.001
	Ethical reasons	0.03709	<.001
	Quality	0.09597	<.001
	Health benefits	0.05864	<.001

Mediator	Predictor	Estimate	р
	Environmental impact	0.24613	<.001
	Ethical reasons	0.05119	<.001
	Cost	-0.10213	<.001
	Brand reputation	-0.02298	<.001
Sustainable behaviour	Gender = Male	0.09804	<.001
Sustainable benaviour	Gender = Female	0.18958	.007
	Eco-labels	0.09816	<.001
	Time orientation	-0.13698	<.001
	Closeness to nature	0.14480	<.001
	Age	-0.00292	0.004
	Income	0.01575	0.001







Fuzzy-set Qualitative Comparative Analysis (fsQCA)

Causal	Femal	Male	Non-					
Causai	е	gende	binary	Education	Age	Income	Residence	
patri	gender	r	gender					
1	•				\otimes	•	•	
2	•			•	•		•	
3	•			•	\otimes	\otimes	\otimes	
4		•		\otimes	\otimes	•	•	
5		•		•	•	•	•	
		9	Solution co	overage: 0.31	8			
		Sc	olution cor	nsistency: 0.9	81			
Note: Black circles (•) indicate the presence of a condition, and circles with "x"								
(\otimes) indicate its absence. Blank spaces indicates "Don't care" condition								

