

D 1.5 Report

# Context Scenarios for Food Systems

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# Glossary

Abbreviation	Full form
CDI	Change-Driven Initiative
K&I	Knowledge and Innovation
AI	Artificial Intelligence

## Executive Summary

The European Horizon Europe project FOSTER, 'Fostering food system transformation by integrating heterogeneous perspectives in knowledge and innovation within the ERA', was set up to 'build a foundation from which a Knowledge and Innovation (K&I) governance structure for Europe's food system can emerge' (FOSTER, 2023). In FOSTER, we work on how to change, improve, and broaden the scientific knowledge base and the associated knowledge and innovation system (in and for the food system).

This report contains six context scenarios describing the situation in the European Union in global context. The scenarios are thus environments of food systems in 2040 co-creatively developed with Change-Driven-Initiatives (CDIs) and other partners in the project. The scenarios will be displayed in the digital FOSTER Knowledge Platform (via website <https://fosterfoodsystem.eu/>).

In the FOSTER project, they will be used to frame or test the intended future activities of the CDIs, especially in the following Summer School. The scenarios are working material that can be used to frame the visions, ideas and possibilities of the CDIs. The CDIs can further work within these different future worlds or test systematically, how robust their futures pathways and transformative statements are in the face of or within these scenarios. How this will be done is conceptualised in the further work of WP 2 and WP 3. The scenarios will also be used as a frame for the selection of a topic for a 'new CDI' in WP 1.

### 1. **Blue Scenario:** Trade alliances and soft regulation foster sustainability

This scenario depicts a situation where geopolitical, regulatory and social issues significantly limit the otherwise unchanged growth paradigm. Trade alliances foster sustainable food production and trade within their regions. On the other hand, these blocs create barriers to global trade and technology sharing, while an increase in prices brings back the thrifty mindset of reduce, reuse, and repair. Most companies promoting health and sustainability play a key role in making societies adapt to a new way of living. The EU's regulations and subsidies support their sustainable practices.

### 2. **Red Scenario:** Shocks unite Europe in a joint post-growth future

Climate Change hit Europe hard during the second half of the 2020s with all the symptoms that could be imagined and many people having to leave their homes worldwide. This could not be 'recovered' soon. Access to resources was very limited and the rush was great. People were forced to make radical changes in order to provide themselves with essential goods like water, food and housing even though the EU population was already shrinking at that time. A post-growth economy started to develop in

the wake of the mid-2020s military crises, and now, in 2040, EU regulation supports remaining within planetary boundaries. Consumers and companies support this – they do not want to starve.

### 3. Black Scenario: No collective responsibility

In 2040, no collective responsibility is taken for societal issues, global commons, nutrition of people or other issues. Individual responsibility for others is very limited. The most important criteria for purchasing food are price and availability, with quality taking a backseat. Health or nutrition safety are not the priorities - people eat what is available and affordable. We live in an erratic and permanently changing world - without any trust in science or ourselves. Europe as a plaything for global (economic) interests tries to defend itself in a world of heatwaves, cold and hot spots, drought or floods and erratic weather phenomena.

### 4. **Yellow Scenario:** Towards an EU of autocrats, nationalism and economic turmoil

Autocrats around the globe had a run – also in Europe – and democracy is on the decline. More and more right- and left-wing parties pledge for radical and drastic solutions. In search of orientation and alternatives people vote for them. This was a move away from the neo-liberal assumption that everything can be purchased on the world market towards policies stimulating production for the national market, with protectionist measures in place (tariffs, import quotas, quality standards) restricting international trade of bulk and foodstuffs, benefitting the domestic economy.

This went hand in hand with a 'back to nature' classic conservatism, idealising 'simple life' including small plot vegetable production, eye to eye with environmental concerns and concerns over access to food. In 2040, we see some of the results: Some countries left the EU and the remaining Member States are not very united. 'My country first' is the major slogan. This does not provide stability in economic terms and led to food insecurity all over the globe. The recession that started in 2024 was never resolved. Recession comes back from time to time and there is no stability in the prospects.

## **5. Green Scenario: Slowly moving towards a sustainable EU in a fragmented world**

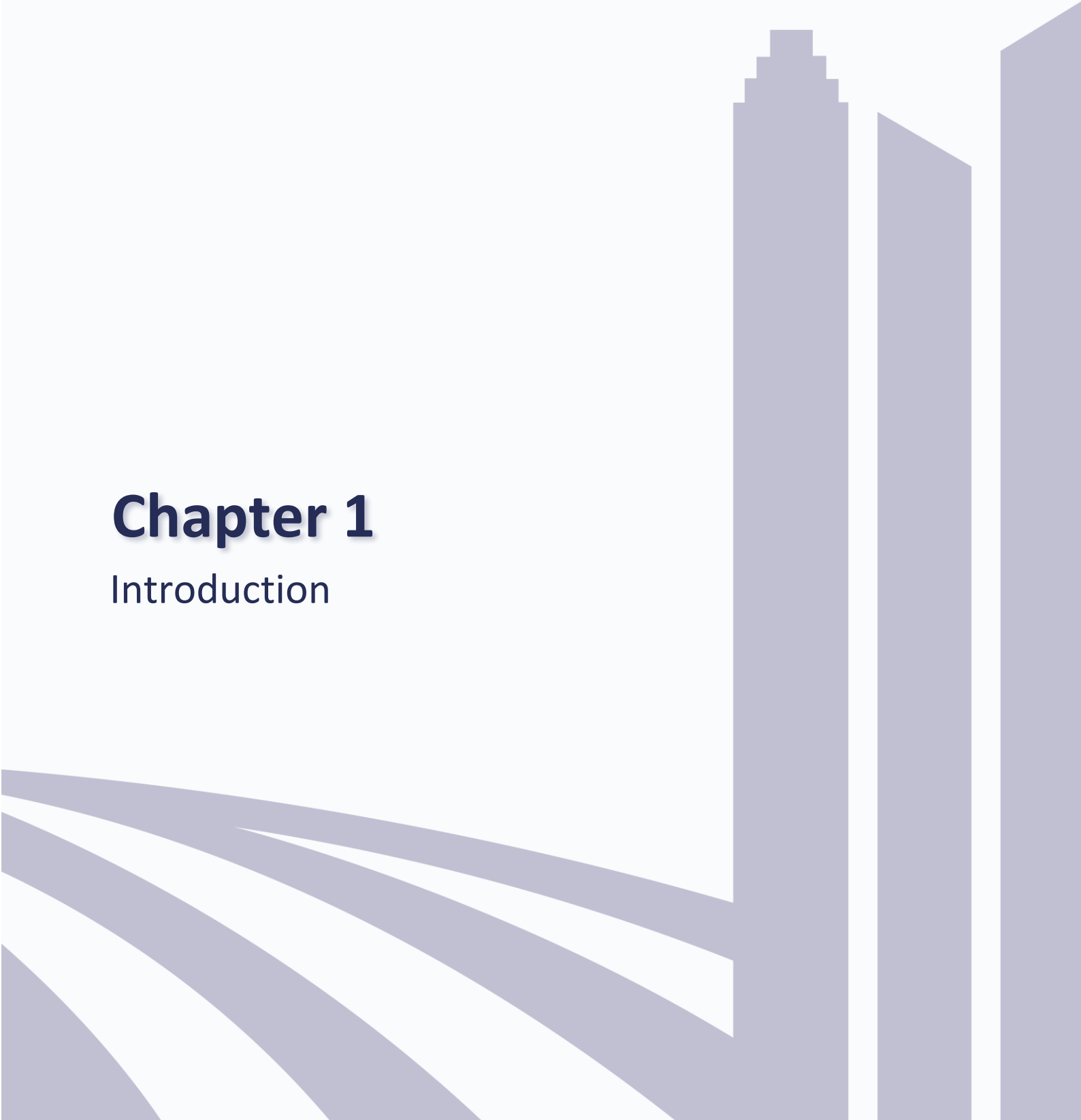
In 2040, Green Growth is key, but it still takes much effort to follow the way to sustainability and healthy nutrition for all. Companies take responsibility for the health and nutrition of citizens heading towards a sustainable EU. Old Europe is still not on a stable green path and growth is not guaranteed, but the EU strives for a just transformation and good quality nutrition for all in a very fragmented world. Many steps forward and many steps back have been gone since the end of the 2020s, and there were many detours on this way – but the EU learns from mistakes of the past and the European Commission is setting rules and standards as a frame. We need much more time for changes.

## **6. Violet Scenario: Green local and regional ecosystems managing nature to fulfil major services**

Green Growth is key in 2040. Nutrition for all is safe – green local and regional ecosystems managing nature make it possible to fulfil major services (providing resources for food production, keeping landscapes intact etc.) despite climate change, multi-crises and a fragmentation of the globe. Not everything is available all the time, and consumers understand the role of seasonal agriculture. The EU set the green frame with standards, and companies supported the development since the end of the 2020s. We managed to have enough, good and tasty food.

# Chapter 1

## Introduction



## Chapter 1 - Introduction

### 1. FOSTER Narrative and Background

FOSTER is a European Horizon Europe project called 'Fostering food system transformation by integrating heterogeneous perspectives in knowledge and innovation within the ERA'. The FOSTER project was set up to 'build a foundation from which a Knowledge and Innovation (K&I) governance structure for Europe's food system can emerge" (FOSTER, 2023). In FOSTER, we work on how to change, improve, and broaden the scientific knowledge base and the associated knowledge and innovation system (in and for the food system). The food system concept framework in FOSTER is based on the system visualisation from the Foresight4Food Initiative<sup>1</sup>, but extended with added drivers, e.g. Resources and Energy, Societal patterns or Mobility (see Figure 1 - The FOSTER concept frame (Source: FOSTER adapted from Foresight4Food) below).

In FOSTER, we expect that **by changing how knowledge is produced** (by scientists, by people engaged across the food sector, etc.) **and used** (amongst others, by policy-makers, scientists, farmers and other food system actors), **this will serve as a lever to change how our food is produced, processed, distributed, consumed, and its waste is discarded or re-used** towards a more sustainable and just system. For this reason, the following report provides the baseline of future topics across the agri-food system with a focus on the perspective of six change-driven initiatives (CDIs). The CDIs are collaborators and partners of the FOSTER project and present diverse contributions to knowledge production in the food system from a very practical side.

This report presents scenarios that frame future food systems – we call them 'context scenarios' or 'environmental scenarios', as they describe the worlds in which food systems may evolve. The time horizon for the scenarios is 2040 as it should be long-term and shortly after the projects of Horizon Europe will end.

There are many ways of conducting scenario work, and there is a large number of publications about scenarios available, for example Börjeson et al. 2006; Bradfield et al. 2005; Godet 2000; Odegard et al. 2014; van der Heijden 1996; Durance et al. 2010; Bishop et al. 2007; Kosow et al. 2008; Spaniol et al. 2019, 2023, just to mention a few very different overviews or approaches. Our morphological approach goes back to Zwicky 1969. We modified the method to be fast and to be able to work in a co-creative way. This rather new way of building scenarios is called 'Scenario Sprint' (see Daimer et al. 2021). In our case, it included four workshops during 2023 and 24 with CDIs to discuss different issues, factors and assumptions about futures, and the building of the full scenarios (see chapter Methodological Approach).

<sup>1</sup> <https://foresight4food.net/food-systems-model/>

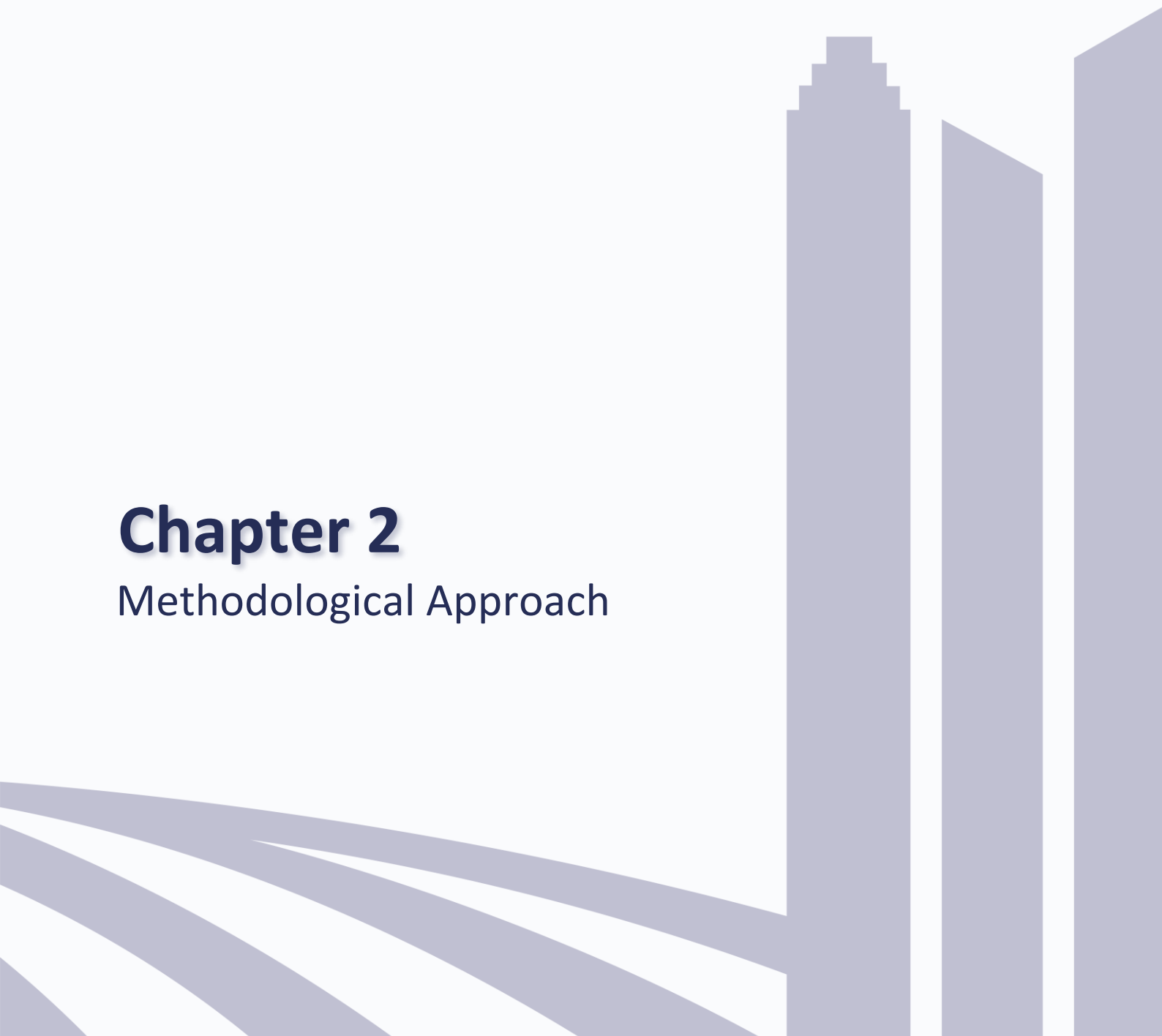
Please be aware that the scenarios we co-created are possible futures. They are not predictions but a combination of assumptions about the future. They are not positive or negative – that depends on our perception or on whether we are winners or losers in this specific world. The future we will experience in 2040 may look differently – according to what we do now or what we avoid. The scenarios are thus working material for the whole consortium, the CDIs and interested individuals. The scenarios describe the context (environment) of food systems as images of 2040.

Activities such as scenario building are conducted for learning about different futures and stretching our brains to accept different opinions and perspectives. Futures thinking can include many different perspectives. As we do not know the future for now – there is no right or wrong. We are working within uncertainties.

**We thank all members of the consortium and especially the CDIs for their contributions and vivid discussions, in this participative and co-creative process.** In the following chapters, the methodology of building these specific context scenarios is explained and the six scenarios are presented.

# Chapter 2

## Methodological Approach

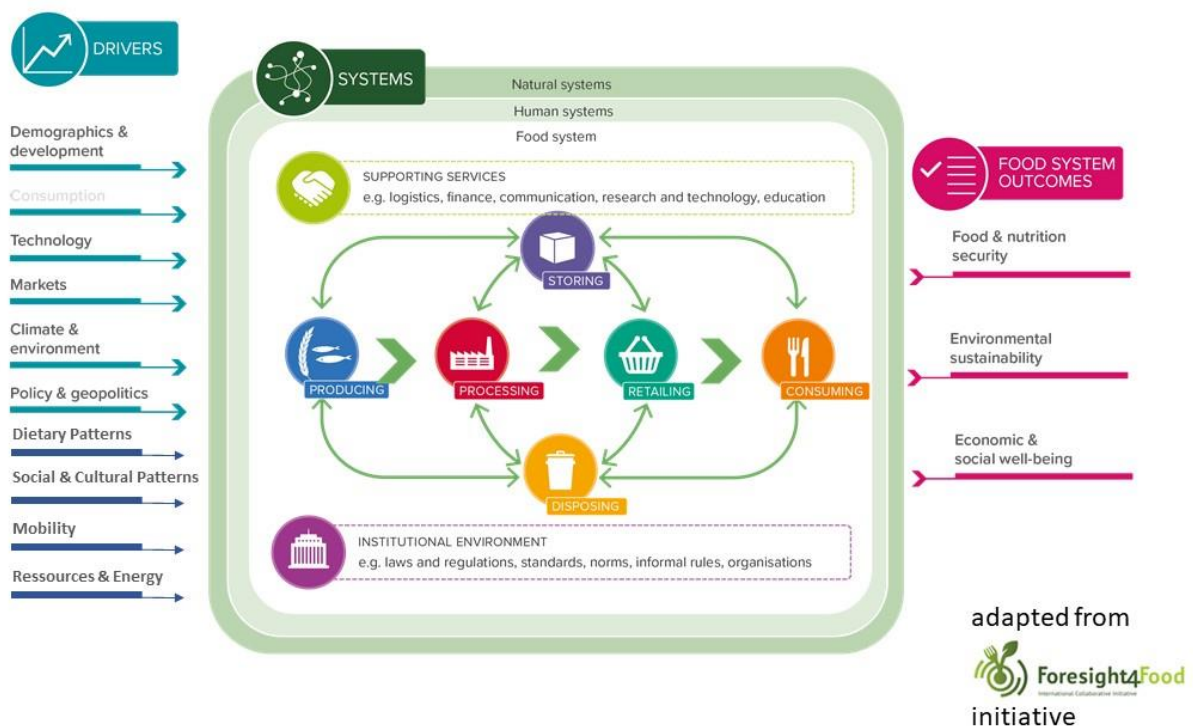


## Chapter 2 – Methodological Approach

### 2. Methodological Approach

#### 2.1 Making use of Horizon Scanning Results

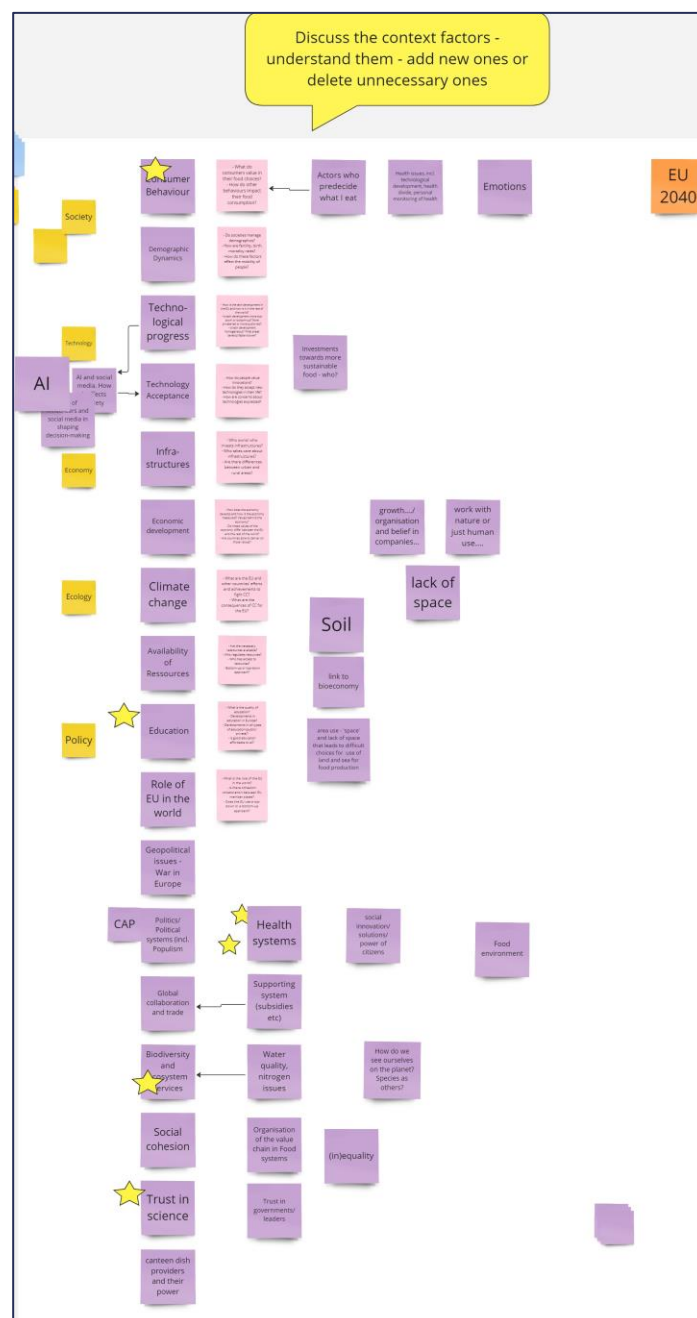
Morphological scenarios make use of assumptions about the future. In a first step, factors are defined that drive the system and have an influence on the system. These factors are the skeleton of the scenarios. They are formulated neutrally and selected according to their influence on the food system. We made use of the previous work done for FOSTER's Horizon Scanning (see Deliverable 1.2) and started to group the drivers already identified (see the left-hand side of the concept frame in Figure 1) and framed during the Horizon Scanning and used them as factors for the scenario. These mostly consisted of the factors listed under *Drivers* on the left-hand side of the FOSTER concept frame shown in Figure 1 but also *Supporting Services* and the *Human systems* contain framing factors that we used (not shown in the image), and we added new ones that could be relevant for the scenario building.



**Figure 1 - The FOSTER concept frame**  
(Source: FOSTER adapted from Foresight4Food)

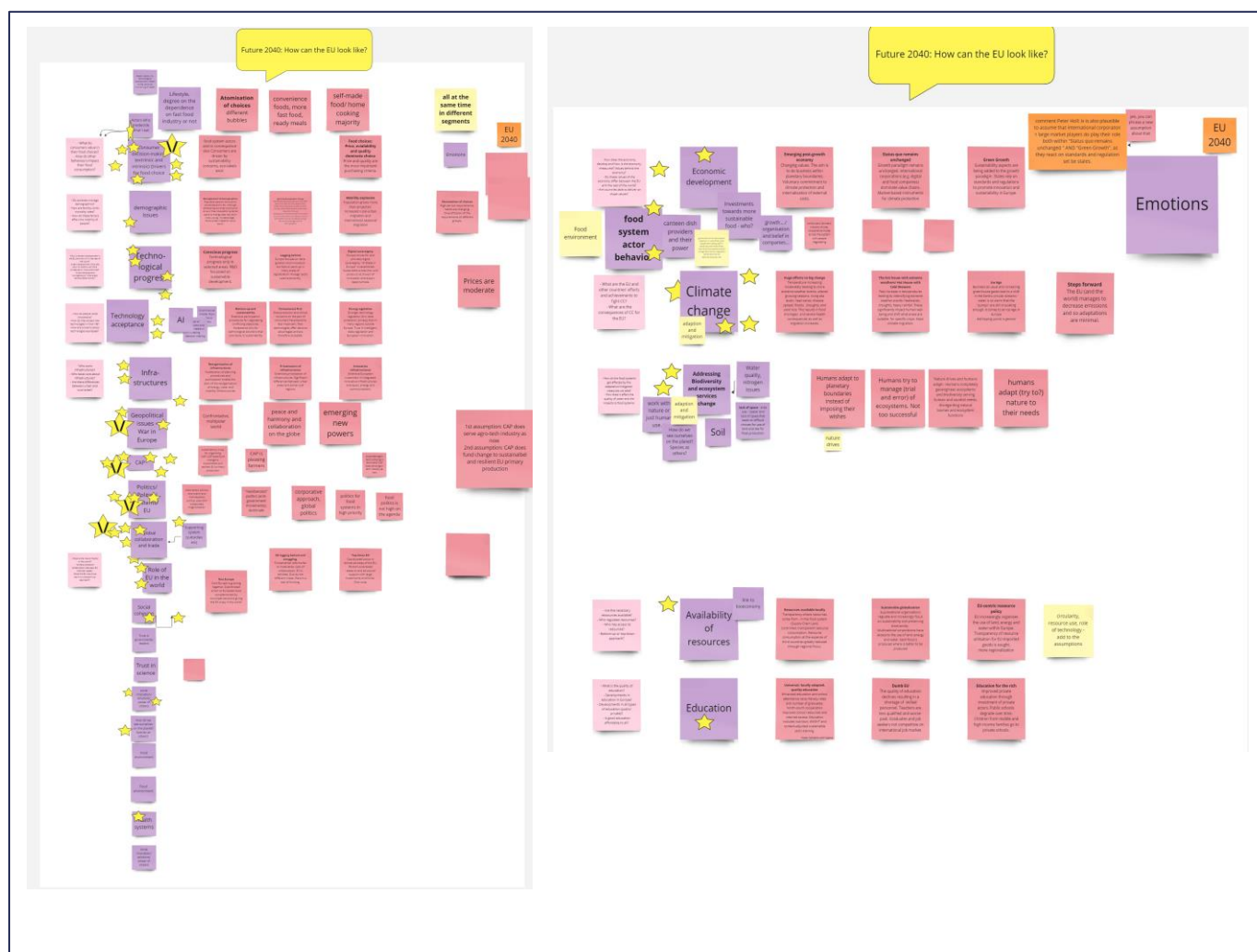
## 2.2 Scenario Sprint with four workshops

The scenario process started with a first workshop and a crash course in scenario sprint work. With CDIs and consortium members, we discussed and clarified the **factors**, and enhanced the list. We worked virtually using MS Teams as a meeting platform and a Miro board that was prepared with the necessary data. The participants discussed in three groups which factors might be relevant and which are the most uncertain. A voting, done by distributing stars on the board, gave a first impression about the most relevant factors. Criteria for giving stars were the relevance of the factor for the food system and the uncertainty of its future development.



**Figure 2 - Excerpt of the board with factors in workshop 1**  
(Source: Fraunhofer ISI)

For the second workshop, we prepared a document with a preliminary **list of factors** (based on the votes given in the previous workshop), and some **different assumptions** about their developments or paths into the future up to 2040. This means that, for each factor, we formulated three to five very divergent assumptions based on the Horizon Scanning results (see Deliverable 1.2). This document was sent to the participants for preparation. During the workshop, participants were asked to discuss, explain, adapt and find new alternatives to the assumptions. We divided the participants into two groups of nine people to be able to discuss. Figure 3 – Excerpts of the board of workshop 2, two groups (Source: Fraunhofer ISI) shows the results of the group work on the board.



**Figure 3 - Excerpts of the board of workshop 2, two groups**  
(Source: Fraunhofer ISI)

After this workshop, the organising team at Fraunhofer ISI consolidated the results (see Figure 4) and conducted an impact analysis to find out which of the factors are the most influential and most uncertain ones – taking into account the judgements during the workshop. For this, they filled in an impact matrix by judging

the impact of each factor on the others by giving scores from 2 (high impact) to 0 (no impact or no relation). The result (sum) allowed to select the 10 most impactful factors out of which the two most impactful ones were 'economic development' and the 'power actors of the food system'.

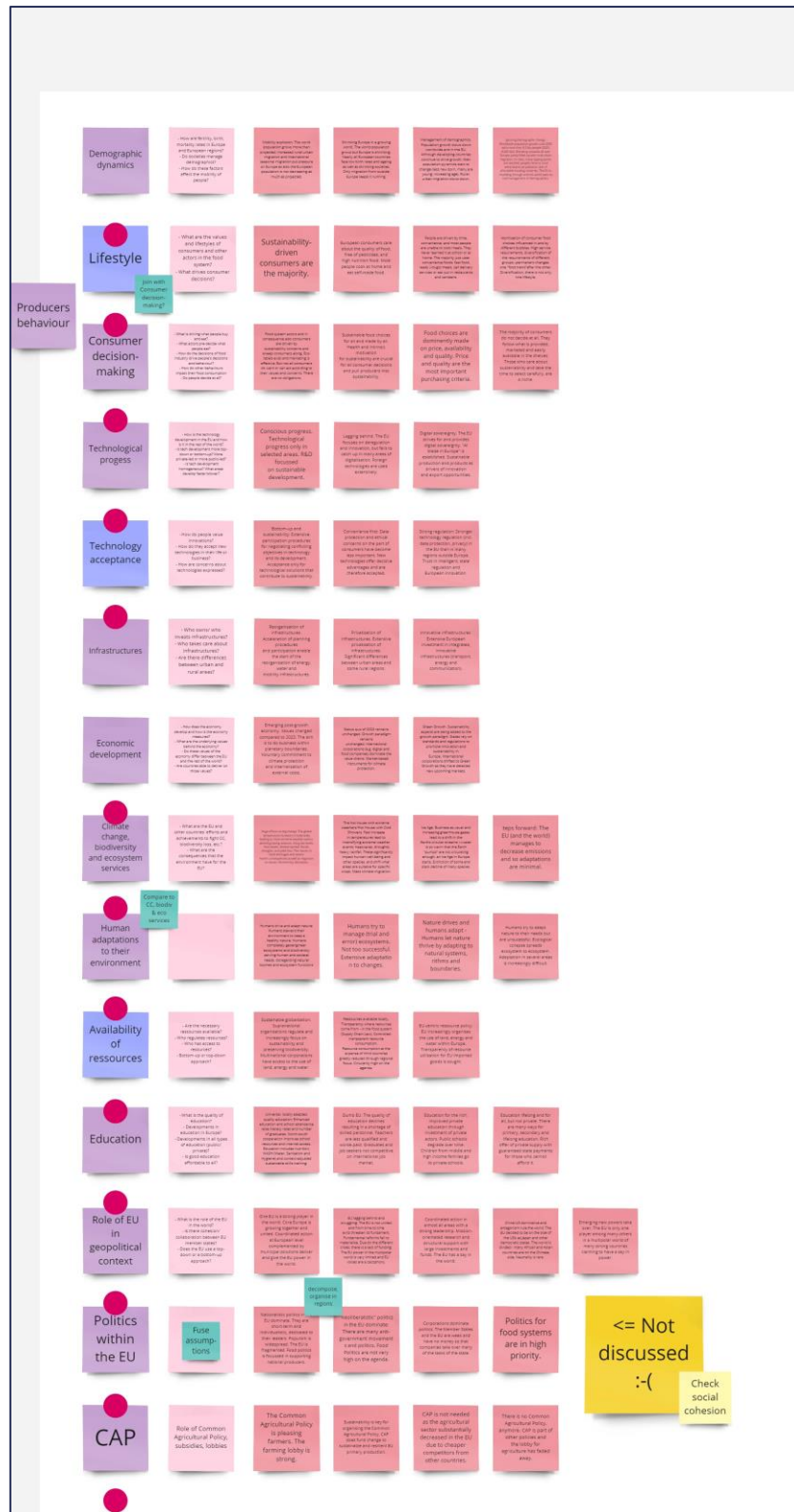
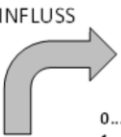


Figure 4 - Board of workshop 2, end results for the impact matrix  
(Source: Fraunhofer ISI)

**Einflussmatrix**

**EINFLUSS**  
  
**VON**      **auf**

0....kein Einfluss  
 1....Einfluss  
 2....starker Einfluss

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Demographic dynamics	Lifestyle	Power structures	Innovation in general	Technology acceptance	Infrastructures	Trust in institutions and individualism and cohesion	Degree of global collaboration and trade (+ neocolonialism)	Economic development	Climate change, biodiversity and ecosystem services	Role of EU in geopolitical context	CAP + food policy	Availability of resources including land and food	Food poverty (quantity and quality)	Role of R&I in food system transformation	
1	Demographic dynamics	2	2	1	1	2	0	0	2	0	2	0	0	1	0	13
2	Lifestyle	2	1	2	2	1	1	1	2	2	1	0	2	0	2	19
3	Power structures	1	1	2	0	2	2	1	2	2	2	2	1	2	1	21
4	Innovation in general	0	2	1	1	2	1	1	2	1	1	1	1	1	2	17
5	Technology acceptance	0	1	1	2	1	1	1	1	1	0	0	0	0	2	11
6	Infrastructures	0	1	0	2	1	0	2	2	1	1	0	1	1	0	12
7	Trust in institutions and individualism and cohesion	1	2	0	1	2	0	2	1	1	1	0	1	1	0	13
8	Degree of global collaboration and trade (+ neocolonialism)	1	1	2	2	0	1	1	2	1	2	1	2	1	1	18
9	Economic development	2	2	2	2	1	2	2	2	2	2	2	2	2	1	26
10	Climate change, biodiversity and ecosystem services	1	1	0	1	1	0	0	1	1	1	1	2	2	2	14
11	Role of EU in geopolitical context	0	0	2	1	0	0	1	2	2	1	0	1	1	0	11
12	CAP + food policy	0	0	0	1	0	0	0	1	2	0	2	2	1	1	10
13	Availability of resources including land and food	1	1	1	2	1	1	2	2	1	1	1	2	2	2	19
14	Food poverty (quantity and quality)	2	2	0	0	0	0	2	0	1	0	1	0	1	1	10
15	Role of R&I in food system transformation	0	1	0	2	0	1	0	1	1	0	1	1	1	1	9

**Figure 5 - Impact Matrix.** The numbers represent the influence that the corresponding row-factor has on the corresponding column-factor. Last column shows the sum for each row.

(Source: Fraunhofer ISI, the template was in German language)

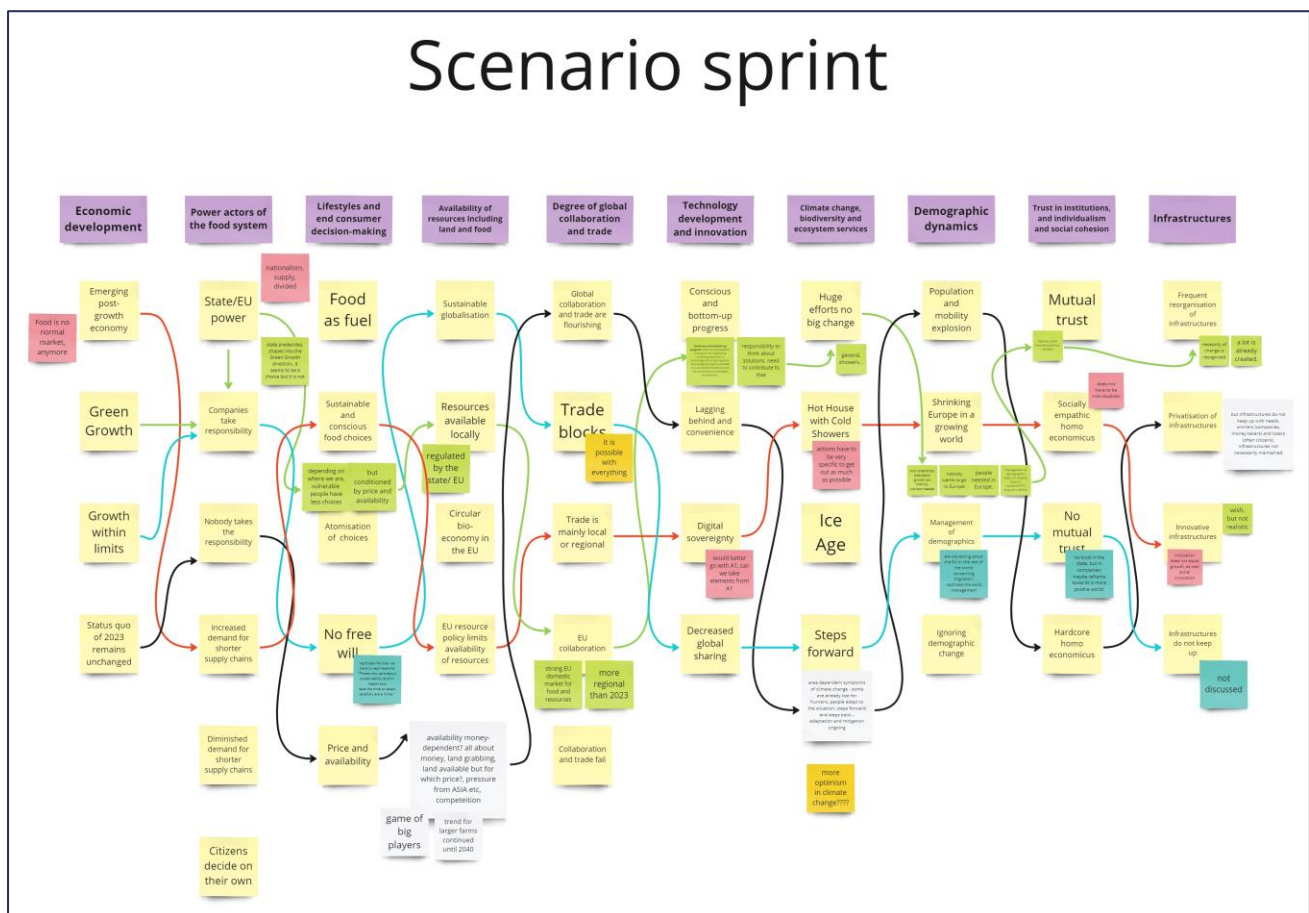
The third workshop was dedicated to the Scenario Sprint work. Here the task was to work on the board (see Figure 6) and combine assumptions about the factors from workshop 2 that fit together. The assumptions were ordered following the results from the impact matrix in Figure 5: the first column listed the assumptions of the most impactful factor, the second column those of the second most impactful factor, and so on. We worked in two groups – each group had the task to combine assumptions to form two paths. These paths were defined by combining one assumption of the first factor, the most impactful one, with the assumption of the second factor that fits with it. Then, this was combined with the assumption of the third factor that better fits the combination, and so on. Group 1 followed the blue and red path<sup>2</sup> and Group 2 the green and black path (see colour arrows in Figure 6). The caveat is that each assumption should only be used in one path. However, it was allowed to make small changes to an assumption in case it fits two or more paths. At the end of the session, there was a discussion in the plenary to negotiate any changes with the aim of making the paths more coherent.

As predefined by the number of assumptions for the first two factors, we thus ended up with four scenarios. These were formulated as raw scenarios, which were then discussed and formulated in the last workshop. The

<sup>2</sup> The colours have no specific meaning, they are used for orientation and displaying the scenario path. The groups worked on the same board so that they could see what assumptions the other groups already used,

second task in the fourth workshop was to find a title for the scenario and make the scenarios plausible and consistent. The colour code used helped with orientation.

As a reminder: All scenarios are plausible and possible. Scenarios are not good or bad or best case and worst case. It depends on the perspective whether they are positive or negative, so they are all somehow mixed. Scenarios are working material for further steps, for example, to identify a desirable path into the future or to place one's own work into this world to start strategic decision preparation.



**Figure 6 - Board of workshop 3, scenario sprint**  
(Source: Fraunhofer ISI)

In this context, it was discussed that one perspective was missing, one that is different from the 'green scenario', which was one with many greening attempts and efforts to fight climate change and its symptoms. The 'green scenario' turned out to be an up-and-down scenario, which means with steps forward and steps back<sup>3</sup>. The participants wanted an additional scenario with really successful climate change fighting – therefore, in the end, we formulated a fifth scenario as a variation of the green one (colour code violet).

A second debate came up when discussing power structures. It could be assumed that the power holders in society and politics might change until 2040, an assumption according to trends and findings in the Horizon Scanning (Deliverable 1.2, part geopolitics): participants asked for a scenario with more autocratic leadership<sup>4</sup>. As there was not much time left to formulate this one, a scenario from another project (Cuhls et al. 2022) was partly used as a baseline, adapted, shortened, and reframed to relate more to food systems (the 'yellow scenario').

The following chapters describe the results of this process: six scenarios.

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<sup>3</sup> One reason for this was that the assumption of effectively fighting climate change was already taken by another group, but it was decided to stick to the rules of the method and go on with a different assumption.

<sup>4</sup> With autocratic, we really mean un-democratic, authoritative, often person-oriented leadership in government. This is often close to dictatorship.

# Chapter 3

Trade alliances and soft regulation  
foster sustainability



## Chapter 3 – Scenario 1

### 3. Blue Scenario: Trade alliances and soft regulation foster sustainability

This scenario depicts a situation where geopolitical, regulatory and social issues significantly limit the otherwise unchanged growth paradigm. Trade alliances foster sustainable food production and trade within their regions. On the other hand, these blocs create barriers to global trade and technology sharing, while an increase in prices brings back the thrifty mindset of reduce, reuse, and repair. Most companies promoting health and sustainability play a key role in making societies adapt to a new way of living. The EU's regulations and subsidies support their sustainable practices.



Figure 7 - Trade Alliances

(Source: Kerstin Cuhls created with DALL·E, 12-4-2024)

In this scenario, the **growth paradigm remains mostly unchanged** since the beginning of the 2020s, but some stricter limits are set to narrow down large international companies, mostly by regulation. These are for the most part strong climate and environmental protection regulations integrated into economic policies set by states and the EU. But they are not the only constraints on growth.

In 2040, some **trade blocs** dominate – e.g. one around the USA/EU/Japan and one around China and its allies (e.g. African countries) – which limits the size of markets for the EU. The former big players are still strong, but partly due to the decreased competition, many medium-sized companies are major players in the European economy as well, and small companies can find their niches with relative ease, especially in food production.

This situation reverts significantly the global race to the bottom in companies' conditions, for example regarding salaries of the employees.

This reduced pressure to lower wages significantly and increased the price and the quality of goods. Today, in 2040, higher prices have led towards lower consumption, increased emphasis on reuse, and an overall appreciation for the value of maintenance, which creates a feedback loop that further limits growth. Community sharing platforms, maintenance workshops and second-hand markets popularise, as are new lease concepts as a business model in the circular economy (e.g. lease a jeans), and play a crucial role in easing the financial burden that, otherwise, the less affluent in society would not be able to overcome.

The **production and exchange of goods and services is mainly taking place within the trading blocs**. However, there exist multilateral trade agreements that operate independently from the blocs, enabling exports outside the bloc (for example food is mostly produced where it is better ecologically to be produced). Only very few agreements develop and evolve over time, which does not provide companies with the regulatory stability needed to confidently expand into new markets. Markets are generally small now. Imports to the EU are highly regulated and many countries cannot meet the requirements, resulting in very limited trade with the EU.

This **bloc situation hinders the global sharing of technologies**, including those relevant to the food industry. Technology exports are strictly regulated and many of the new forms of breeding, the new machinery adapted to local situations or the bio-pesticising are neither exported nor is the knowledge shared. Each block has an own standard for digital technologies, and does not communicate with others fully. The first example for this was the digital Great Wall. The EU of 2040 has very strict technology regulation (including data protection and privacy) compared to many other regions. This decreases sharing even further.

Infrastructures for transport or the internet in Europe are one of the bottlenecks for economic development and food transport. Reorganisation and development of infrastructures do not keep up with the damages caused by rapid climate change symptoms of the late 2020s. Repairing railroads after heavy rains and thunderstorms or keeping the morbid streets intact are not only costly but need people who are not available in the EU.

Since the 2030s, **population growth has slowed remarkably worldwide and notably in the EU**. Although the developing countries from 2020 continue to grow economically, their population pyramids started to change (few new-borns, many are young and can expect a long life). Rural-urban migration in the EU slows down. Most people prefer to stay or migrate within their home regions.

The **EU renewed regulations and subsidies** manage to set the frame for companies to take responsibility for the health of end consumers and the environment. Following the lead of EU regulations and the push of a fraction of citizens and NGOs that stay up for people and environmental needs, most companies promote sustainability and health. For example, they take care that their production is sustainable in itself, that they

use good but fewer resources, and they do not only produce healthy products while still making money. They have to accept less profit than before. The times of exaggerated profits are over. Stakeholders demand this profit-for-all attitude, which means that all have their share and not only a few profit heavily. If there is profit, this is re-invested in better production or innovation. Relatedly, policy and institutions improve long-term support for companies when they undergo a transition toward a more leasing-oriented or rental-based model, as opposed to traditional direct selling. Such support is needed to guarantee that these services will be provided (customers must not be left stranded by a broken company) also in the future.

**Companies promoting health and sustainability**, in turn, helped to sweep the rest of society along, as sustainability suddenly became much easier and convenient. In 2040, eco-labels still exist, and sustainability and health-oriented marketing is effective. Most consumers follow what is provided, marketed and easily available on the shelves. Proclaiming 'trends' in marketing is still a big thing. Those people who can afford to select carefully, are a niche – but it is largely unnecessary to follow a healthy or sustainable lifestyle. People trust in companies more than in states or the EU. They trust companies and their way of handling sustainability.

The **responsibility** to think about solutions and the need to contribute to them is high in society's priorities. Therefore, technological progress and research happen mostly in selected areas that contribute to sustainable development. Research in other areas is not supported, anymore. In addition, extensive participation procedures for negotiating conflicting objectives in technology and its development are heavily used.

The EU and the world manage to decrease emissions. New seeds (GMO and non-GMO) and breeding technologies are available, and promoting breeding progress with a view to changing conditions (e.g. drought, salinisation, etc.). Multinational corporations have regulated access to the use of land, energy and water.

# Chapter 4

Shocks unite Europe in a joint  
post-growth future



## Chapter 4 – Scenario 2

### 4. **Red Scenario:** Shocks unite Europe in a joint post-growth future

Climate Change hit Europe hard during the second half of the 2020s with all the symptoms that could be imagined and many people having to leave their homes worldwide. This could not be 'recovered' soon. Access to resources was very limited and the rush was great. People were forced to make radical changes in order to provide themselves with essential goods like water, food and housing even though the EU population was already shrinking at that time. A post-growth economy started to develop in the wake of the mid-2020s military crises, and now, in 2040, EU regulation supports remaining within planetary boundaries. Consumers and companies support this – they do not want to starve.



**Figure 8 - Local fair where inventors and entrepreneurs showcase sustainable solutions and visitors can attend a variety of workshops**  
(Source: Miquel Banchs-Piqué created with Stable Diffusion)

During the 2020s and 2030s, there has been a **fast increase in temperatures** that led to extreme weather events like heatwaves, droughts and heavy rainfall with landslides. These have significantly impacted the well-being of humans and other species and shifted what areas are suitable for specific crops. These events made fertile land become very scarce in some regions of the world, as well as in parts of Europe. This situation led to a **mass climate migration** at the beginning of the 2030s when people could not live in these regions anymore. Agriculture and food production became impossible there. On top, many cultivated plants often used in agriculture were not adapted to the new extremes; it was not easy to quickly find other plants, and only a few of them still deliver sufficient yields. Actions to face this had to adapt to the specific local needs as there were no universal solutions. Plant breeding research using indigenous varieties increased tremendously until 2040.

**Globally, the population in 2040 still grows but the European population is shrinking.** Nearly all European countries face low birth rates and ageing, as well as shrinking societies. Only migration from outside Europe keeps the food systems running, providing the necessary labour for production and distribution.

In response to these changing and challenging new and unstable conditions, an emerging **post-growth economy** is developing. **European values** (like inclusion, tolerance, justice, solidarity and non-discrimination as well as human dignity, freedom, democracy, equality, rule of law and human rights)<sup>5</sup> **have changed** compared to 2023. Citizens often do not know these values and they are not stable, always changing and not made explicit. It is not clear which values will remain in the long run. Material wealth has lost importance but societal health and the pursuit of more intrinsic values are thriving. This change prompted policy-makers but also private parties such as pension funds (who need long-term prosperity), some companies and large parts of our societies to focus on sustainability and a longer-term vision.

Now, in 2040, the economic aim is to do **business within planetary boundaries**, accounting for the true costs of products (i.e. internalising externalities) and flowing profit back into production. This aim is incentivised with decreased taxes, but it is a genuine move for most economic actors. The consequences are low-profit margins, also triggered by the higher investments to retain the labour force, and more expensive and less variety of goods compared to the beginning of the 2020s. This affects all resources, particularly foodstuffs. Marketing exists but consists mostly of mutual information about the products. Aggressive marketing and influencing as known from the 2020s is history.

**Trade is mainly local or regional**, and only few mutual agreements for the import of selected food and resources exist beyond that. The composition of the food value chain has changed drastically since the 2020s, partly due to the virtual absence of cheap food coming from outside the EU. There is **more regionalisation** now. The most important staple food products are available, but some are very expensive and the quantities

<sup>5</sup> <https://ec.europa.eu/component-library/eu/about/eu-values>

in food production are not as large as 20 years ago. Although the quantity of food available is smaller than in former times, there is a larger variety and diversification of food production within the EU as farmers want to make efficient use of the local conditions. Some old sorts were revived, and old techniques from former agricultural stages and simple food production were re-invented. The crop diversification helps somehow to mitigate the increased stress on biodiversity.

The structure and power distribution within the food value chain allows for **bargaining and trading on eye level**, especially between farmers and the food industry, with many actors making deals and negotiating on equal terms and with a limited number of intermediaries. State or EU regulations focus mostly on shaping how things are produced and mostly do not interfere in these negotiations besides levelling the ground. These structures increasingly demand for shorter supply chains, avoiding intermediaries or large retailers. These chains develop gradually and give smaller producers, especially in agriculture, a bigger impact on what is consumed. But also small-scale retail, private online and offline markets or low-package direct marketing have their place.

**Health, good taste of food and intrinsic motivation for sustainability** are crucial for most consumer's food choices. This helps pull producers into sustainability and quality food with implications for catering and wholesaling. Most people cook at home and eat self-made food. For dining out, 'healthy restaurants' have spread.

People are socially cohesive and the **Homo Empathicus**<sup>6</sup> emerged, the **socially empathic** one. People mostly trust scientific data, but a high degree of scepticism remains, which means that most try to verify what feels important to them even if they are not really equipped to do so. At the same time, open discussion and different opinions are highly appreciated. The trust in unstable governments and institutions, with ever-changing coalitions, is not high even though there is currently a high degree of priority alignment. Probably this is due to their previous inability to mitigate climate change.

As **resources (land, energy and water) become scarce**, the EU increasingly organises their use within Europe to improve biodiversity, water management, etc. One strategy is exploring innovative approaches to managing these resources, for example, collective ownership of land to grow food to help mitigate land scarcity. Transparency of resource utilisation for EU imported goods is satisfactory.

Innovation is more than technological innovation; **social innovation plays a big role**. Conflicting objectives in technology development are broadly discussed. Sustainable and socially responsible production and products are drivers of innovation and export opportunities. These include logistic innovations that incorporate local

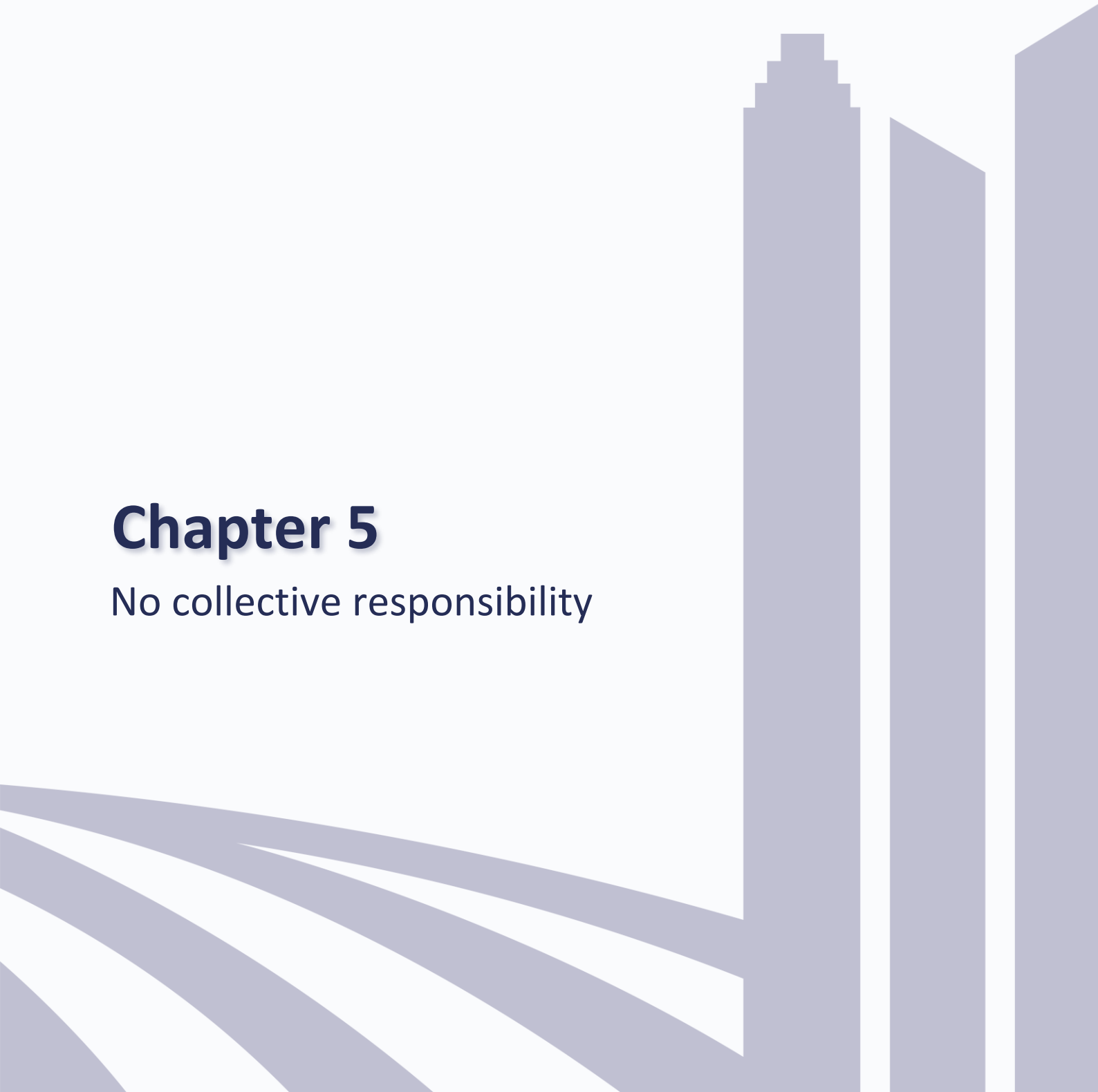
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<sup>6</sup> J. Rifkin made the term 'Homo Empathicus' famous in one of his publications (Rifkin 2009). There are different ideas about the directions, in which the Homo Economicus, one of the basic but critically discussed terms used in the Economic sciences for a long time, may develop. Some examples can be found in: Choi 2020; Zawojnska 2011.

suppliers in the operational back end of supermarkets. At the European level, there is extensive investment in integrated, innovative infrastructures (transport, water energy and communication), partly to adapt to the new climate. In addition, the EU permanently strives for and provides digital sovereignty with own Artificial Intelligence solutions. 'AI Made in Europe' is established.

# Chapter 5

No collective responsibility



## Chapter 5 – Scenario 3

### 5. **Black Scenario:** No collective responsibility

In 2040, no collective responsibility is taken for societal issues, global commons, nutrition of people or other issues. Individual responsibility for others is very limited. The most important criteria for purchasing food are price and availability, with quality taking a backseat. Health or nutrition safety are not the priorities - people eat what is available and affordable. We live in an erratic and permanently changing world - without any trust in science or ourselves. Europe as a plaything for global (economic) interests tries to defend itself in a world of heatwaves, cold and hot spots, drought or floods and erratic weather phenomena.



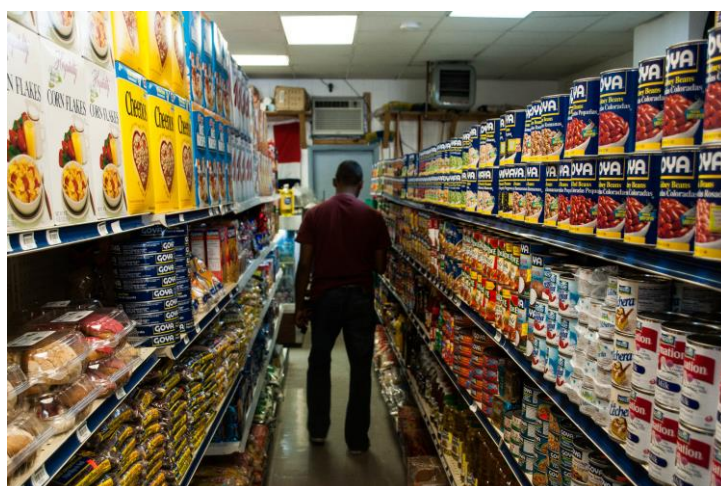
**Figure 9 - No responsibility – own interests?**

(Source: Kerstin Cuhls created with DallE 12-2024)

In the year 2040, the status quo of the **growth paradigm continues to dominate economic thinking**. International corporations, particularly digital and food companies, hold a strong presence in value chains, prioritizing profit above everything else. **Global collaboration is pursued for own profit only**, and trade has ups and downs depending on conflicts, competition and self interests – sometimes European companies find solutions for collaboration if they are dependent on them or if they need them: I collaborate when I profit from the collaboration.

Market-based instruments are used for 'climate protection', but collective responsibility is lacking. **Organisations are not interested in taking responsibility** for good nutrition, the health of end consumers, or sustainability, and many individuals do not care about others. This thinking resembles the sentence: 'the others shall do it'. Companies exploit their available tools, such as marketing and market power, to heavily influence consumer choices. They increase their revenues by creating new markets in Europe and elsewhere. Despite occasional counter movements and protests, these efforts have been unsuccessful in bringing about real changes – neither for the companies nor the behaviour of citizens. This leads to a lot of unrest among citizens and polarised discussions.

The **most important criteria for purchasing food are price and availability**, with quality taking a backseat. Not all consumers want or can act according to their values and concerns and most of them (must) neglect quality. As a result, we see a pandemic of obesity, mental health problems, and cardiovascular diseases. We have seen the emergence of food deserts already in the 2020s, nowadays, it is difficult in some European regions to find fresh food in supermarkets. Food safety is provided according to existing laws and regulations but has not been improved or adapted to new developments in the last decades.



**Figure 10 - No responsibility for other's health – food deserts emerged**

(Source: photo from By Elvis Batiz - Flickr, CC BY 2.0)

<https://commons.wikimedia.org/w/index.php?curid=48306336>

The **availability of resources** is heavily influenced by capital, leading to a game dominated by big players and land grabbing. While land is still available, the price becomes a determining factor. The old trend towards large, economically efficient farms continues driven by pressure from regions like Asia, which contributes to global competition in food markets. In Asia, efficient huge farms dominate the local markets and export to the world. With many more regions without frost, more land is used and doubled harvests are the norm. There, nobody cares about pesticides or the health of soils – quantity is key.

These dynamics have led to **increased inequalities** and a decrease in urban social security. Inequalities in adaptation to climate change also became more pronounced over the years. The European Union focuses on deregulation and innovation but falls behind in many areas of digitalisation. Data protection and ethical concerns have become less important compared to **convenience**. Foreign technologies offer many advantages – in spite of the potential security risks involved – and are therefore used extensively.

**Climate change impacts** become evident as symptoms in different regions of the world with soil erosion, loss of land and in Europe, with some areas already being lost for human food production or settlement because of extreme weather conditions. However, people adapt to the situation, albeit with varying intensities, often one step forward and two steps back. Global population growth and increased mobility, including rural-urban migration and international seasonal migration, put pressure on Europe, as also the **European population is not decreasing as much as projected in the 2020s**. More children are born in Europe and the population is living longer than expected in more or less good health. Immigration is limited, the still growing populations in African and some Asian countries are as much as possible kept out of the EU.

**The society** of 2040 is very individualistic and focuses on personal interests, **lacking social empathy** without any apparent reason. Many years ago, former UK Prime Minister Margaret Thatcher doubted that there is such a thing as society: *'I think we have gone through a period when too many children and people have been given to understand 'I have a problem, it is the Government's job to cope with it!' or 'I have a problem, I will go and get a grant to cope with it!' 'I am homeless, the Government must house me!' and so they are casting their problems on society and who is society? There is no such thing! There are individual men and women and there are families and no government can do anything except through people and people look to themselves first.'*<sup>7</sup> **Hard-core Homo Economicus**<sup>8</sup> thinking dominates and people are forced to first secure their basic needs. As they are trying to survive, they have less capacity and willingness to think about the needs of others or future generations.

There is a lot of **frustration** – a growing number of people are losing out. During the last years, there has been extensive privatisation and a stark decrease in the availability and quality of public infrastructures; infrastructures do not keep up with the needs of the people anymore. This leads to significant differences between urban areas, characterised by pockets of highly insecure neighbourhoods, and rural regions, which lack public transport and other services. Inequalities result in poor health and limited education for the *have-nots* who, in addition, are dependent on the almost-non-existent public transportation. Only the *haves* can afford health or good education, and roam easily. For example, rural areas are struggling to cope with school

<sup>7</sup> Thatcher, Margaret. 1987. 'Interview for "Woman's Own" ("No Such Thing as Society").' in *Margaret Thatcher Foundation: Speeches, Interviews and Other Statements*. London. <https://newlearningonline.com/new-learning/chapter-4/neoliberalism-more-recent-times/margaret-thatcher-theres-no-such-thing-as-society>.

<sup>8</sup> see footnote 1 on Homo Empathicus

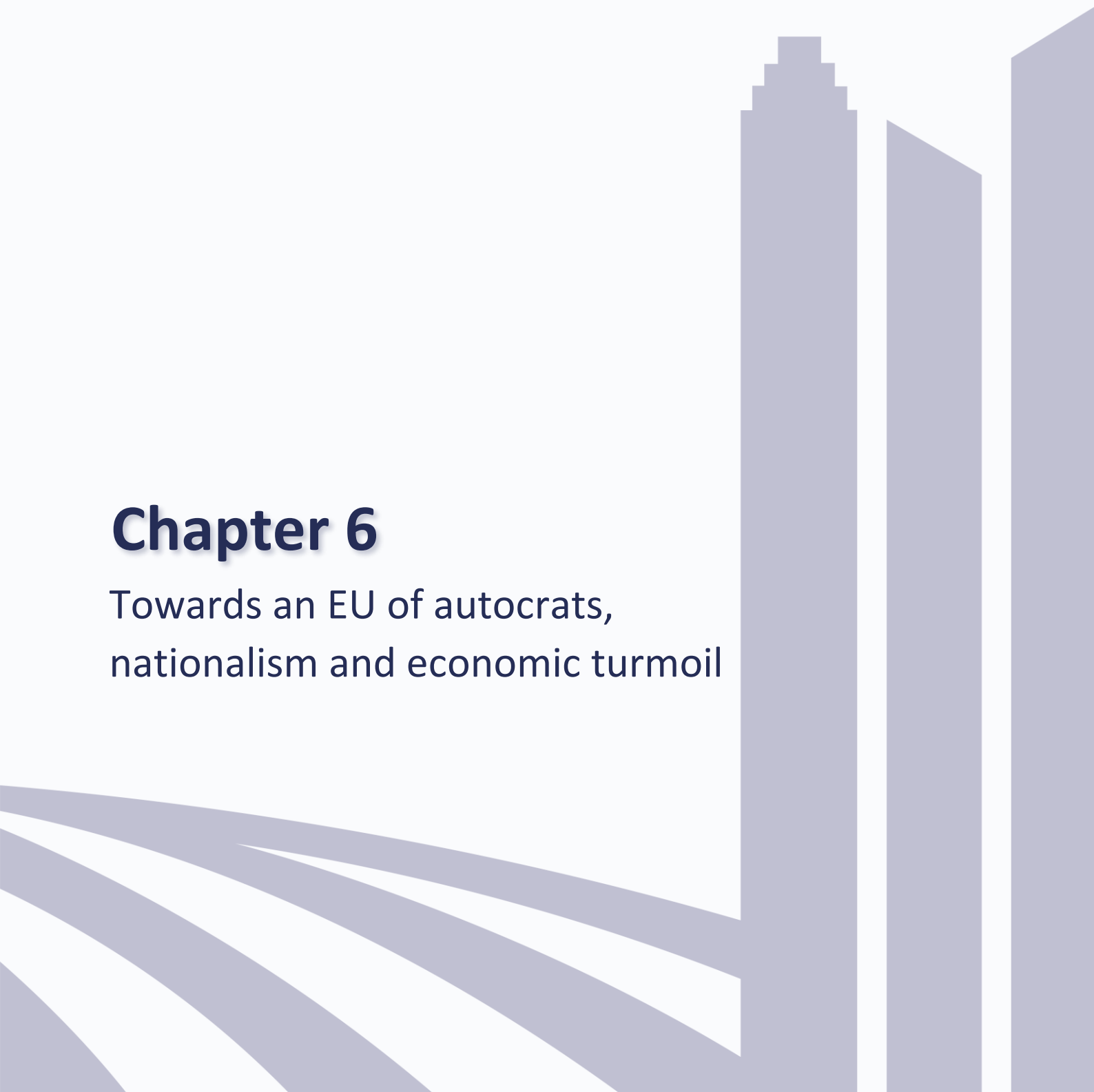
closures, forcing children to **travel long distances for education** and further hindering education for the *have-nots*, who try to develop informal carpool networks to reach schools at all.

Counter-movements emerged in the 2030s, such as the widespread use of food banks, but these attempts remained a niche. Local charities stepped in to address some of the gaps in food provision or health, but many were largely dependent on a few individuals and had to stop operations when the individuals ran out of funds, died, or just lost interest. Public funders intervene now and make some favourable decisions or try to help, but this is often seen as greenwashing and image polishing. Nobody believes that it will remain or will change the situation.

Governance is debated as being critical for further developments, because many people notice that accountability for the actions of big corporations and NGOs is unclear. Making them accountable needs EU-wide or worldwide governance, but who should start the initiatives? We see a huge impact of crude behaviour on the environment, on water quality and a severe decline in biodiversity. Nature is neglected, and problems are denied by the governments in the EU.

# Chapter 6

Towards an EU of autocrats,  
nationalism and economic turmoil



## Chapter 6 – Scenario 4

### 6. **Yellow Scenario:** Towards an EU of autocrats, nationalism and economic turmoil

Please note: This scenario is partly taken over from 'The long recession' scenario, in: Cuhls, Kerstin; Rosa, Aaron; Weber, Matthias; Giesecke, Susanne; Wasserbacher, Dana; Könnölä, Totti (2022) for the European Commission (ed.): Foresight. After the new normal: Scenarios for Europe in the post Covid-19 world. Foresight on Demand (FoD). KI-09-22-097-EN-N. European Commission 2022. ISBN 978-92-76-48939-9. doi: 10.2777/21884. The scenarios were built as context scenarios for future research, technology and innovation in general without explicit links to food systems but addressing food security as an issue. The scenarios were created by members of the European Commission, external experts and a team from Foresight on Demand. The time horizon was also 2040.

**Autocrats around the globe had a run – also in Europe – and democracy is on the decline. More and more right- and left-wing parties pledge for radical and drastic solutions. In search of orientation and alternatives people vote for them. This was a move away from the neo-liberal assumption that everything can be purchased on the world market towards policies stimulating production for the national market, with protectionist measures in place (tariffs, import quotas, quality standards) restricting international trade of bulk and foodstuffs, benefitting the domestic economy.**

**This went hand in hand with a 'back to nature' classic conservatism, idealising 'simple life' including small plot vegetable production, eye to eye with environmental concerns and concerns over access to food. In 2040, we see some of the results: Some countries left the EU and the remaining Member States are not very united. 'My country first' is the major slogan. This does not provide stability in economic terms and led to food insecurity all over the globe. The recession that started in 2024 was never resolved. Recession comes back from time to time and there is no stability in the prospects.**



**Figure 11 - More nationalism and surveillance**  
(Source: photo from Pedro Lastra on Unsplash)

**Economic downturn: A long recession** started in the 2020s, after the global pandemic induced changes in economies and the war in Ukraine with all its geopolitical effects. Global turmoil and several wars and military operations added to many food insecurities, mainly regionally, but it demonstrated how vulnerable people are. Until 2040, supply chains, travel industry and investment flows were disrupted at different times and for longer periods. People, at least those with regular jobs, are saving and not spending their money, fearing even worse times. This behaviour is further fuelling a **severe and long-term depression** that defines the economy of 2040.

The political and economic leaderships' failure to take socio-economic counter measures early enough was followed by a number of **regime changes**, beginning with major political shifts in Iran and the USA. Across the globe, **economic systems under stress** have led to widespread economic collapse, and humanitarian catastrophes have become all too common. In the EU, there was a slow move away from the neo-liberal assumption that everything can be purchased on the world market towards policies stimulating production for the national market, with protectionist measures in place (tariffs, import quotas, quality standards) restricting international trade of bulk and foodstuffs, benefitting the domestic economy. We, citizens, did not really notice it, but it went hand in hand with a (classic right-wing) 'back to nature' classic conservatism, idealizing 'simple life' including small plot vegetable production, facing on the other side (classic left-wing) environmental concerns or concerns over access to food, abating poverty with measures stimulating private vegetable production in gardens of households now formally obliged to remove terrace tiles and other decking materials. Research investments for food security, innovation and systems improvements were not exempt

from this creeping crisis, and some argue that the situation of the R&I budgets has been responsible for a marked slowdown in the pace of technological development, particularly within the EU.

And what about the European Union? The **continuous economic and political decline** that began in the early 2020s had direct and indirect effects on traditional European values (like inclusion, tolerance, justice, solidarity and non-discrimination as well as human dignity, freedom, democracy, equality, rule of law and human rights<sup>9</sup>), which changed when being confronted with the realities of economic downturn, war, and a serious re-nationalisation movement. Unfriendly forces from the US and Russia affected the EU's collective politics and especially security policy funnelling conspiracy theories to the general populace and with that even further **undermining trust in governing institutions**. Some populist leaders, seeking to gain power on a nationalist agenda, have seized the momentum to lead their nation-states to exit the EU. Worldwide, more and more autocrats appear – ruling like kings, seeding hatred and controlling and tracking their population.

The flight of the financial markets into cryptocurrency in the 2020s led to a bubble that eventually crashed, causing turbulences in commodity stocks. This caused a **crash in the food market**, and the over-investments in housing finally ended in a housing crisis, an explosion of food prices on the stock market and a cascade of other crashes. A **race to the bottom has ensued for environmental standards**, as countries compete to attract business and investments from all over the world. This trend has also influenced the economic and environmental policies of nations remaining in the EU. Most, but not all, EU countries stay together, but only because a complete break-up of the EU would even worsen the situation, and their minor, but notable, successes have bolstered the narrative that concerted efforts are more effective than singular nationalist strategies. Values of fundamental freedom are relative, but flexibility and acceptance of difference remain important to keep the EU together.

Nevertheless, in 2040, **individual nation-states and their specific interests are dominating the political agenda within the EU, undermining 'common policies'**. The dominant preference is again one of an 'intergovernmental Europe', as a collaboration between independent nation-states, moving away from the 'Communaautaire Europe' with its supranational perspective that was steadily built after the days of De Gaulle. In some parts of the Union, regulations curtailed individual rights, with little resistance from the people as they are used to top-down decisions and do not question them anymore. The originally temporal preventative pandemic measures from the 2020s became permanent and led to more and more surveillance. Outside the Union, such tendencies went even further. In some departed nations, 'crisis management' was synonymous with the elimination of privacy and personal liberties, and placed disproportionate power in the hands of a small elite. Autocratic forces emerged from within the EU. People were searching for political guidance in a fractured political landscape; a development in the 2030s promoting nationalistic policies and isolated

<sup>9</sup><https://ec.europa.eu/component-library/eu/about/eu-values>

economies. **‘My country first – me first!’ ‘Why should we care?’** These are the slogans of 2040 that propagate individualistic mindsets and nationalist sentiment, as promoted (and lived) by leaders in society. The **retreat of the state** from several formerly public duties caused by empty budgets might invite criminal organisations to fill the gap and make corruption common.

**Companies paralysed:** Most companies have had tough times for a long time, and these times are not over. Most **companies** could only **muddle through the crises**. One of the effects of the pandemic were 'zombie' companies, surviving only on the welfare payroll. This created an environment in some of the European countries where especially medium-sized but also large food companies got more and more dependent on 'welfare', receiving one state-guaranteed loan after the other even though public budgets were under pressure. Smaller companies in the 'right' sector (offering healthcare or specific equipment at the right time) survived, while others got bankrupt. SMEs are still the biggest employers in the EU, but more and more SMEs have become single-person companies as the economy shed jobs and former big employers reduced staff and slowed hiring. This obviously also affects the food sector, where these dynamics shortened supply chains and fragmented production. Producing food in 2040 is more expensive but smaller companies facilitate diversification. Because of the collapse of the 'free' international food market, now curtailed by protectionist measures of notably the United States and China, the dominance and purchasing power of main large supermarket holdings is declining to the benefit of regional food supply via small and medium scale distribution companies.

After the riots in the mid-2020s, companies were not allowed to send people into unemployment, if they wanted state subsidies. As now many of their personnel retired, they are no longer large employers, many are automated companies. People are a cost factor, not an asset anymore. Many SMEs specialise in small, narrow, but truly global markets – wherever economic activity and profit are possible.

**Inequalities in society** have drastically **increased** since 2020. Economic recession and unemployment hit vulnerable populations the hardest during the pandemic and the following crises, especially in countries without a functioning welfare state or fiscal policy flexibility. In 2040, women, minorities, non-citizens, and other traditionally weaker groups have become much more marginalised, and poor economic conditions reinforce this trend.

**Many people moved.** In the 2020s, following the first pandemic wave, many people moved to the countryside. We first saw the phenomenon in major metropolitan areas (i.e. Paris, Rome and Madrid), where citizens moved to smaller, rural communities or sub-urban areas that were seen as safer, healthier places to live during the crisis. People were encouraged to move away from cities by remote working opportunities – and those who left never returned. As those who left were those who could afford to leave, urban economies became depressed and **urban social disparities** were amplified. Cities have lost large parts of their 'bourgeois'

populations with a stable income and consistent spending habits, and in 2040 many urban areas are decaying from the lack of tax support and depressed markets. Many people **no longer dare to live in dense urban neighbourhoods** (because of safety, security, disease spreading, noise pollution, etc.). In 2040, many global populations have become increasingly de-urbanised and distributed, including those in the EU. This has influenced property markets – raising the prices of living in rural areas and depressing the formerly expensive city centres. People commute for work and culture – but cultural exhibits and centres are no longer concentrated in urban areas. Some of the attractive events still take place in the cities, but many have become hybrid and can be accessed digitally. Many people are considering migrating to China, to escape from the **depressed economies and unstable social conditions in Europe**, now, as China is open for immigrants.

# Chapter 7

Slowly moving towards a  
sustainable EU in a fragmented world



## Chapter 7 – Scenario 5

### 7. **Green Scenario:** Slowly moving towards a sustainable EU in a fragmented world

In 2040, Green Growth is key, but it still takes much effort to follow the way to sustainability and healthy nutrition for all. Companies take responsibility for the health and nutrition of citizens heading towards a sustainable EU. Old Europe is still not on a stable green path and growth is not guaranteed, but the EU strives for a just transformation and good quality nutrition for all in a very fragmented world. Many steps forward and many steps back have been gone since the end of the 2020s, and there were many detours on this way – but the EU learns from mistakes of the past and the European Commission is setting rules and standards as a frame. We need much more time for changes.



**Figure 12 - Green Growth with detours**  
(Source: photo from Karsten Winegeart on Unsplash)

In the fragmented world of 2040, Europe slowly moves towards sustainability, embracing the concept of **green growth**. This means that **sustainability aspects** (including social sustainability) are being added to the growth paradigm. We Europeans are not fully convinced and have not achieved the goals until now, but there are many attempts and paths towards it. Standards and regulations are implemented to promote innovation and sustainability, attracting international and EU corporations to shift towards a 'greener' approach. While Europe strives for a more **just world** and develops narratives around this notion, inequalities were and are still growing in some parts of Europe and the world.

Economies and values compete within the EU, leading to **regionalisation and an inward focus** until the middle of the 2020s. However, in the 2030s, the necessity of cooperation within the EU and with other countries became apparent again, when the global community re-recognised the importance of (global) collaboration.

Companies of 2040 are very different from those in 2024: a different set of actors, new leadership, new thinking, small and large working together, etc. They are influenced by powerful citizen groups and play a crucial role in driving change, taking responsibility through their usual businesses and gradually building governance structures to facilitate it. They **work for improving food quality, nutrition and the health of end consumers, as well as sustainability, and societal issues such as equality**. But they are not always successful – and what some think would lead to sustainability turns out to be unsustainable, meaning harmful to the environment or driving the company into bankruptcy. The infrastructures for companies and their work are favourable: infrastructures undergo frequent reorganisation, with accelerated planning procedures and participation fostering the reorganization of energy, water, and mobility infrastructures.

It took a while for companies to reach this point. At first, they only acted because of pressure from citizens, but with time, one after the other changed mind, and now, **companies are supporting policy-makers** and European values. In the 2020s, companies were still purely profit-oriented, but high pressure from consumers and citizen groups made them change their minds. For still making profit, even though less than before, they accepted 'green growth thinking' and now even support it. This is why companies respect EU environmental regulation, follow the rules and are not opposing them. Even advertising of 2020 became new responsible marketing.

**Citizen participation and contribution to social and societal issues and developments have increased significantly** during the last 20 years. Political parties, which used to serve this purpose, and traditional school education have been complemented in recent years by a large number of new initiatives and developments, for example for knowledge exchange, often

supported by some companies who saw their advantage early. Social engagement has become very important in European society. Politics has achieved this through a variety of new incentive systems and obligations for citizens, cities and regions.

**Policy-makers set rules and regulations to steer companies towards a greener direction.** State and EU power support: Policy-makers decide and set the rules in an EU with still existing and renewed regulations and subsidies. In the 2020s, policy-makers often talked about 'European values' but often, people did not understand them or did not live them, and policy-makers made use of values as pure narratives ('we have better values than others'). But now the European values are clear and people live them. **Mutual trust** exists in Europe, trust in European science and governments, with European solidarity and shared values prevailing.

**Europe** is still **ageing** amidst an expanding and comparatively younger world population. But also the health of people improved. Many people in their 80s are still fit, and many of them work. Efforts are made to manage demographics (incentives for more babies) and migration within the EU but with limited success. Immigration is regulated but there are not so many people keen on coming to Europe as other places of the world seem to be more interesting and lucrative.

In this environment, consumers became more and more demanding. They thought they were on a green path, living a sustainable life already, trying everything. But in fact, they are not. Their **food choices became atomised**, influenced by different bubbles and evolving trends. There are high service requirements, diversification of the requirements of different groups and permanent changes, one 'food trend', often marked as 'sustainable', follows the other. The diversification of the last 10 years has led to a situation where there are countless lifestyles. What is more important: your way of living depends much more on which group of the society you belong to whether you have a choice at all. Vulnerable groups have very few choices as they are conditioned via price and availability. They must accept the quality they get. For the rest, eco-labels exist, and marketing is effective.

Consumers try everything and change their minds quite often – if they can afford it. That makes it difficult for people to follow a healthy diet. Some consumers are driven by food trends and others are limited by their low income with the consequence that mental health problems and obesity increased, but not as much as expected 20 years ago. Medical treatments against obesity, cardiovascular diseases and also for long-Covid patients are available and solve many of the formerly existing problems. One of the problems humans must still cope with is that water

quality decreased drastically during the last 20 years, impacting the food supply and the health of citizens. Efforts are on the way but this struggle is a permanent one.

Nevertheless, some see the European Union as a role model of the world because the European block is aligned with the support of a strong and coordinated science-policy-society interface. 20 years ago, some regarded any alignment as wishful thinking, but the war in Ukraine and the many other crises (floods, droughts, earthquake in Italy, oil disaster in the Netherlands, etc.) made clear that only a united EU can survive in a rivalling world. This paved the way for more collective reflection and more concentration on research and innovation with its first impacts starting to be apparent. A specific advantage is seen in the open flow of information and non-restricted mutual learning. The Member States and the new EU power are very supportive – also in balancing technological, social, and governance innovation. In 2040, policy-makers really do their job. They act on peoples' behalves, they set the rules in the EU directing via regulation or subsidies, but leave the companies and market forces do some of the work. The single Member States set the frame on the national level and thus predefined into a 'green' direction.

Looking at the food system, transparency and resource control are prioritised nowadays, reducing resource consumption at the expense of third countries. But this sometimes collides with the consumer desires. Local resources are utilised wherever possible, ensuring enough food for the local, regional, and EU levels, but often not exactly what the new consumer trend demands for. Strong collaboration within the EU replaced the decreasing global food co-operations in the 2030s, leading to a strong domestic market.

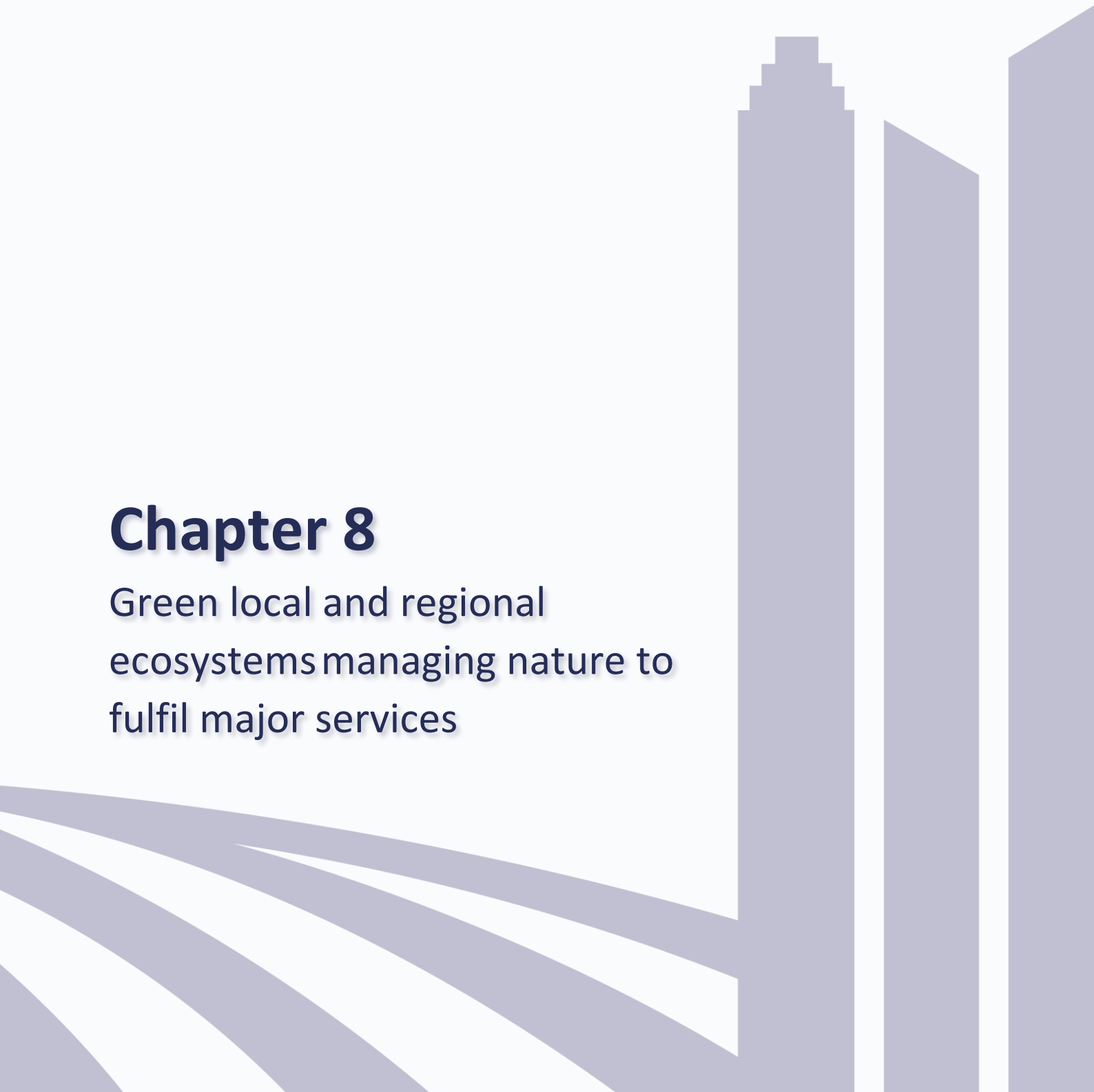
Farmers found their place: after several years of discussions and protests, farmers have found green formulas – they know what to do, embracing regenerative and organic farming practices. Circularity is high on the agenda and the available resources are controlled by all actors. Food producers work hand in hand with farmers and try to innovate wherever possible. But they are often driven by the trends. Many technologies are used and newly adapted to the new requirements. Some equipment is not as heavy, anymore, having the advantage that for example tractors in all sizes are affordable and do not require long-term loans and high investments. Land and healthy soils are prioritised for local needs. Enough food for the local, regional and EU level is available with the EU regulating this. But in a still ageing society, in which people prefer to live in cities, there is a lack of skilled people and people ready to do the hard work on farms. This has many side effects on what can be produced at all and the varieties that are offered. Other impacts come from the uncertainty of what citizens may prefer as food in the

next months – this has many effects on cattle production, fisheries and the possibilities to act in a circular way as planning and production get more and more difficult.

Efforts towards sustainability yield modest and sometimes arbitrary results. Climate change led to extreme weather events, food shortages, health consequences, and migration from the Earth's hottest places increases. Biodiversity continued to decrease. The responsibility for climate change efforts falls on a collective effort of governments, companies, and individuals – we try to cope with the situation. Growth is still driving and even though it is 'greener' now, it does not mean that the EU is on a safe path.

# Chapter 8

Green local and regional  
ecosystems managing nature to  
fulfil major services



## Chapter 8 - Scenario 6

### 8. **Violet Scenario:** Green local and regional ecosystems managing nature to fulfil major services

Green Growth is key in 2040. Nutrition for all is safe – green local and regional ecosystems managing nature make it possible to fulfil major services (providing resources for food production, keeping landscapes intact etc.) despite climate change, multi-crises and a fragmentation of the globe. Not everything is available all the time, and consumers understand the role of seasonal agriculture. The EU set the green frame with standards, and companies supported the development since the end of the 2020s. We managed to have enough, good and tasty food.



**Figure 13 - Green Growth world**  
(Source: Kerstin Cuhls generated with Stable Diffusion)

In the year 2040, society follows the **concept of 'Green Growth'**. Sustainability aspects are integrated into the existing economic growth model. The carbon footprint has been established as a standardised 'currency' across the EU. EU member states have invested a lot of resources in developing a fair system that can be used

by everyone. Advances in digitalisation and a high level of transparency in the food chain now make it easy for everyone to participate. At the same time, this change has led to a significant reduction in bureaucracy for business and local authorities including the removal of a large number of sector-specific data collection (were never used) and environmental regulations. This has led to a high level of acceptance among businesses, regions and society. But **society does not renounce consumption**.

This **model is promoted by standards and regulations**. Many programmes stimulate innovators who bring ideas, technologies and products to the market that foster sustainable development, particularly in Europe. The clearly green direction of innovations and innovation policies motivates many for new, sustainable businesses. National governments and the EU support this approach, with policy-makers setting rules, regulating and providing subsidies. The EU and the Member States set the framework with their legislation, leading and paving the way towards a 'green direction', and companies follow the rules.

**International corporations have recognised the opportunity** to invest in many new emerging markets. New ideas and ways of working are spreading worldwide, many originating in Europe. Society, the private sector as well as political decision makers have realised that when integrating sustainability aspects in all decisions, in the long run, society will be better off. This makes it easier for consumer associations and environmental NGOs and researchers to be heard by companies and society, and to find alliances for the necessary moves towards sustainable development. On this new marketing front, companies have established structures that take responsibility for the health of end users or consumers. Eco-labels exist, are trustworthy and transparent. This enables consumers to make informed choices and there is greater awareness of the influence consumers have when purchasing. Furthermore, there are also participatory guarantee and certification schemes in place in which consumers themselves exercise oversight over production sites, judging the quality in light of sustainability-oriented quality criteria.

This leads to **high service requirements by certain consumer groups**. Those who have the possibility to follow 'food trends' do so in their search for a sustainable lifestyle. This continuous change is understood as an economic opportunity by the food industry, but by start-ups and smaller companies as well. All are promoting **diversification of lifestyles** – and the consumers follow. Still, not all groups of society have a choice. Vulnerable groups are limited in their choices, as they are conditioned via price and availability. They have to accept the quality they receive.

More resources are locally and regionally available than in the 2020s, and there is transparency in the food system regarding the resources' origins through the Supply Chain Law. This is reflected in the trust in labels. Certain goods are no longer imported and had to be substituted by local alternatives. Prices increased for still imported goods. Some goods are not imported, because they cannot meet the sustainability standards set by the European Commission. There is international trade for some commodities, especially those, which can be

produced elsewhere more efficiently, but strong regional clusters developed. The consumption of resources at the expense of third countries is greatly reduced through this approach. This goes hand in hand with the principles of a circular economy, as it is easier and more effective to close loops locally. Regional and interregional cooperation is more prevalent compared to the 2020s.

Land and soil are used and a strong **focus is on soil health**, maintained and managed for local needs, ensuring sufficient food supply at the local, regional and EU levels. The EU plays a regulatory role in this regard. This contributes to production and cost transparency, which means that **true costs/ value** are the core of the economy. Today, in 2040, the social and environmental burden that products cause is reflected in the price that consumers pay at the point of sale and thus, has a great influence on consumption patterns and food choices. People know the price of land, they know the price of the resources they consume – and they are willing to pay the price. Companies, as well as consumer associations, assist in training consumers to keep a balanced diet within this new framework.

There is **mutual trust**, including trust in science and governments, due to a shared sense of urgency to jointly address problems that threaten life on Earth as we know it. European solidarity and shared values are widespread, a European feeling of belonging to a joint sphere, a kind of community, sharing the same memes<sup>10</sup> has developed. This is called 'The New We' (in the 2020s, there was a similar slogan 'togetherness'). The local and regional connectedness within the food system further triggers this development. People enjoy the special features of the different regions also from a culinary point of view.

**Conscious and bottom-up efforts drive a new kind of technological progress.** Extensive participation procedures are in place to negotiate conflicting objectives in technology and further developments. Certain technologies and their applications are only accepted in selected areas that contribute to sustainable development. There is a shared responsibility within science as well as in society to think about solutions and actively contribute to them by integrating the solutions into everyday's life.

And the whole endeavour is successful: In terms of climate change, the EU as well as the world has managed to **decrease emissions, resulting in fewer adaptation needs than expected**. To support the adaptation to the new temperatures and other conditions, new seeds (GMO and non-GMO depending on the region) and breeding technologies are being studied; efforts are starting to bear fruit. Concerns about the long-term threat from GMO plants to other species and the ecosystem are still discussed.

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<sup>10</sup> Memes are ideas, thoughts and information patterns that spread through communication. They are the cultural counterpart to the biochemical gene; they reproduce themselves, interact with their environment and adapt to it. Value memes are systems of memes and independent thought structures. Societies can be described according to their memes (Beck et al. 2005).

We see a shrinking and ageing population in Europe amidst a growing global population. Attempts to manage demographics and migration have mixed success. Attempts to change birth rates did not work out and qualified migration could not be triggered to a great extent. Europe still needs more young, talented and qualified people.

There are frequent reorganisations of infrastructures due to demographic dynamics. Accelerated planning procedures and active participation of citizens enabled the fast transformation of energy, water and mobility infrastructures until now – this will be followed further. The European infrastructures are adjusted and improved to address the impacts of changing production and processing conditions in agri-food value chains as well. Recognition of climate-related challenges has led to proactive measures being implemented, which leads to a further relaxation of the production and ecosystem.

## Chapter 9 - Use of scenarios

### 9. How to make use of the scenarios?

The FOSTER scenarios are intermediate working material that can be used to frame the visions, ideas and possibilities of the CDIs. They can provoke and challenge our thinking.

The scenarios were co-created in workshops, which already had an impact on the futures thinking of all participants. The scenarios are not the future, they are possible and plausible. They are specific to the FOSTER Foresight journey. That means they can be used in other contexts, too, but they were co-created for the specific purpose of working together on possible, sometimes extreme futures and to make use of them in the further FOSTER learning journey. The CDIs can go on working within these different future worlds or test systematically, how robust their future pathways and transformative statements are in the face of or within these scenarios. How this will be done is conceptualised in the further work of WP 2 and 3. The scenarios will also be used as a frame for the selection of a topic for a 'new CDI' in WP 1.

**All findings of this report will be used in the next steps of the FOSTER project: in specific scenarios for CDIs, in general discussions with the CDIs, in the FOSTER Knowledge Platform and its learning journey, for robustness tests of transformative statements, visions, future pathways and the aims of the CDIs.**

**The scenarios are working material in imagining certain futures. They are no predictions as the future will be shaped by external forces and the environment. But also human beings and the activities that we will start from now on will shape the future. Scenarios are not good or bad, they are images of possible futures.**

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