Edible Dublin Food Strategy

Dublin City Council

Edible Dublin Food Strategy

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Photo Credit:
Cliona Kelliher, MSc.

In the Edible Dublin survey, we asked people for their fond food memories, you will find some of those memories amongst the pages.

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Executive Summary

Dublin City has a rich food history, one that has left a global mark and is being celebrated today. Food is not only an important aspect of our society and culture, but essential to our health and wellbeing. While the right to healthy food is internationally recognised, there are large discrepancies in the reality of access to nutritious and affordable food. This inequity is being exasperated by climate change. Water, soil, biodiversity and food are all at risk, making it essential that we address the sustainability and resilience of our food system.

This strategy will follow the principles of a just transition working to ensure that all residents of Dublin City will have access to healthy and affordable food, while also addressing the impacts of climate change on our food system.

Through this strategy we aim to: 1. Enable knowledge exchange between rural and urban areas, and between generations; 2. Work to improve food skills and knowledge, in addition to building a greater understanding amongst the public and businesses of food production, preparation, distribution and waste prevention; 3. Improve the health and wellbeing of the City's residents through better access. All of which will contribute to making the City and its residents resilient to climate change impacts on the food system.

To accomplish this, the strategy has developed four action areas:

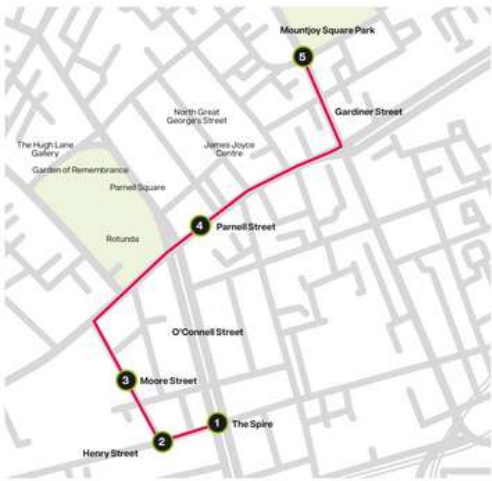
- Healthy Citizens, Healthy City
- Growing Food Around Us
- Cooking, Creating, Discovering
- Farm to Fork and Back – Stopping Food Waste

Introduction:
A Food Just City

Everyone has the right to a standard of living adequate for the health and well-being of himself [herself, themselves] and of his [her, their] family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his [her,their] control" (United Nations, 1948).

What will we eat in 2050? Imagining the future of food in the City has led us to look at the past and present for answers. Looking to the past, Dublin City's rich history is evident. Growing around the River Liffey and its tributaries, residents of the City flourished harvesting vegetables in the hinterlands, trading livestock at marts in the City, and bringing spices into the City at the port. The City's social and economic life was defined by food, and this influence can be seen in street and place names across the City.

To explore Dublin's food past see Eat the Streets! *Food History Walking Tour* and the *17th Century Food Walk* on www.eatthestreets.ie



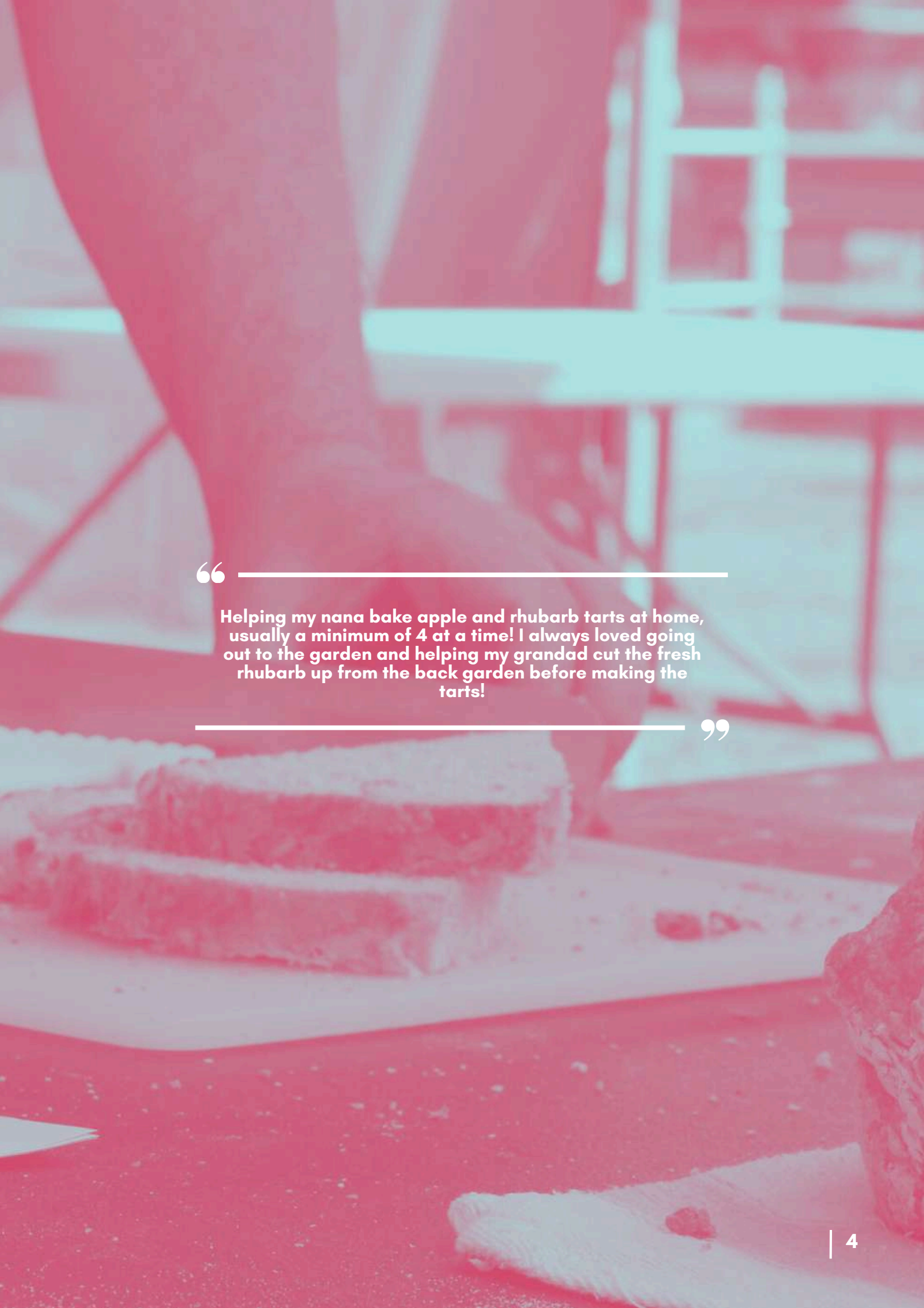
Changing our relationship with food by understanding where it comes from, how it is grown and produced, we start to appreciate our connection and dependence on the natural world around us. Particularly the value of water, soil and biodiversity to our lives and livelihoods. All are essential to life, and they are all at risk because of climate change. Without water and soil to grow food we cease to exist. Without biodiversity we don't have a resilient food system.

An assumption that we will always be able to buy all the food we need to meet our nutritional needs and a belief that we are food secure persists. Climate change impacts are not limited by geography, a drought or flood in one place has global consequences. The IPCC *Sixth Assessment Report Working Group II Climate Change 2022: Impacts, Adaptation and Vulnerability* highlights the risk we face:

"Climate change will increasingly put pressure on food production and access, especially in vulnerable regions, undermining food security and nutrition (high confidence). Increases in frequency, intensity and severity of droughts, floods and heatwaves, and continued sea level rise will increase risks to food security (high confidence) in vulnerable regions from moderate to high between 1.5°C and 2°C global warming level, with no or low levels of adaptation (medium confidence)."
-(IPCC, 2022)

What can a City do to insure that the food we eat in 2050 is nutritious and builds our resilience to climate change?

Edible Dublin is an initiative by Dublin City Council that will set out how we feed a City in a time of climate change. This strategy will follow the principles of a just transition; enabling us to work towards a city where all residents of the City have equitable access to nutritious food for their health and well-being.



Helping my nana bake apple and rhubarb tarts at home, usually a minimum of 4 at a time! I always loved going out to the garden and helping my grandad cut the fresh rhubarb up from the back garden before making the tarts!

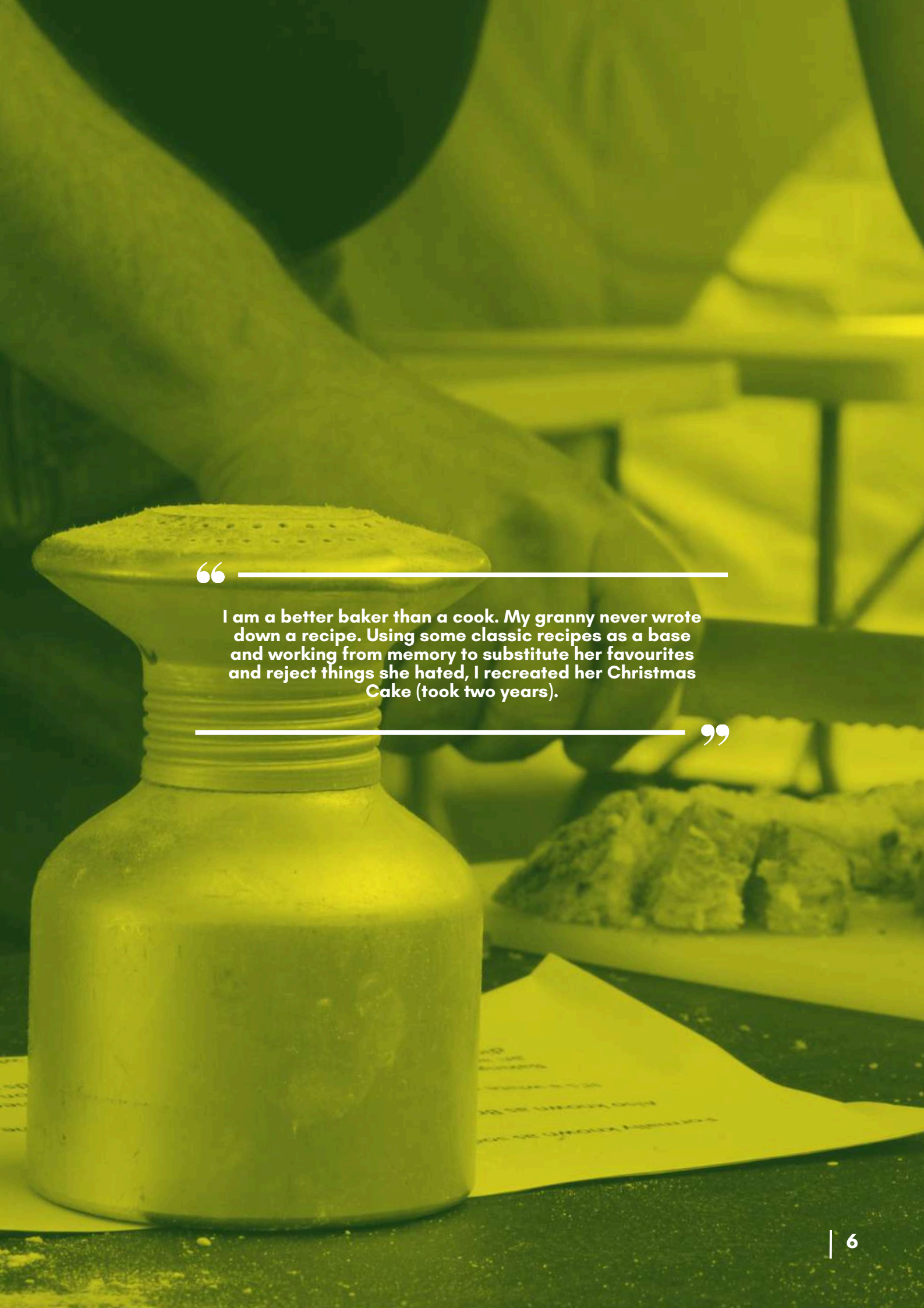
Vision:

By focusing on food justice and nutritional equity the Edible Dublin: Food Strategy will insure that all residents of Dublin City will have access to healthy food within a 15-minute walk, cycle or journey by public transport from their home by 2030.

Objectives:

Our vision is supported by objectives that align with the *Sustainable Development Goals* (SDGs) and National Climate Objectives, which inform the actions in our climate action plan, *Climate Neutral Dublin 2030*. In implementing our climate action plan, we engage and empower residents of the City in taking climate action in their day to day activities. Edible Dublin, provides a pathway and narrative for engagement that has benefits beyond climate change, and these are considered in our objectives:

1. Re-energize the City, by bringing people into the City to share experiences of growing, cooking, creating and discovering the City's food.
    a. Examine and explore the role of social farming and urban food systems – knowledge exchange from rural to urban
2. Nourish a climate resilient food system in the City that:
    a. Improves health and well-being of residents by increasing their access to healthy and affordable food.
    b. Provides residents with food skills and knowledge.
    c. Connects people with the sources of food with a view to increasing the understanding of food production, preparation and distribution, and prevention of food waste.
    d. Increased awareness and understanding of water quality, soil and biodiversity, their role in food production and steps we can all take to cultivate a healthy City
3. Build on the City's land-use, green infrastructure, and economic and community development policies to make the City and its residents resilient to climate change's impact on the food system



> I am a better baker than a cook. My granny never wrote down a recipe. Using some classic recipes as a base and working from memory to substitute her favourites and reject things she hated, I recreated her Christmas Cake (took two years).

Sustainable Development Goals

The SDGs act as a blueprint for “peace and prosperity for people and the planet, now and into the future”. They encompass a systems approach to ending poverty, improving health and education, reduce inequality, enable economic growth, all the while tackling climate change and working towards the preservation of our green and blue spaces. This systems approach is housed in goal 17, partnerships for the goals. Ultimately, the SDGs represent leverage points in a complicated system. While the below goals are the most prominent SDGs in the food strategy, all goals are relevant. Changes in one goal will have a ripple effect on the others. The food system interacts with so many aspects of the SDGs, making it an important vehicle for contributing to the successful delivery of the goals overall.

Goal 2: Zero Hunger
Goal 3: Good Health and Well-Being
Goal 5: Gender Equality
Goal 10: Reduced Inequalities
Goal 11: Sustainable Cities & Communities
Goal 12: Responsible Consumption and Production
Goal 13: Climate Action
Goal 14: Life Below Water
Goal 15: Life on Land
Goal 17: Partnerships for the Goals

In October 2022, the Policy Update on Ireland's Implementation of the Sustainable Development Goal Targets[1] *was published. Under SDG 2 Zero Hunger, the document states:*

"Ireland has been a long-standing champion of global efforts to reduce hunger and malnutrition, borne out of our historical memory of great hunger. The eradication of hunger and a particular focus on tackling undernutrition has been a cornerstone of Ireland's development programme since its inception. […] Good nutrition is the most significant maker and marker of human development."

It highlights the sharp increase in poverty and hunger seen during 2021. The Covid-19 pandemic, Russia's conflict with Ukraine and climate change has exacerbated existing inequalities and weaknesses in the food system. The rising cost of living adds to the urgency that makes it essential that we fully understand our food system and make it resilient to current and future impacts.

Ireland's Second National Implementation Plan for the Sustainable Development Goals[2] underscores the need for an inclusive and localized approach to the SDGs. *"While the SDGs are global, their achievement will depend on our ability to make them a reality locally".*

An assessment of the SDGs in Ireland presented results that point to a declining national performance (Murphy, Walsh & Murphy, 2023). The index presented in the paper reveal that Ireland requires improvement in means of implementation and governance of the SDGs (ibid). A recommendation being the adoption of "a culture of SDG-data-informed policy development" (ibid, p.13).

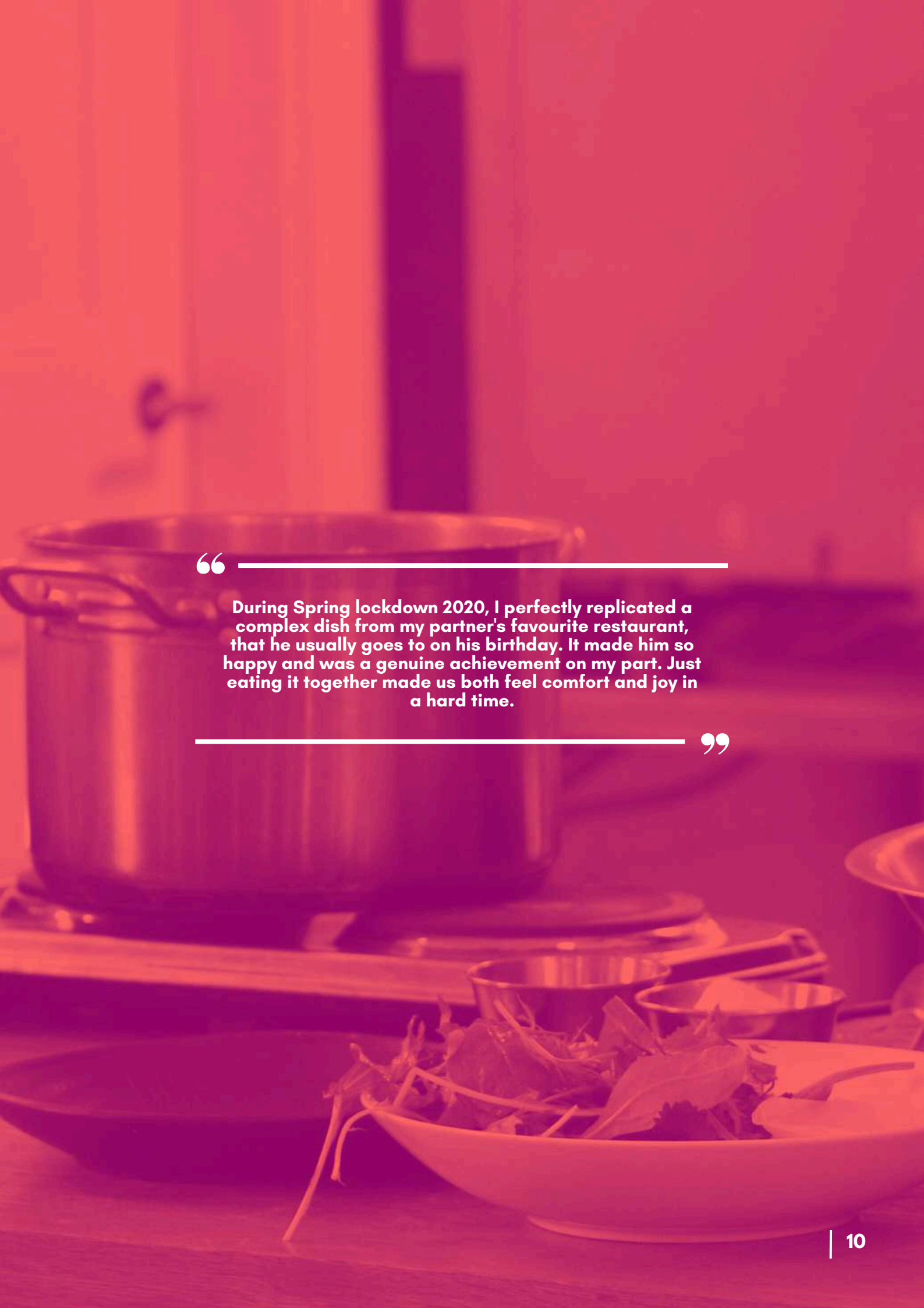
[1] gov.ie - National Implementation Plan for the Sustainable Development Goals 2022-2024 (www.gov.ie)
[2] gov.ie - National Implementation Plan for the Sustainable Development Goals 2022-2024 (www.gov.ie)

Chef's Manifesto

The Sustainable Development Goals Advocacy Hub for Action 2: Zero Hunger, has worked with 1100+ chefs from 90 countries all over the world to develop the Chefs Manifesto. The Chefs Manifesto is an action plan created on the premise that chefs can be powerful advocates for better food systems into the future. The manifesto encompasses 8 action areas that are in line with the SDGs framework:

- Area 1: Ingredients grown with respect for the earth and its oceans
- Area 2: Protection of biodiversity and improved animal welfare
- Area 3: Investment in livelihoods
- Area 4: Value natural resources and reduced waste
- Area 5: Celebration of local and seasonal food
- Area 6: A focus on plant-based ingredients
- Area 7: Education on food safety and healthy diets
- Area 8: Nutritious food that is accessible and affordable for all

One of the original and recurring contributors to DCC's Eat the Streets Festival is Chef Conor Spacey, an active member of Chef's Manifesto.



> During Spring lockdown 2020, I perfectly replicated a complex dish from my partner's favourite restaurant, that he usually goes to on his birthday. It made him so happy and was a genuine achievement on my part. Just eating it together made us both feel comfort and joy in a hard time.

The Ingredients

Developing a food strategy that is rooted in resilience requires an understanding of population health and food and of the policy context as it pertains to both.

Population Health

Safefood, the public body responsible for raising consumer awareness on a multitude of issues relating to food safety and healthy eating, have produced a set of food poverty indicators both for individuals and households (Carney & Maître, 2012).

- Can't afford a meal with meat or vegetarian equivalent every second day
- Can't afford a weekly roast dinner or vegetarian equivalent
- Missed a meal in the last two weeks due to lack of money

Under these indicators *Safefood* has calculated 1 in 10 people in Ireland (Island of Ireland) are living in food poverty (ibid). The vulnerability to food poverty increases under the below household compositions (Safefood, 2012);

- 18% if household is on low income
- 18% if three or more children are under 18 in household
- 21% if head of household is ill/disabled
- 23% if lone parent with 1+ child
- 23% if head of household is unemployed

Further, the risk of food poverty rate in Ireland in 2018 was 8%, with the highest rate spiking at 8.8% in the Eastern and Midlands Region (CSO, 2019). According to the United Nations World Food Programme (WFP), <2.5% of the Irish population is suffering from undernourishment[3](WFP, 2019). Under Goal 2 (Zero Hunger) of the SDGs, the Irish Government is obligated to document and report on factors relating to food insecurity, undernourishment and malnutrition in children under the age of five. Malnutrition refers to deficiencies, excesses and/or imbalances in a person's diet. It covers two broad groups of conditions. Group one is undernutrition, which includes stunting, wasting, underweight and micronutrient deficiencies or insufficiencies. Group two is overweight, obesity and diet-related non-communicable diseases (WHO, 2021a). In terms of malnutrition in children as a global indicator, it is not classed as a significant problem in Ireland and therefore this indicator is only measured with an assessment of overweight and obesity in pre-school children.

[3] The prevalence of undernourishment (PoU) is an estimate of the proportion of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal, active and healthy life. It is expressed as a percentage. This indicator measures progress towards SDG Target 2.1.
SDG Target 2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round." (WFP, 2019).

The most recent report of this indicator shows that at age 3, 19% are overweight and 5% had obesity. At age 5, 15% are overweight and again a further 5% had obesity (CSO, 2019).

In the index created and used to assess Ireland's SDGs[4] (Murphy, Walsh & Murphy, 2023), the indicators mentioned above were ranked across the EU 28[5] . Ireland ranked as a best performer (more than one country can be given the same ranking) in the SDG indicators for undernourishment and food insecurity and ranked 3 in prevalence of stunting (ibid).

Relevant to the statistics on food poverty, the study ranked Ireland as 11th in the indicator of food price anomalies which measures food price volatility.

A study has found that low-income households compromise on food as it is "the elastic item in the budget" (Caraher & Furey, 2021). The manifestation of that can be parents serving smaller portions to their children, skipped meals or going an entire day without a meal or parents going without.

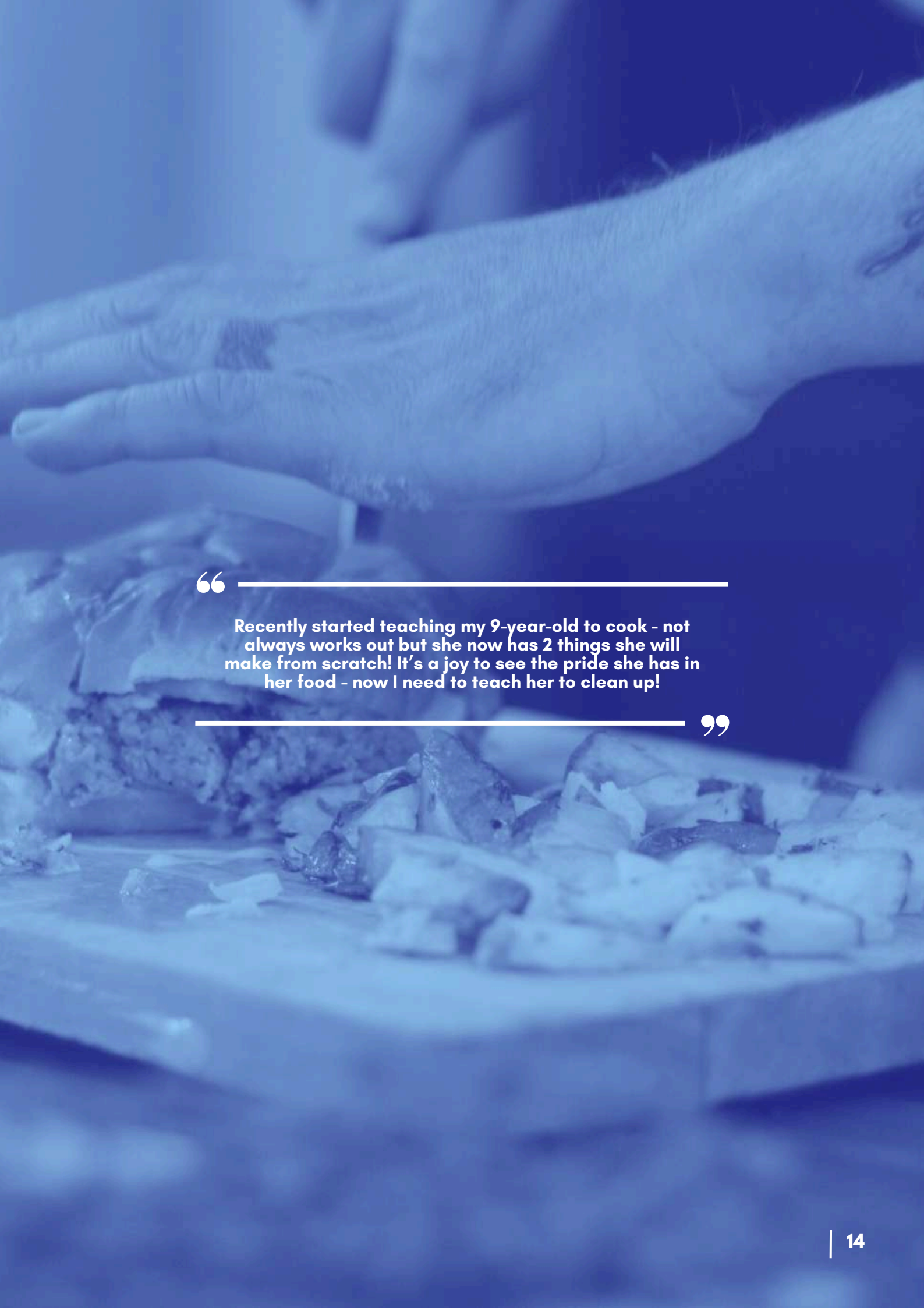
"Many low-income families are forced to buy cheap foods that are usually nutritionally poor but calorie-dense"

– Orna O'Brien, Irish Heart Foundation, 2021

In Ireland, schools can apply for funding to provide school meals to support families of low socio-economic groups. However, students are offered ultra-processed food which compounds pre-existing health inequalities (Darmody, 2021).

The *Safefood* report *"What is the cost of a healthy food basket in the Republic of Ireland in 2020?"* found that families with low incomes would need to spend up to slightly over one third (35%)of their weekly take home income to afford a healthy diet.

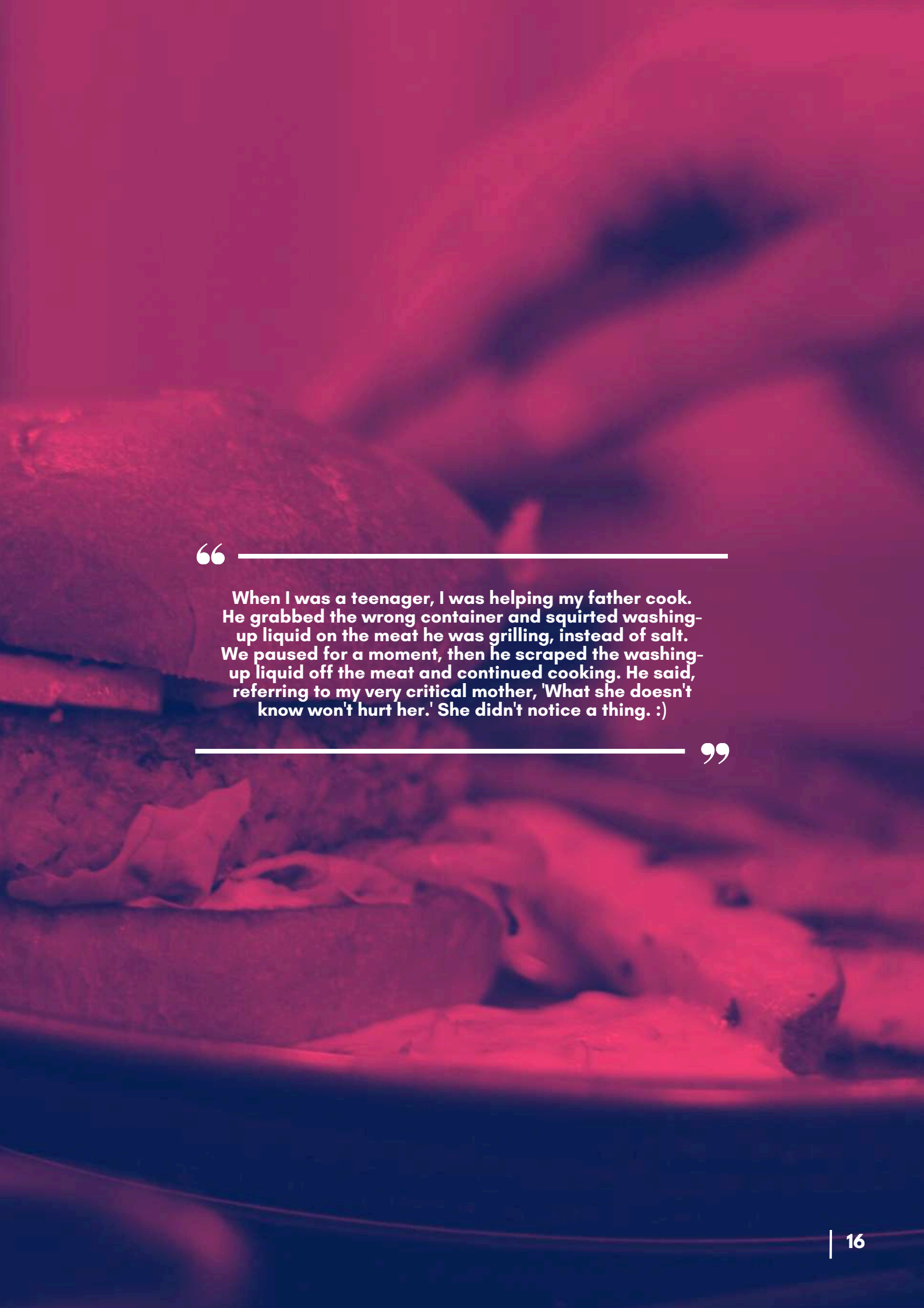
[4] https://journals.plos.org/sustainabilitytransformation/article?id=10.1371/journal.pstr.0000082
[5] The study was carried out prior to Brexit and so the rankings are across the Pre-Brexit EU 28 rather than Post Brexit EU 27



> **Recently started teaching my 9-year-old to cook - not always works out but she now has 2 things she will make from scratch! It's a joy to see the pride she has in her food - now I need to teach her to clean up!**

This highlights the challenge many families face in balancing the cost of a nutritious diet with other essential household expenses (Safefood, 2021). The report found that food costs were highest in the household composition on low income with two parents and two children, where the older child is in secondary school with food costs 22% higher than a similar household with younger children. In addition, household's dependent on benefits spent 12% more of their income on food than those where one adult was in employment (ibid). In terms of public health, low-income households typically tend to eat less well, which contributes to higher levels of excess weight and corresponding health complications like heart disease and type 2 diabetes (Shannon, 2021).

Children require nutrient-rich diets that are essential for them to grow, learn, play and engage. Good nutrition is not only essential for early childhood development, but also into adulthood influencing health and wellbeing. Malnutrition in Ireland, according to the data, manifests in overweight cases. The global food system has seen a shift with increased consumption of processed foods high in fat, sugar and salt. Seen first in high-income countries in the 1950s but after the globalisation of the food system in the 1970s onwards, highly processed foods have become more readily available (Baker et al., 2020). Less visible forms of malnutrition such as “hidden hunger”, which is a deficiency in essential vitamins and micronutrients, can occur because of consuming an energy-dense but nutrient-poor diet (Lowe, 2021; Gödecke, 2018). Micronutrient deficiencies can affect growth, immune systems and brain development, highlighting the essential differentiation between consuming enough calories to replenish expelled energy and eating the right foods to meet your body’s nutritional needs. This can in turn cause reduced educational outcomes, reduced work productivity and increased health risks (WHO, 2021a).



When I was a teenager, I was helping my father cook. He grabbed the wrong container and squirted washing-up liquid on the meat he was grilling, instead of salt. We paused for a moment, then he scraped the washing-up liquid off the meat and continued cooking. He said, referring to my very critical mother, 'What she doesn't know won't hurt her.' She didn't notice a thing. :)

Policy Context

The landscape of food policy in Ireland is complex. Broadly the food system is the remit of the *Department of Agriculture Food and the Marine* (DAFM).There are two principle means by which DAFM guides food policy: *Sustainable Food Systems Ireland* and *Food Vision 2030*. There are multiple driving forces behind this focus, namely the *Common Agriculture Policy*, and the need to drive emissions down from agriculture. On the latter, there has been an emphasis on the sustainability of Irish food products, and the argument that a shift away from Irish produced dairy products may lead to carbon leakage and other environmental consequences (Emmett-Booth, et al, 2019).

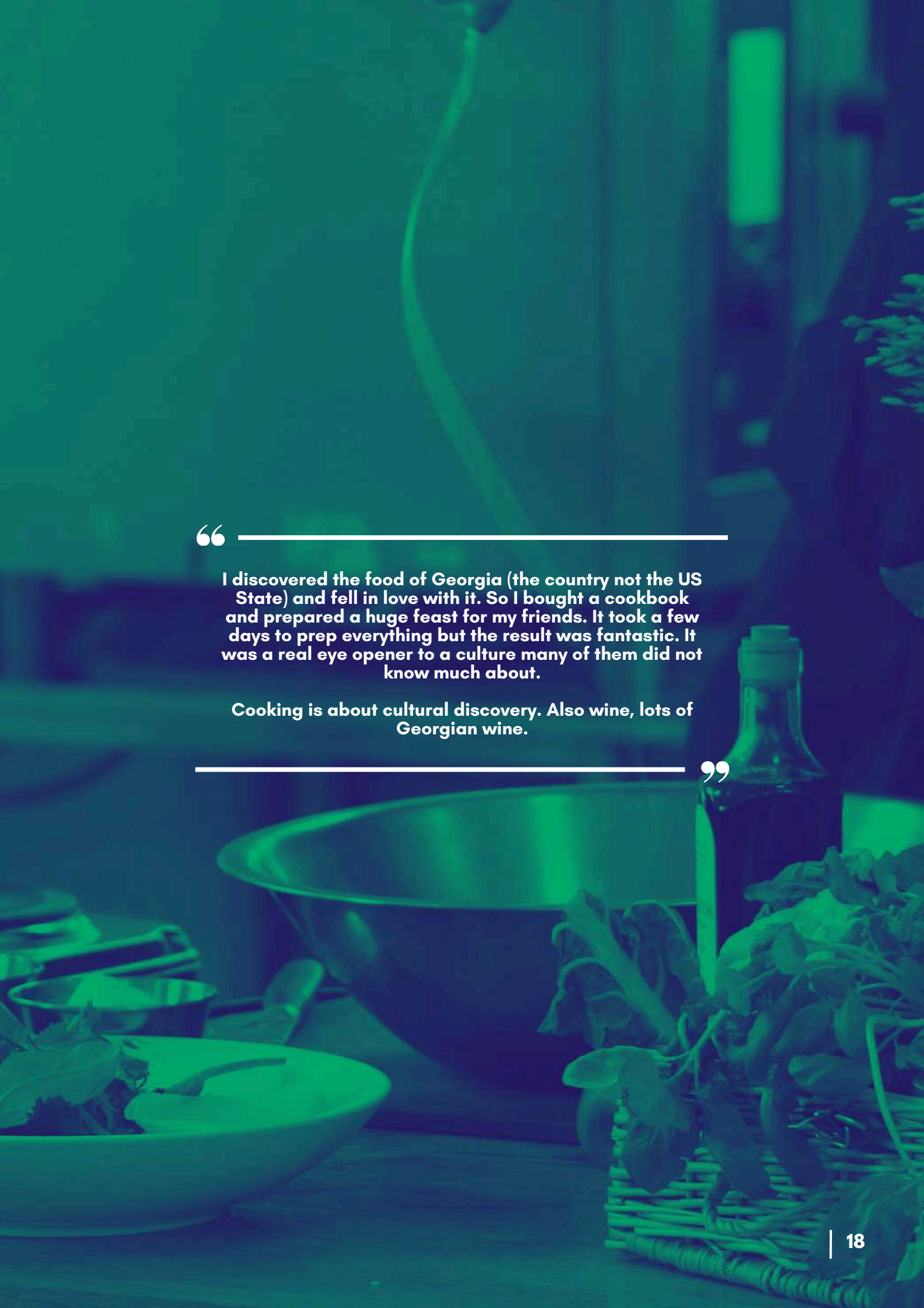
The relationship between population health and food is the responsibility of the *Department of Health*. *Healthy Ireland* is a framework to support the Government's response to the country's changing health and wellbeing profile. This framework is a roadmap based around four goals that aim to build a healthier Ireland:

- Increase the proportion of people who are healthy at all stages of life
- Reduce health inequalities
- Protect the public from threats to health and wellbeing
- ***Create an environment where every individual and sector of society can play their part in achieving a Healthy Ireland***

Guidelines and policies that underpin work relating to food and health in Ireland include the *Healthy Ireland Framework* and the *Obesity Policy and Action Plan*. In 2016, the *Department of Health* issued revised national healthy eating guidelines '*Healthy Food for Life*' [6]. The 3 key messages from these guidelines are:

- Limit high-fat, sugar, salt foods (HFSS) and drinks from the Top Shelf of the food pyramid
- Eat more vegetables, salad and fruit - up to 7 servings a day
- Size matters - use the Food Pyramid as a guide for serving sizes

[6] https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/heal/healthy-eating-guidelines/



I discovered the food of Georgia (the country not the US State) and fell in love with it. So I bought a cookbook and prepared a huge feast for my friends. It took a few days to prep everything but the result was fantastic. It was a real eye opener to a culture many of them did not know much about.

Cooking is about cultural discovery. Also wine, lots of Georgian wine.

Urban Agenda for the EU Partnership on Food

Dublin City Council was successful in its application to join this partnership under the joint coordination of Lisbon Metropolitan Area and the Municipality of Milan.

This partnership will provide input to European regulation and funding and multilevel governance actors as to address local challenges and connect and build capacity for cities to support positive food system transformation.

This will operate under the core values of:

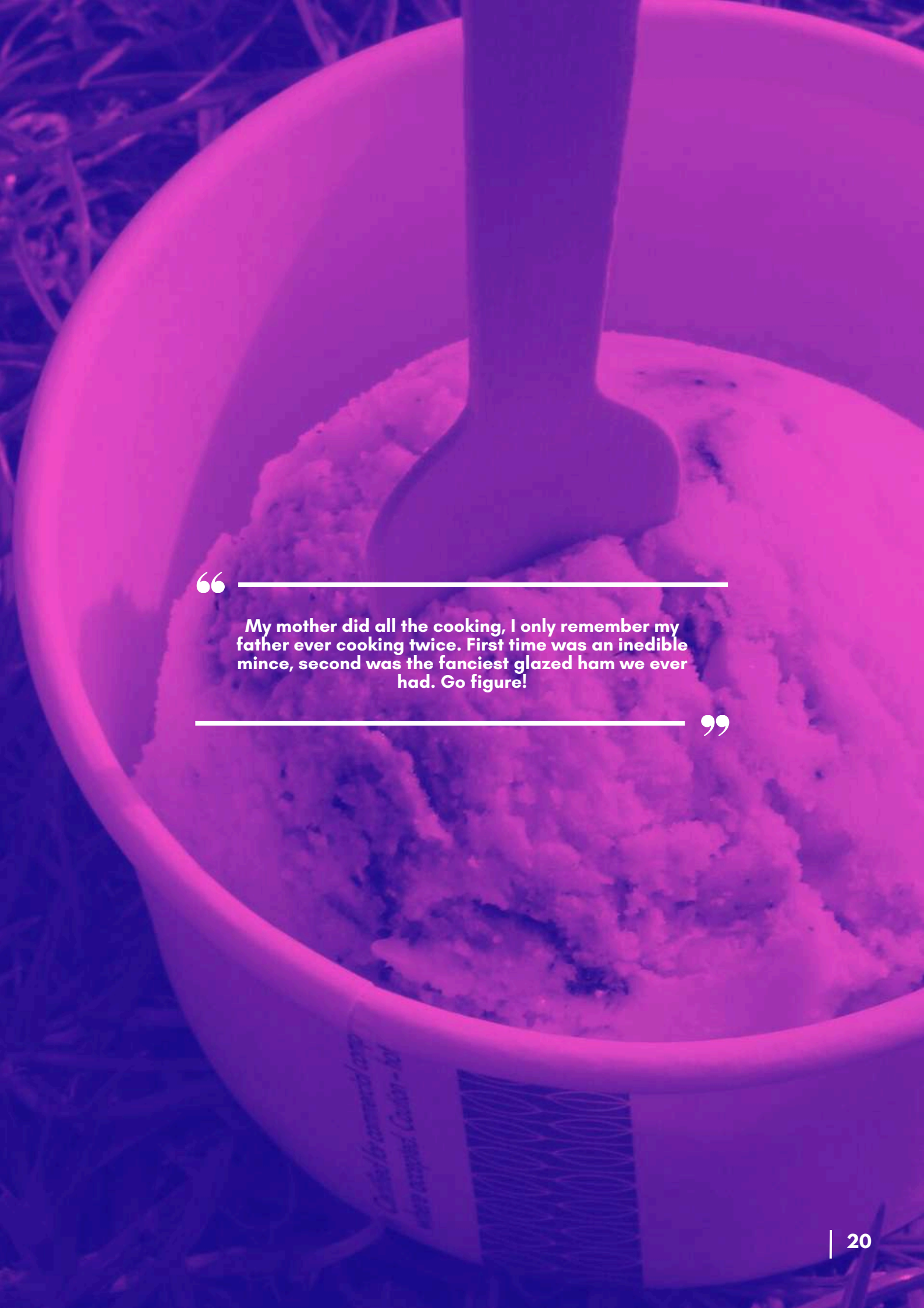
- Maintaining a food system perspective
- Supporting multilevel governance
- Considering the real price of food (including externalities)
- Recognising food as a human right and a common good

Milan Urban Food Policy Pact

The *Milan Urban Food Policy Pact* is an international agreement of Mayors. It is a concrete working tool for cities composed of a framework for action: 37 recommended actions, clustered in 6 categories:

- Governance
- Sustainable Diets and Nutrition
- Social and Economic equity
- Food Production
- Food Supply and Distribution
- Food waste

For each recommended action there are specific indicators to monitor progress in implementing the pact. Each year the *Milan Pact Awards* offer concrete examples of the food policies that cities are implementing in each of the 6 pact categories. Dublin City has been a signatory since 2022 and is working on the action areas via the *Edible Dublin Food Strategy* and *Eat the Streets*.



My mother did all the cooking, I only remember my father ever cooking twice. First time was an inedible mince, second was the fanciest glazed ham we ever had. Go figure!

The Kitchen Equipment: How we are going to get there

Even the most simplistic meal requires equipment to prepare - your hands. The actions in our City's food strategy will require that we collaborate to prepare the soil for the seeds of our future.

We will work with key government agencies, academia, private sector and most importantly residents of the City to explore and understand what is needed. Together we will learn how to nurture our food system, ensuring that everyone benefits.

The Method

Step 1: Defining the Need for a Food Strategy

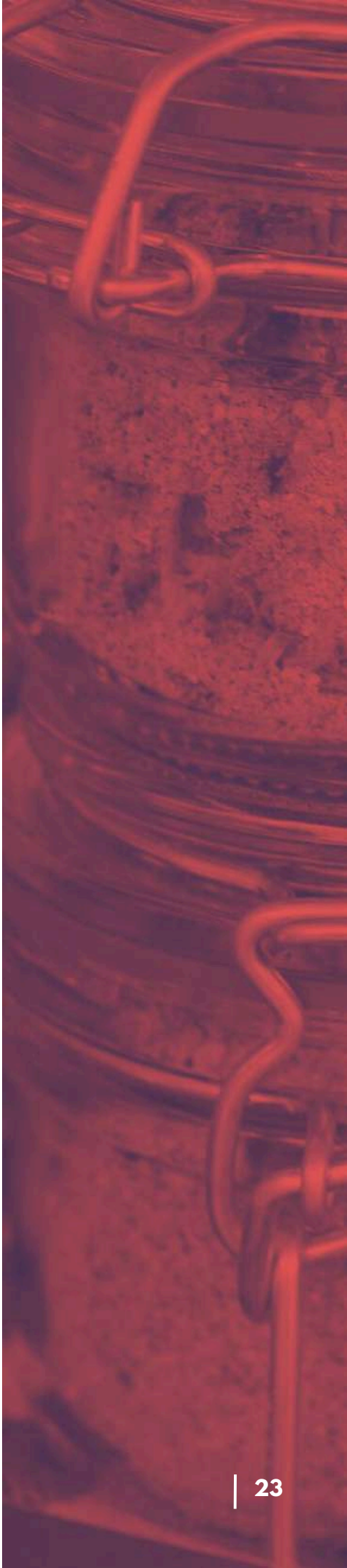
Climate change impacts every aspect of our lives, and building our resilience to the known and unknown impacts today is essential, as has been made evident by the recent IPCC reports. Our ability to feed ourselves is directly threatened by climate change - loss of crops due to droughts, and extreme weather events will increase both in frequency and intensity creating insecurity in our food system beginning at the roots with knock-on effects ending at the dinner table. With the knowledge of the risks posed by climate change and the recognition of the economic and social consequences for the City, the Edible Dublin Food Strategy will focus on the resilience of the City's food system. Considering the full cycle of how food is grown, produced, processed, distributed, consumed and disposed of from a just transition lens.

The City's food system must be resilient, and adaptive in a changing environment for growers, businesses and consumers.

A food strategy is an opportunity for the City to not only address food security but promote local producers to innovate, address food waste management, respond to public health and social issues arising from food access, food deserts as well as reduce greenhouse gas (GHG) emissions. This food strategy will work to develop and support a sustainable food system that ensures the City and citizens' resilience to climate change and its impacts.

A key aspect of enabling the resilience of the food system is engaging with the residents of Dublin City and building a healthy relationship between the food system and those that rely upon it - **us**. This involves gaining a better understanding of how people interact with their food system, what they need for secure access to adequate, nutritious and affordable food while also considering the diversity of cultural needs within the City and the fact that food creates opportunities for connection and building social cohesion.

The overall objective is for this food strategy to guide the implementation of a systems approach to address multiple issues, namely food security, public health, nutritional equity, climate action, biodiversity and social cohesion while contributing to Dublin City's long-term vision, as stated in our Corporate Plan. Building a food strategy that guides our City's food system into a state of resilience has many benefits; strengthening cross-sectoral collaboration; creating a foundation for food retailers to participate in a circular economy; and offering the space for intergenerational knowledge exchange to occur leading to the (re)emergence of ideas that are tried and innovative.



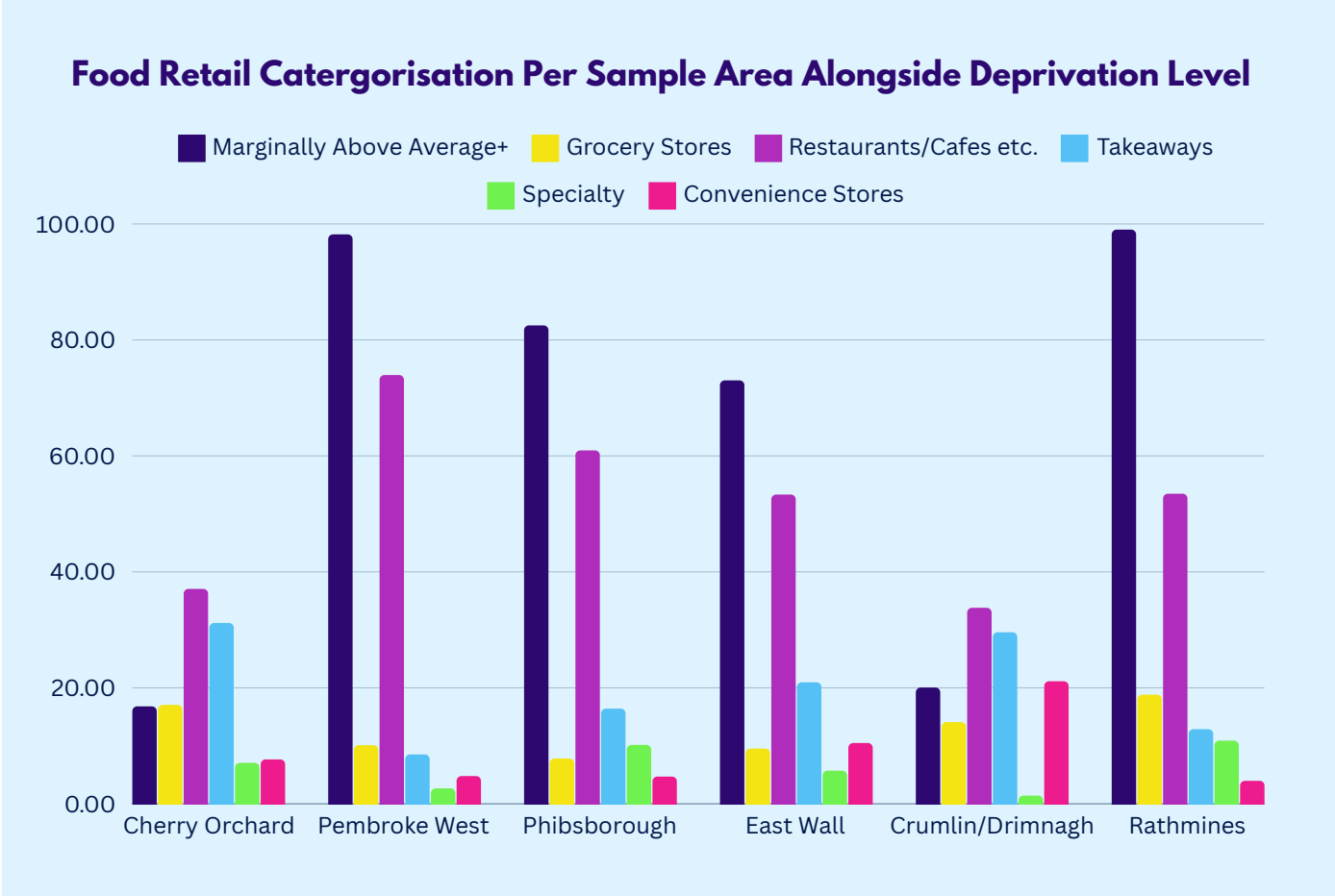
I used to make this quick and easy meal for myself where I cooked a load of mushrooms and spinach in a mix of butter, olive oil and garlic and then ate them on hot buttered toast. I never really watched the quantities and the more butter I added, the more delicious it was. The first time I made it for my boyfriend he looked on in horror as I kept topping up the pan with chunks of butter - eventually he caught hold of my hand to stop me adding yet another lump of butter and whispered 'I want to live!'

Step 2: Our Access

In 2021, to better understand Dublin City's current food systems and the factors that influence the system itself and the consumer interactions with it, exploratory research on 6 sample areas across the City was carried out. The locations were chosen based on their geography, social and economic characteristics as well as their deprivation classification, as analysed by Pobal.

- Cherry Orchard
- Pembroke West
- Phibsborough
- East Wall
- Crumlin/Drimnagh
- Rathmines

The data gathered on the above areas was derived from the *Central Statistics Office* (CSO) and *Pobal* from the 2016 census data on population profiles and deprivation status, family and household statistics, social class, education, means of travel and motor car access. Complimenting this data and expanding on its relevance to food systems, food poverty and identifying food deserts, *Safefood's* research on food poverty indicators and healthy food costs were analysed along with the key findings relating to food, health and education from the *Growing Up in Ireland Longitudinal Study of Children.* In addition to the population profiles of the sample areas, each food system was mapped out alongside public transport routes that service the area. The purpose of this study was to identify whether socio-economic status in Dublin influences access to food.



A key result of the study was the number of takeaways in disadvantaged areas compared to more affluent areas of the City. Overall, there were more diverse food retailers and food service businesses in affluent areas. However, the high number of takeaways in disadvantaged areas surpassed the numbers of takeaways in affluent areas, despite their overall fewer food retailers. As depicted in the above chart. It is very important to note that food system mapping only shows a snapshot in time of our food system and can change from one investigation to the next.

> **Deciding to make a 4-tier replica of my in-laws wedding cake for their 50th wedding anniversary party - frantically hair drying the icing the night before presenting the cake, and being terrified it would keel over in the middle of the photos!**

Step 3: Edible Dublin Survey

The *Edible Dublin Survey* took place in 2022 with the purpose of gaining a greater understanding of how the public interacts with their food system to inform a food strategy for the city.

The survey collected basic demographic information and responses were gathered under the following headings: *Identify the Household Profile, Buying Food, Food at Home – Cooking & Nutrition, Food Waste, Eating Out,* and *Food Awareness*. From here, the data was analysed to identify correlations between the public's interactions with the food system and household socio economic profiles.

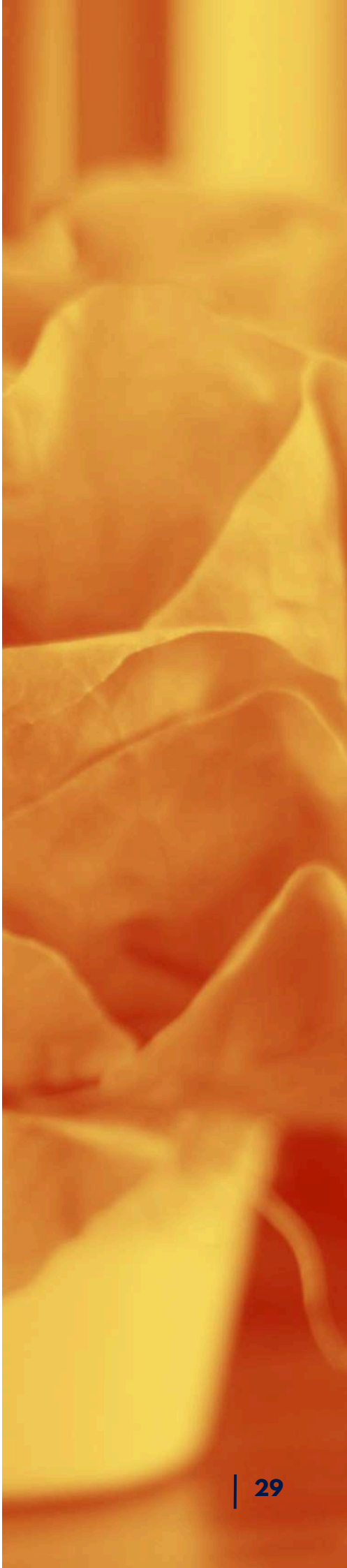
The survey responses analysis and interpretation produced some interesting results:

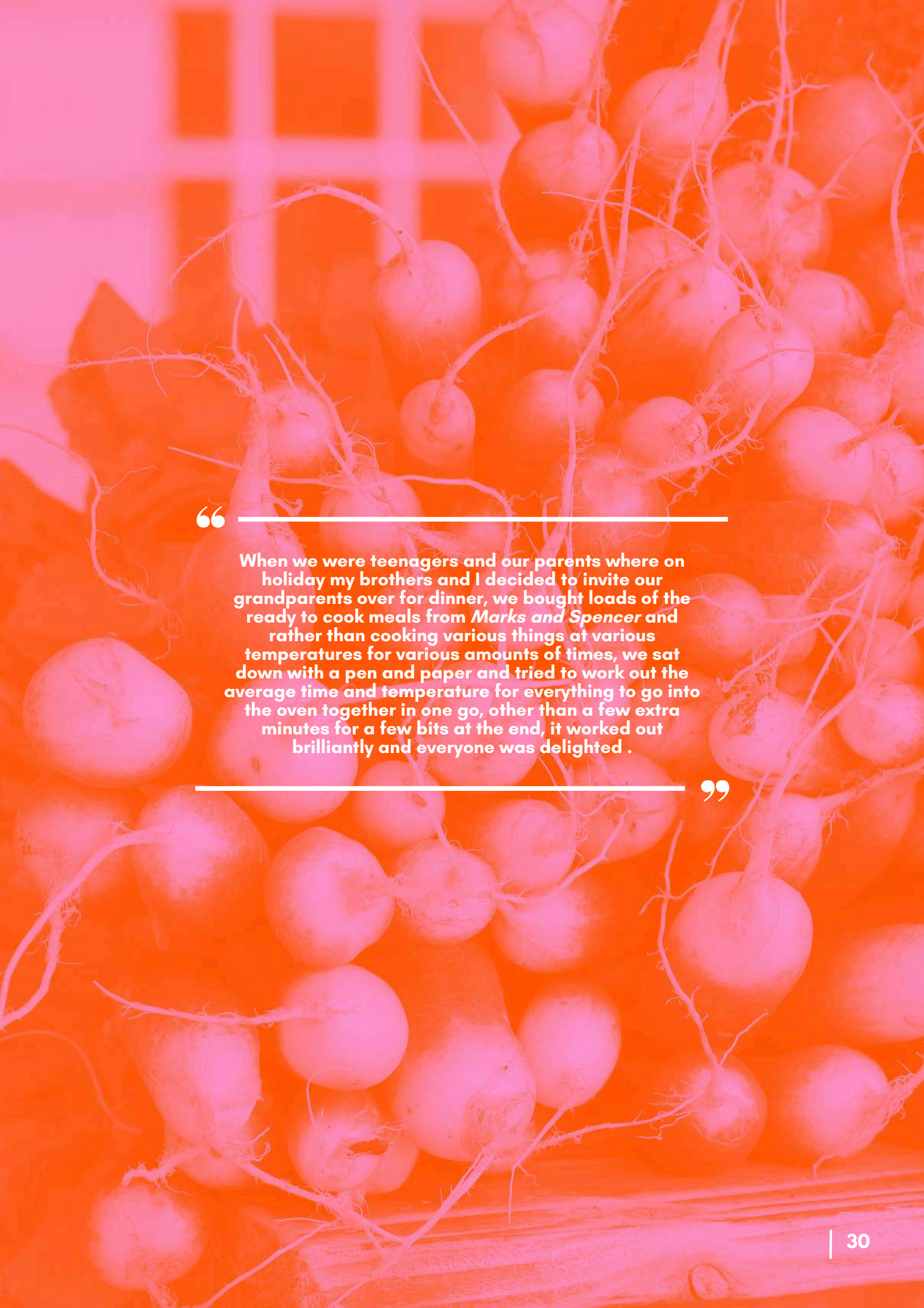
- There was a significant difference in spending on food between the household income categories, however, most respondents devoted 11-15% of their income to food, regardless of the income category.
- Home ownership was associated with spending more on food, however, those that spent more than 30% of their income on food were in the minority among people that rented or owned a residence. Also, homeowners tended to consume more fruits than those that lived in rented accommodation.
- Grocery store, supermarket and local shops were the most common point of food shopping.
- On average, healthy eating was not significantly associated with familiarity with the food pyramid[7]. Also, most respondents perceived foods containing all essential macronutrients as healthy, regardless of income status. Fortunately, fresh products were dominant in the shopping basket of all respondents, regardless of the household income in comparison with ready-made meals.

[7] https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/heal/healthy-eating-guidelines/

- Most respondents used a private car, walked or cycled to do grocery shopping. Among all respondents, the majority did their shopping bi-weekly or weekly, regardless of the transportation type. Respondents that used private means of transportation consumed higher fruit and vegetables per day.
- Most respondents had 0-1 plates of wasted food per day. Among those that owned their accommodation, compost and general waste bin were the most common methods of food disposal, whereas compost and food waste bin had more popularity among those living in rented accommodation.

Overall, the survey received 362 responses, and pointed towards areas needing further investigation. For example, the prevalence of spending 11-15% of the household budget on food warrants a closer look at the whole household budget as the figure alone does not indicate whether this is normal or whether this percentage will decrease indicating hardship. Notably respondents to the survey were in relatively good financial status. Considering rising cost of living, knowledge of how household budgeting changes in response is important for policy. The findings on food waste and accommodation point to further research to investigate how accommodation typologies i.e., house or apartment building, enables waste segregation. The survey has proven to be a needed exercise in sense gathering and demonstrates the need for mapping the landscape of the public's relationship with the food system, with further research required.





> When we were teenagers and our parents where on holiday my brothers and I decided to invite our grandparents over for dinner, we bought loads of the ready to cook meals from *Marks and Spencer* and rather than cooking various things at various temperatures for various amounts of times, we sat down with a pen and paper and tried to work out the average time and temperature for everything to go into the oven together in one go, other than a few extra minutes for a few bits at the end, it worked out brilliantly and everyone was delighted .

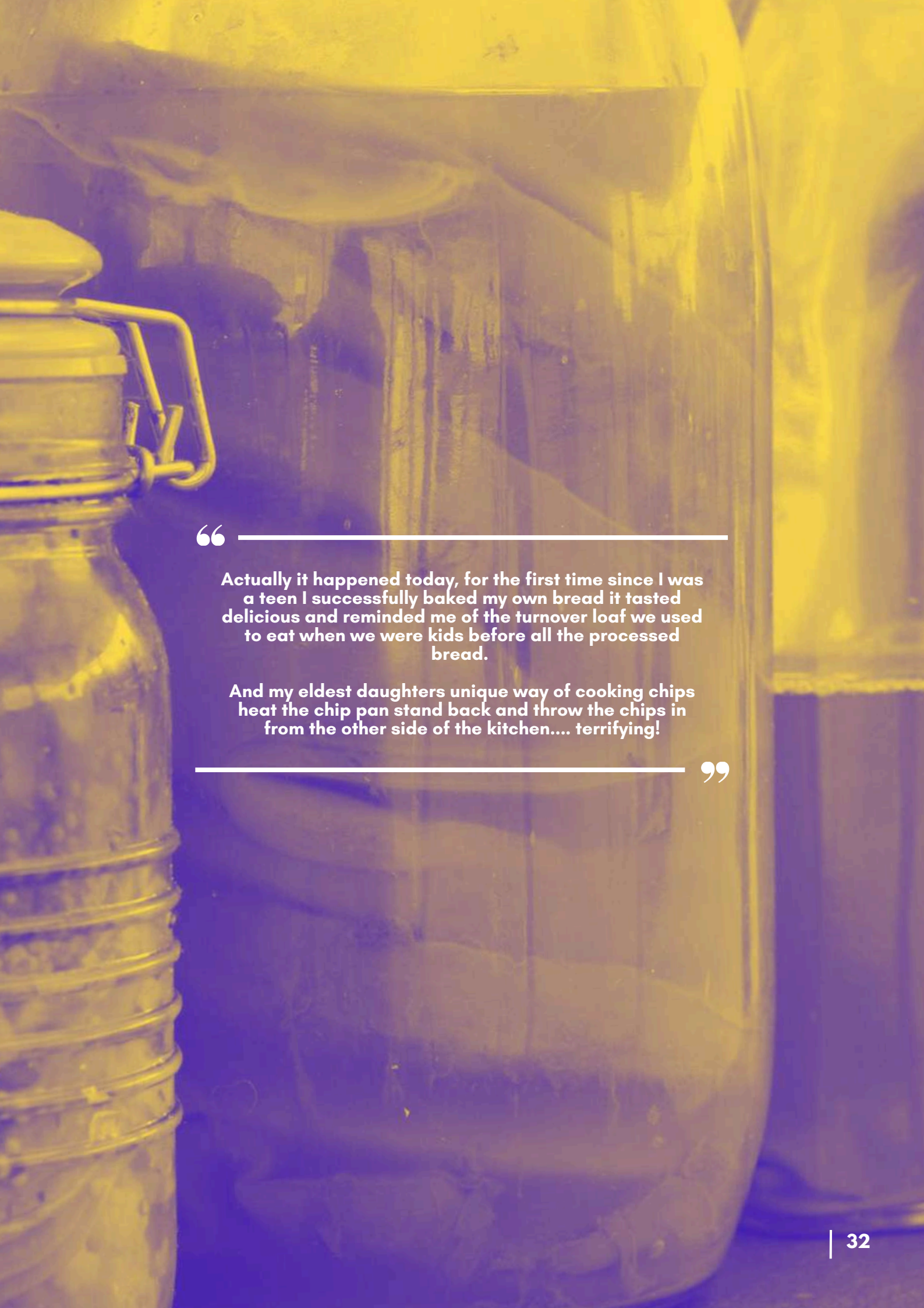
Step 4: Engaging the Public - Eat the Streets!

It is envisaged that *Eat the Streets* will be the educational aspect of the strategy and will be developed in partnership with key stakeholders. The *Eat the Streets! Festival* is essential to engagement on, and implementation of the Edible Dublin: Food Strategy in the long term, specifically as a tool for dialogue with residents of the City.

During the public consultation for the draft food strategy, we asked for inputs from the public, private sector, academia and other government bodies. These inputs were to enable a shared vision for an equitable and climate resilient food system. Implementing actions that respond to the needs of the City's residents. One of the outputs of the public consultation was *how* we should engage the public on the topic of food: co-creation, co-design and consultation. These submissions will be the foundation from which our programme of engagement will be based. Some of the principles and ideas are listed below:

- Work with the existing community groups as well as direct households, ensuring no one is left behind in our food system transition by using local food champions
- Food is social and cultural - community and people will be the focal point of all we do
- Inclusion – engagement will be both in person, online and easily accessible
- Engage with all actors along the food system

https://www.eatthestreets.ie/



Actually it happened today, for the first time since I was a teen I successfully baked my own bread it tasted delicious and reminded me of the turnover loaf we used to eat when we were kids before all the processed bread.

And my eldest daughters unique way of cooking chips heat the chip pan stand back and throw the chips in from the other side of the kitchen.... terrifying!

The Actions

The actions proposed in this plan fall under four interdependent themes: Healthy Citizens, Healthy City; Growing Food Around Us; Cooking, Creating, Discovering; and Farm to Fork and Back – Stopping Food Waste.

Healthy Citizens, Healthy City

Through the *Healthy Eating and Active Living Programme*, people are informed about what is a balanced diet. However, it is not enough to inform people that eating more vegetables and fruits, and limiting the intake of high fat, sugary and salty foods will improve their health.There needs to be policy to guarantee that foods that make up a balanced diet are accessible and affordable, and even then, this is not sufficient.

Providing access to fresh and nutritious food is only part of the solution, the accompanying skills are also essential. There are existing programmes that we intend to build and strengthen to ensure that all residents of Dublin can lead healthy lives in the City. The HSE grants aid agencies in the Dublin region and beyond to deliver nutrition and cooking programmes. The programme is called '*Healthy Food Made Easy*', it is generally targeted at specific groups and run in partnership with established organisations in the community (e.g., mental health and drug recovery groups, parents in school, youth groups).

As part of the *Sláintecare Healthy Community Initiative* and Edible Dublin we want to further expand the reach of the programmes such as *Healthy Food Made Easy*. Successful expansion requires access to suitable kitchens and sustainable funding in areas around the City.

Actions:

1. Work in partnership with HSE, *Healthy Ireland*, and *Safefood* to ensure citizens have access to a community learning kitchen where needed, to engage and to partake in community cooking, skills and nutrition programmes.

- **Establish a formal working group to develop programmes and to identify long term finance options, and for identifying physical sites in areas of deprivation.**

2. Secure access to kitchens that can enable individuals and communities to begin learning the basics of cooking healthy.

3. Develop a home economics programme that empowers individuals and families to save money while eating healthy.

Sláintecare

In partnership with the *Department of Health*, the *Health Service Executive*, Local Authorities and community agencies, *Sláintecare* launched *Sláintecare Healthy Communities Programme.* The programme provides health and wellbeing services in 19 communities across Ireland. Of the 19 communities, 5 are in Dublin City: Ballymun, Finglas, Cabra, Kilmore and Priorswood. Part of the core group of services provided, is the *Healthy Food Made Easy* programme.

This programme is to support and inform healthier diets, by providing nutrition and cookery courses in addition to information sessions on planning meals on a budget and making easy to cook meals.

First Food: Breastfeeding

According to the HSE, breastfeeding is important for both mothers and babies. It contains essential enzymes, hormones and antibodies vital for the baby's normal growth, and good health, tailored to the baby's stage of development. While also supporting mothers' postpartum health.

Working to make Dublin a breastfeeding friendly City can be a positive step in addressing the health of mothers and babies.

Importance of breastfeeding for the baby:

- Breast milk helps to project your baby from illnesses
- It reduces the baby’s risk of an upset stomach
- Breast milk contains hormones that helps babies to regulate their food intake

Importance of breastfeeding for the mother:

- Breastfeeding helps the mother's uterus return to normal size more quickly
- Helps with bonding between mother and baby
- It saves time and money
- It is ready for when the baby needs it, with no need to sterilise

Growing Food Around Us

One way of addressing affordability of nutritious food and greening the City is enabling people and communities to grow at home and in their communities. In doing so, we are also addressing climate change. We know nature-based solutions are essential to adapting the City to known climate impacts, such as heat waves, and flooding. Importantly, Dublin City being an urban environment there is a high rate of soil sealing which results in poor soil health. By identifying opportunities to reduce soil sealing we improve soil health. Planting seeds and nurturing them increases our resilience to climate change, while growing our community ties.

Actions:

4. Expand the availability of community gardens, while exploring the role of social farming and urban food systems – knowledge exchange from rural to urban.

- **Growing can be a collaborative community effort that builds social cohesion for a healthier and happier City.**

5. Introduce libraries that enable more sustainable food practices in households:

- **Seed and seedling libraries in communities to increase biodiversity.**
- ***Library of Things* that include equipment for cooking and growing.**

6. We are responsible for delivering social housing. Over the next ten years we will pilot and implement projects that support growing food in our social housing complexes.

- **Pilot Project: Climate Resilient Housing.**

Kingfisher Project

Located at the Blarney Park Allotments, the *Kingfisher Project* transformed an urban waste ground on the banks of the River Poddle at Kimmage into a community resource for education, knowledge, engagement and social capital building. The project works to enrich the community's relationship with the natural world and build community resilience and capacity to face the consequences of climate change and biodiversity loss.

Bridgefoot Street Park

Bridgefoot Street Park came about as part of a collaboration between the residents of Bridgefoot street and Dublin City Council's Parks, Biodiversity and Landscape Services department. The site was derelict and emerged as a potential park space out of the *2015 Liberties Greening Strategy*. Local community groups started to use the site as allotments and an unofficial play area.

Bridgefoot Street Park is a new one-hectare park space in an area of Dublin City with an extreme deficiency in access to quality green space. At the time of the *Liberties Greening Strategy*, accessible quality public green space in the Liberties was provided at a rate of 0.7sqm per person, which is in stark contrast to an average of 49 sqm/person for Dublin City Council as a whole. The Liberties Greening Strategy projects, including Bridgefoot Street Park, has increased this rate to 1.68sq.m per person.

Bridgefoot Street Park is a response to the EU Waste Framework Directive (2008) and the EU Construction and Demolition Waste Protocol and Guidelines (2018). The park build used waste from construction and demolition, concrete and brick, together with left-over stone and recycled glass, to construct ecologies. The design for the park is a deliberate strategy for manipulating ecological processes on secondary-raw-materials, using a range of by-product materials, to allow beautiful and diverse plant species to colonize the waste with ease. These seeded areas germinate, flower, self-seed and develop a naturalistic landscape which is unique to this park, creating a biodiversity-rich environment for pollinators and wildlife in the City.

Cooking, Creating, Discovering

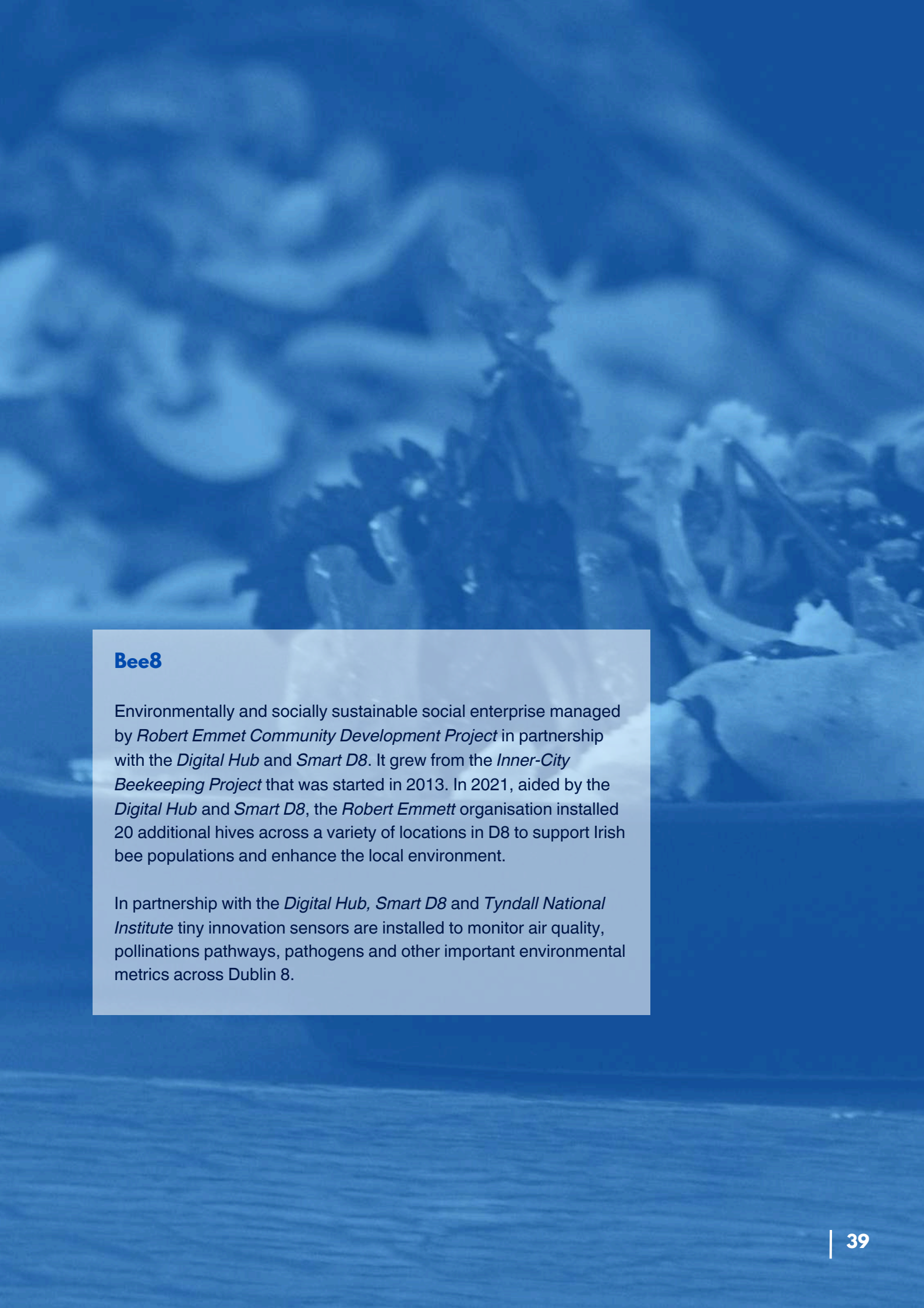
The Beast from the East and Storm Emma brought to the fore the vulnerability of the Irish food system, and more recently the COVID Pandemic has highlighted the delicate balance our food system hangs in and our dependence on foreign labour. A short-term event and a long-term event demonstrate the need for increasing food sector skills and supports for businesses to move away from current supply models.

Actions:

7. Build community wealth through food, in addition to actions in *Healthy Citizens, Healthy City*, we will develop a programme of workshops that explores opportunities along the food supply chain for increasing knowledge in communities of opportunities in the food sector that contribute to making the sector circular, support biodiversity and reduce waste.

8. Support and grow social enterprise initiatives such as *Spade Kitchen*, that enable local food businesses to flourish, and can focus on using Irish produce.

- **Pilot: Green Ballymun Food Hub**



Bee8

Environmentally and socially sustainable social enterprise managed by *Robert Emmet Community Development Project* in partnership with the *Digital Hub* and *Smart D8*. It grew from the *Inner-City Beekeeping Project* that was started in 2013. In 2021, aided by the *Digital Hub* and *Smart D8*, the *Robert Emmett* organisation installed 20 additional hives across a variety of locations in D8 to support Irish bee populations and enhance the local environment.

In partnership with the *Digital Hub, Smart D8* and *Tyndall National Institute* tiny innovation sensors are installed to monitor air quality, pollinations pathways, pathogens and other important environmental metrics across Dublin 8.

Farm to Fork and Back – Stopping Food Waste

With the rise of convenience in the food sector, more people have access to more calories than ever at the touch of a button. This presents multiple, complex and interrelated challenges that this strategy is seeking to address. A resilient, equitable and climate friendly food system would see zero food waste, as such reducing food waste to zero is critical.

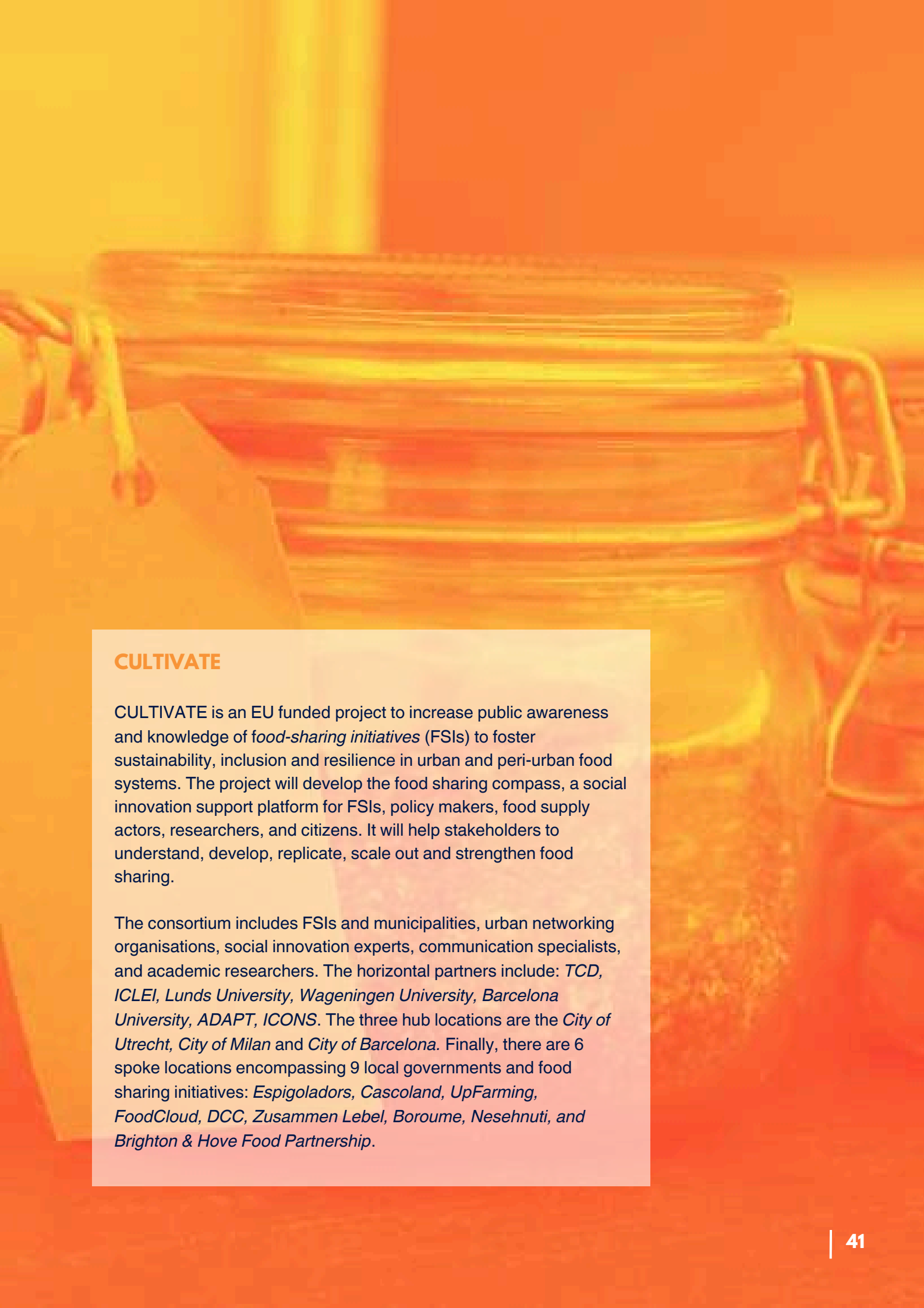
Actions:

9. Support social enterprises that improve access of vulnerable populations to nutritious food while reducing food waste.

10. Making food circular by investigating food composting for restaurants and outdoor markets that is of a high quality and suitable for use on commercial farms, as well as community gardens.

11. Taking from lessons learned and best practice, establish sustainable, organic, growing spaces in the City. A space for food production, community engagement and educational programmes.

12. Increase awareness of our food system through food science – from farm to fork and back again. The where, when, why, what and how of making our food system circular through an *Eat the Streets!* educational programme.



CULTIVATE

CULTIVATE is an EU funded project to increase public awareness and knowledge of f*ood-sharing initiatives* (FSIs) to foster sustainability, inclusion and resilience in urban and peri-urban food systems. The project will develop the food sharing compass, a social innovation support platform for FSIs, policy makers, food supply actors, researchers, and citizens. It will help stakeholders to understand, develop, replicate, scale out and strengthen food sharing.

The consortium includes FSIs and municipalities, urban networking organisations, social innovation experts, communication specialists, and academic researchers. The horizontal partners include: *TCD, ICLEI, Lunds University, Wageningen University, Barcelona University, ADAPT, ICONS*. The three hub locations are the *City of Utrecht, City of Milan* and *City of Barcelona.* Finally, there are 6 spoke locations encompassing 9 local governments and food sharing initiatives: *Espigoladors, Cascoland, UpFarming, FoodCloud, DCC, Zusammen Lebel, Boroume, Nesehnuti, and Brighton & Hove Food Partnership*.

The first time my parents ate a fully vegetarian meal in my house, my dad was so impressed he asked me for my recipe. I bought all the ingredients for him to make in his house, he couldn't believe that he had eaten a vegetarian meal and enjoyed it so much, and that there was no meat in it. While cooking our meal that evening, he slipped out of the kitchen, he was speaking with his brother, telling him his shock at discovering that his favourite meal was vegetarian! Hilarious, my mum and I were in fits of laughter!

Appendices:

Appendix I - Policy and Food

Ireland's food systems are overseen and directed nationally by the *Department of Agriculture, Food and the Marine* (DAFM) via *Sustainable Food Systems Ireland* (SFSI)[8] and the food strategy *Food Vision 2030*[9]. In terms of local crossover between food systems and climate action in Dublin City, is the *Dublin City Development Plan 2022-2028*[10] and the *Dublin City Council* (DCC) Climate Action Plan, *Climate Neutral Dublin 2030*[11].Both documents include goals relevant to the food system and climate action: green infrastructure, waste and resource management, nature-based solutions, circular economy, Eat the Streets and the implementation of this strategy. As well as aligning with the joint goal of the development plan and *Climate Neutral Dublin* to make the City climate resilient.

Food Vision 2030

Food Vision 2030 is the ten-year strategy for the Irish agri-food sector. The vision is for Ireland to be a world leader in Sustainable Food Systems, to deliver benefits for the agri-food sector, the society and the environment. The strategy covers primary agriculture, food and drink processing and manufacturing, fisheries, aquaculture, and fish processing, forestry and the equine, with 22 goals across four high level missions:

- A Climate Smart, Environmentally Sustainable Agri-Food Sector
- Viable and Resilient Primary Producers with Enhances Well-Being
- Food which is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad
- An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent

While the above policies concentrate on food systems and climate resilience (both in the population and the City), the following policies cover food in terms of public health and nutrition:

Healthy Ireland: A Framework for Improved Health and Wellbeing (2013 – 2025)[12]

This framework is a roadmap based around 4 goals that aim to build a healthier Ireland:

1. Increase the proportion of people who are healthy at all stages of life
2. Reduce health inequalities
3. Protect the public from threats to health and wellbeing
4. Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland

The need for this framework lies in the current trajectory of Ireland's population due to lifestyle trends that will cause a costly and unhealthy future. For example, in 2013 it was calculated that by 2020 the incidence of type 2 diabetes and cardiovascular diseases is expected to rise by 20 to 30% (Department of Health, 2013)[13]. Moreover, health is not evenly distributed in society. There is a prevalence of chronic conditions and accompanying lifestyle behaviours which are strongly influenced by socio-economic status. Translating this to health statistics means (ibid):

- Body mass index, cholesterol and blood pressure are persistently higher amongst low-income demographics. Meaning poorer individuals and those with lower levels of education have the highest levels of obesity.
- 9% of 3-year-olds in lower socio-economic groups are obese compared to 5% in higher socio-economic groups (overall, at least one fifth of children in all social

[8] https://www.sfsi.ie/
[9] https://assets.gov.ie/179696/6c6b405e-7c06-4f23-82c0-9edaf7d70a8a.pdf
[10] https://www.dublinCity.ie/residential/planning/strategic-planning/dublin-City-development-plan/development-plan-2022-2028
[11] https://www.dublincity.ie/residential/environment/dublin-city-councils-climate-change-action-plan/dublin-city-council-climate-action-plan-2024-2029
[12] https://www.hse.ie/eng/services/publications/corporate/hienglish.pdf
[13] There is no National Diabetes Registry of people living with diabetes in Ireland. The Irish Longitudinal Study on Ageing (TILDA) 2015 showed that 10% of adults aged 50 and over in Ireland, have type 2 diabetes rising to 16% in those aged 80 and over. 1 in 10 people with diabetes are undiagnosed.

classes are overweight).

- The incidence of heart disease, cancers, type-2 diabetes (including adults, adolescents and children) is set to increase. Obesity is the leading cause of cancer in non-smokers. As stated in the above points, obesity is significantly higher in low-income socio-economic classes, meaning there are greater chances of disease and illness in these demographics.

Healthy Ireland: Obesity Policy and Action Plan (2016 – 2025)[14]

This action plan is the government's response to the high levels of overweight and obesity recorded in the population, with an annual economic cost estimated at €1.13billion. The plan encompasses a cross-sectoral approach that acknowledges the shared agendas between policy areas such as education, employment, transport, environment and social protection in addition to highlighting the economic and societal benefits of addressing health of the population: protect and maintain health, prevent illness and intervene early (Department of Health, 2016).

[[14] https://www.hse.ie/eng/services/publications/corporate/hienglish.pdf

Appendix II - Dublin City Council's Remit

Local

DCC Corporate Plan[15]
The DCC vision is a dynamic, sustainable City that is future-ready, with a mission to drive the sustainable development of the City and promote the well-being and quality-of-life of citizens and communities. Guiding DCC are principles of commitment to excellent public service, sustainability, leadership, ambition, fairness and accountability. In addition to DCC's vision, mission and guiding principles, the City shares a blueprint with the SDGs to create a sustainable City into the future.

Climate Neutral Dublin 2030
The food strategy aligns with the plan's key targets:

- A 51% reduction in greenhouse gas emissions in line with our National Climate Objective by 2030, while striving for neutrality before 2050 as per Dublin City's participation in the EU Mission for 100 Climate Neutral and Smart Cities (Net Zero Cities).
- A Climate Resilient City prepared for the known and unknown impacts of climate change.
- A Just Transition meaning that the actions we take do not cause harm.

It does this by addressing resilience in the food system and in the population, sustainability in the food system from production to the dinner table and beyond, and acts as an awareness tool to engage the public with climate action using the interconnectedness of food. Solutions to which align with Climate Neutral Dublin's four foundations:

-A Resilient City
-A Resource-Full City
-A Creative City
-A Social City

Specifically, action R4, the implementation of this strategy and the adjoining projects: R4.1 *Establish Eat The Streets Programme* and R4.2 *Implementation of Markets Strategy*

Dublin City Development Plan 2022-2028
The main strategic approach is to develop a City that is low carbon, sustainable and climate resilient, establishing a City with an international reputation as a city region that is one of Europe's most: sustainable, dynamic and resourceful cities.

Dublin City Biodiversity Action Plan 2021-2025[16]
The action plan follows 6 themes that are intended to guide biodiversity conservation across the City. The food strategy has the potential to align with and support all 6 of these themes: Maintaining Nature in the City; Restoring Nature in the City; Building for Biodiversity; Dublin as a Green Capital; Understanding Biodiversity in the City; Partnering for Biodiversity. These themes have been structured to address, in terms of biodiversity, understanding and safeguarding; reducing impacts; fostering a clean and safe environment; education and public engagement.

In line with DCC's ongoing biodiversity actions, DCC is currently working on the following greening strategies:

- The Liberties Greening Strategy[17]
- North East Inner City Greening Strategy[18]
- Stoneybatter Greening Strategy[19]

[15] https://www.dublinCity.ie/sites/default/files/2020-06/dublin-City-council-corporate-plan-2020-2024.pdf
[16] https://www.dublinCity.ie/sites/default/files/2022-07/dcc-bioap-2021-2025-webv_21.07.22.pdf
[17] https://www.dublinCity.ie/sites/default/files/2021-02/liberties-greening-strategy_0.pdf
[18] https://www.dublinCity.ie/sites/default/files/2021-02/neic-greening-strategy.pdf
[19] https://www.dublinCity.ie/sites/default/files/2021-02/stoneybatter_greening_strategy_document.pdf

Local Economic and Community plan 2023-2028[20]

The LECP 2023 – 2028, for adoption in 2024, will set out the City's strategic goals for the City's local economy and community development, alongside yearly action-led implementation action plans. The focus of the LECP is on social and economic issues and goals that can be addressed by the City Council, local businesses, community and voluntary organisations and state bodies. The LECP is a key framework[21] through which climate action interventions can be delivered.

Regional

National Waste Management Plan for a Circular Economy 2024-2030[21]

Under the Waste Management Act, the Local Government Sector has prepared the National Waste Management Plan for a Circular Economy. This combined plan will replace the three regional plans. The plan will cover the period 2024-2030, setting out the framework for adopting 0% waste growth, reducing waste from households and businesses. The plan encompasses a collaborative approach, contributing to Ireland climate targets, with the co-ownership highlighted in the plan emphasising the required contribution of all stakeholders.

National

LGMA: Delivering Effective Climate Action 2030[22]

The mission is for local government "to deliver transformative change and measurable climate action across our cities and counties and within our own organisations, through leadership, example and mobilising action at a local level".

All-Ireland Pollinator Plan (2021-2025)[23]

The plan encourages a better way of managing our whole landscape to permanently support our struggling biodiversity. Pollinators ensure pollinated crops, fruits and vegetables, operating an ecological service that is essential to human life and our ability to grow food.

Waste Action Plan for a Circular Economy[24]

The plan commits to halve our food waste by 2030, waste segregation infrastructure for apartment dwellers and sustainable food management options for all homes and businesses.

National Food Waste Prevention Roadmap[25]

This roadmap sets the path for Ireland's response to food waste, bringing forth action on food waste prevention across all key sectors in the food supply chain, including primary production, to reduce food waste by 50% by 2030.

European

Common Agriculture Policy (CAP)[26]

There are five aims of the CAP:

- Support farmers and improve agricultural productivity, aiming to secure a stable supply of affordable food.
- Farmers to make a reasonable living.
- Support agriculture in its role in climate action and the sustainable management of natural resources
- Maintain rural areas and landscapes
- Protect and promote the rural economy

[20] https://consultation.dublinCity.ie/culture-recreation-and-amenity/local-economic-and-community-plan-2023-2029/supporting_documents/LECP%20Consultation%20Doc%20Final.pdf
[21] https://www.mywaste.ie/pre-draft-consultation/
[22] https://www.lgma.ie/en/publications/local-authority-sector-reports/delivering-effective-climate-action-2030.pdf
[23] https://pollinators.ie/wp-content/uploads/2021/03/All-Ireland-Pollinator-Plan-2021-2025-WEB.pdf
[24] https://assets.gov.ie/86647/dcf554a4-0fb7-4d9c-9714-0b1fbe7dbc1a.pdf
[25] https://www.gov.ie/en/publication/824c3-national-food-waste-prevention-roadmap-2023-2025/
[26] https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-glance_en

EU Child Guarantee

The Child Guarantee, adopted by European Council in June 2021, calls on Member States to guarantee for children in need, and to ensure effective access to healthy nutrition, a healthy meal each school day and adequate housing (European Commission, 2021).

International

Universal Declaration of Human Rights (Article 25)

The *Universal Declaration of Human Rights* (UDHR) was adopted by the UN General Assembly in 1948 and laid the foundations for international human rights law (House of the Oireachtas, 2016). Article 25 of the UDHR relates to the right to food.

Following the UDHR, the UN has nine core human rights instruments, Ireland has ratified six of these. Relevant to the right to food is the International Covenant on Economic, Social and Cultural Rights.

Article 11 (United Nations General Assembly, 1966):

- "The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food [...]. The States Parties will take appropriate steps to ensure the realization of this right [...]"
- (a) "To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources"

While Ireland has ratified 6 of the human rights instruments, the above being ratified in December 1989, none have been incorporated into domestic law. However, under international law Ireland is obliged to respect the terms of human rights treaties (House of the Oireachtas, 2016).

Sustainable Development Goals

The SDGs act as a blueprint for "peace and prosperity for people and the planet, now and into the future". As mentioned previously, DCC's corporate goals align themselves with the SDGs. They encompass a systems approach to ending poverty, improving health and education, reduce inequality, enable economic growth, all the while tackling climate change and working towards the preservation of our green and blue spaces. This systems approach is housed in goal 17, partnerships for the goals. Ultimately, the SDGs represent leverage points in a complicated system. While the below goals are the most prominent SDGs in the food strategy, all SDGs are relevant.

Goal 2: Zero Hunger
Goal 3: Good Health and Well-Being
Goal 5: Gender Equality
Goal 10: Reduced Inequalities
Goal 11: Sustainable Cities & Communities
Goal 12: Responsible Consumption and Production
Goal 13: Climate Action
Goal 14: Life Below Water
Goal 15: Life on Land
Goal 17: Partnerships for the Goals

All the above supports and offers DCC the remit to develop a food strategy, addressing climate action as well as additional municipal concerns: public health, biodiversity, equality and community engagement. Contributing to the development of a sustainable and resilient City.

Appendix III – Justification: Food Insecurity and Nutritional Equity

The *Department of Health*'s national healthy eating guidelines '*Healthy Food for Life*' has 3 key messages:

1. Limit high-fat, sugar, salt foods (HFSS) and drinks from the top shelf of the food pyramid
2. Eat more vegetables, salad and fruit - up to 7 servings a day
3. Size matters - use the Food Pyramid as a guide for serving sizes

A dietician with the *Irish Heart Foundation* (Orna O'Brien) has commented on food access saying, "Many low-income families are forced to buy cheap foods that are usually nutritionally poor but calorie-dense".

The risk of food poverty rate in Ireland in 2018 was 8%, with the highest rate spiking at 8.8% in the Eastern and Midlands Region (CSO, 2019). Under Goal 2 (Zero Hunger) of the SGDs, the Irish Government is obligated to document and report on factors relating to food insecurity, undernourishment and malnutrition in children under the age of five. In terms of malnutrition in children as a global indicator, it is not classed as a significant problem in Ireland and therefore this indicator is only measured with an assessment of overweight and obesity in pre-school children. The most recent report of this indicator shows that at age 3, 19% as overweight and 5% had obesity. At age 5, 15% as overweight and again a further 5% had obesity (CSO, 2019).

In the index created and used to assess Ireland's SDGs (Murphy, Walsh & Murphy, 2023)[27], the indicators mentioned above were ranked across the EU 28[28]. Ireland ranked as a best performer (more than one country can hold a ranking), in the SDG indicators for undernourishment and food insecurity, and ranked 3 in prevalence of stunting (ibid).

Relevant to the statistics on food poverty, the study ranked Ireland as 11th in the indicator of food price anomalies which measures food price volatility.

Good nutrition is not only essential for child development, but this continues into adulthood and continued health and wellbeing, not to mention the overall populations (gender and age inclusive) ability to withstand shocks to the system (both within themselves and externally in their environments). Children require nutrient-rich diets that are essential for them to grow, learn, play and engage. Malnutrition in Ireland, according to the data, manifests in overweight cases. The global food system has seen a shift with increased consumption of processed foods high in fat, sugar and salt, seen first in high-income countries in the 1950s but after the globalisation of the food system in the 1970s onwards, highly processed foods have become more readily available (Baker et al., 2020). Less visible forms of malnutrition such as "hidden hunger", which is a deficiency in essential vitamins and micronutrients, can occur as a result of consuming an energy-dense but nutrient-poor diet (Lowe, 2021; Gödecke, 2018). Micronutrient deficiencies can affect growth, immune systems and brain development, highlighting the essential differentiation between consuming enough calories to replenish expelled energy and eating the right foods to meet your body's nutritional needs. This can in turn cause reduced educational outcomes, reduced work productivity and increased health risks (WHO, 2021a).

[27] https://journals.plos.org/sustainabilitytransformation/article?id=10.1371/journal.pstr.0000082
[28] The study was carried out prior to Brexit and so the rankings are across the Pre-Brexit EU 28 rather than Post Brexit EU 27

Safefood produced a set of food poverty indicators both for individuals and households (Carney & Maître, 2012).

- Can't afford a meal with meat or vegetarian equivalent every second day
- Can't afford a weekly roast dinner or vegetarian equivalent
- Missed a meal in the last two weeks due to lack of money

Under these indicators *Safefood* has calculated 1 in 10 people in Ireland (Island of Ireland) are living in food poverty (ibid). The vulnerability to food poverty increases under the below household compositions (Safefood, 2012);

- 18% if household is on low income
- 18% if three or more children are under 18 in household
- 21% if head of household is ill/disabled
- 23% if lone parent with 1+ child
- 23% if head of household is unemployed

A study has found that low-income households compromise on food as it is "the elastic item in the budget" (Caraher & Furey, 2021). The manifestation of that can be parents serving smaller portions to their children, skipped meals or going an entire day without a meal.

The *Safefood* report *"What is the cost of a healthy food basket in Republic of Ireland in 2020?"* found that families on low incomes need to spend up to one third (35%) of their weekly take home income to afford a healthy diet, highlighting the challenge many families face in balancing the cost of a healthy, nutritious diet with other essential household expenses (Safefood, 2021). In terms of public health, low-income households typically tend to eat less well, which contributes to higher levels of excess weight and corresponding health complications like heart disease and type 2 diabetes (Shannon, 2021), as described in relation to *Healthy Ireland.*

Overall, there is a lack of nutritional data collected in Ireland, in particular region-specific data which can help government and health services to target responses. Currently, nutritional and dietary data is collected by age group, by *Irish Universities Nutrition Alliance* (IUNA). While this data helps to target advice towards different age groups regarding nutrition, it is unable to give location specific data which will help tie food access and nutrition to socio-economic and lifestyle factors, in which local governments can better plan their jurisdictions to best serve their public. Those with lower incomes are more likely to eat less well which in turn contributes to weight gain and health burdens like heart disease and type 2 diabetes. Like nutritional data, disease data is also not region specific, if recorded at all, which limits the ability to tie access to food with location and subsequent health consequences.

In 2016, the *Vincentian Partnership for Social Justice* (VPSJ) established the *Minimum Essential Budget Standards (MEBS) Research Centre.* MEBS focuses on the expenditure and income required for individuals and households to have a *Minimum Essential Standard of Living* (VPSJ, 2022), the only organisation carrying out this work in Ireland (ibid).

It is also important to note, food is not just a nutritional requirement for human health and wellbeing, and it also plays a leading role in social and cultural participation (Davies et al., 2012; Safefood, 2012; DSP, 2021). Therefore, food poverty does not only eclipse the inability to access healthy and nutritious food but also partake in its social aspects. As evidenced by

the Government of Ireland's poverty indicator index. Updated in 2007 to better reflect current living standards, and to include social inclusion and participation in society (Department of Social Protection, 2019). Currently, the Government measures consistent poverty based on lacking two or more items from an 11-item index, out of the 11 items the below 4 relate to food:

- Eat meals with meat, chicken, fish or vegetarian equivalent every second day
- Have a roast joint or its equivalent once a week
- Have family or friends for a drink or meal once a month
- Have a morning, afternoon or evening out in the last fortnight, for entertainment

While food banks represent immediate relief, they do not represent a long-term or viable solution to food insecurity (Caraher & Furey, 2019). As seen in the Belo Horizonte case study (p.52), addressing food insecurity requires a systems approach with long-term commitment in securing the population's food access. Food banks were born from necessity in alleviating hunger in the short term. However, Ireland lacks a national infrastructure for commercial food donations and food banking (Weymes & Davies, 2018). Until *FoodCloud*'s inception in 2013, *Crosscare* was the sole food distributor to food banks operating in the Dublin region. *FoodCloud* has overcome, using technology, the barriers previously blocking local charities to access and build relationships with large retailers at corporate levels (ibid).

According to the *Food and Agriculture Organization* (FAO), the world produces more than 1 ½ times enough food to feed everyone on the planet (Holt-Gimenez et al., 2012). Unfortunately, there are still 8.8% of the Dublin region at risk of food poverty (CSO, 2019), with over 1 million tonnes of food wasted a year in Ireland (EPA, 2021). Food redistribution can play a vital role in alleviating food waste and food poverty.

COVID and Food

The Covid-19 Pandemic has exacerbated many issues surrounding people's access to food. In turn, pop up food banks have been established as well as increased operations of existing food charities to meet the high demand for food. *FoodCloud* reported "an unprecedented increase" in demand for food in food banks (FoodCloud, undated) due to increased unemployment, access to food became a challenge, schools closed and many charities that provided meals closed (ibid). In May 2020, *FoodCloud* was distributing food to more than 400 bodies, supplying food to 32 new charitable efforts since March 2020, with a waiting list of 55 (Holland, 2020).

In response, local networks were banded to fill a gap. For example, *Kilmainham Inchicore Network* (Kin), *St. Patrick's Athletic FC, Frontline Make Change* (a local addiction service) and *Dublin South City partnership* worked together to provide food parcels to vulnerable members of the community, approximately 190 food parcels a week (ibid). Food was supplied through *FoodCloud* and non-perishable donations were collected through the St. Patrick football grounds.

The *Ballyfermot Chapelizod Partnership* (BCP) supplied food services to over 1000 families, as of May 2020 after being founded in March 2020 (Irish Local Development Network, 2020). There were 1,935 deliveries of essential food and self-care products and 1,720 deliveries of school meals in 8 weeks to over 1,000 families (ibid). BCP serviced the wider Ballyfermot area prioritising the needs of older people, those with underlying conditions, those with Covid-19, lone parents, vulnerable families and others experiencing financial or personal challenges.

At the beginning of the pandemic, a range of agencies came together to create a network that operates an integrated approach in order to avoid duplication. BCP led the community response in collaboration with DCC, *St Vincent De Paul*, the local Gardaí, *De La Salle GAA Club* and local organisations such as *Familibase, Ballyfermot Star, Ballyfermot Advance* and *Ballyfermot Youth Service* (ibid). Weekly supplies were donated by *Glanmore Foods, Musgraves, FoodCloud, St. Dominic's Shopping Centre* in Tallaght, local Ballyfermot grocery store *Coyle's* and *Cheevertown House* in Templeogue (ibid).

Lessons from Belo Horizonte

Belo Horizonte is Brazil's sixth largest City, with a population of 2.5 million people. However, the Belo Horizonte Metropolitan Region comprises urban and rural areas with a total population of 5.7 million people, the third largest urban agglomeration in Brazil (FAO, 2015).

In 1993, the Brazilian movements "*Movement for Ethics in Politics*" and "*Citizen Action against Hunger, Poverty and for Life*" emerged and mobilised 30 million people, leading to the newly elected Belo Horizonte Mayor, Patrus Ananias creating a *Secretariat for Food Policy and Supply* (World Future Council, 2020). This was the start of a multi-stakeholder, participatory and multi-level approach in a comprehensive food system security policy and programmes, which brought the Right to Food into law. A *Sub-Secretariat for Food and Nutritional Security* coordinates different programmes and partnerships with other relevant departments, health, education, parks and spaces, waste etc under a holistic approach. Some highlights of the *Food Security Programme* include (WWF, 2014; FAO, 2015; World Future Council, 2020):

- Direct supply of food to the population through subsidized food sales in certain popular restaurants, with the purpose of serving nutritious food to all. In addition, the programme caters directly to disadvantaged communities through food vans.
- There is also a network of direct supplies of food through school meals, day-care centres, health clinics, homeless shelters, nursing homes and other social assistance organisations, which includes the distribution of fresh fruit and vegetables from markets and stores to food banks.
- A programme to provide nutritious supplements to families whose children show signs of malnutrition.
- Food markets throughout the City are regulated and the City has introduced food outlets which are licensed to private operators under the agreement that a selection of 25 quality-controlled products are sold at set prices – about 20-25% below market prices.
- The City facilitates direct trade between producers and consumers at fixed sale points with regulated quality and prices.
- The City also keeps the public informed on the lowest prices of a list of 45 basic household items.
- Through the support of the City with urban agriculture, there has been over a hundred community and school gardens established.

The Belo Horizonte food system security programmes has almost eliminated hunger, reduced poverty, and created price stability, promoted sustainability in urban and local agriculture – the success of which is evident in the health of its population; within the first ten years of the programme child mortality reduced by 60%, child hospitalisation for malnutrition by 75% and poverty by 25% (WWF, 2014). The success seen in Belo Horizonte led to the programmes replication for all of Brazil, which induced similar policies at state and national levels, starting with the nationwide *Zero Hunger Programme* in 2003 (World Future Council, 2020).

Appendix IV - Mitigation, Adaptation, Climate Resilience and Food

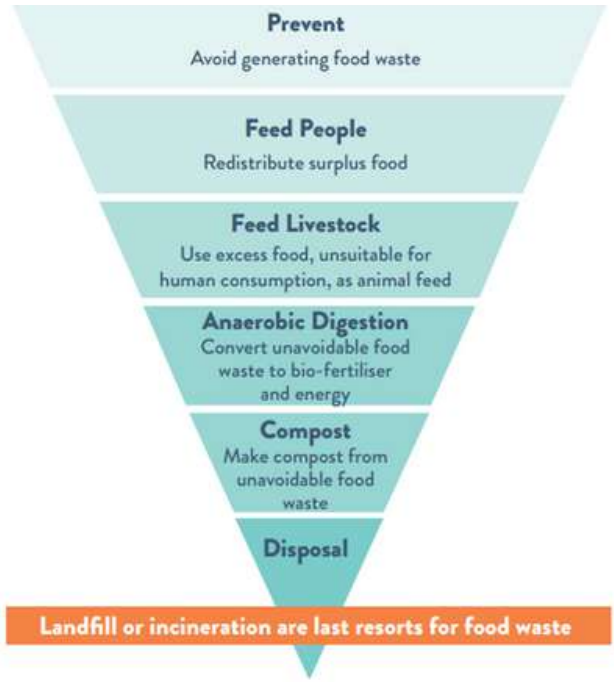
Mitigation

Food waste is one of the clear ties between the food system and climate action (although there are many linkages!). As stated, Ireland wastes over 1 million tonnes of food a year; globally one quarter of all food produced is wasted.

- Household waste: 250,000 tonnes (each household 150kg a year, equivalent to €700)
- Commercial sector waste: 303,000 tonnes
  - Retail and distribution: 100,000 tonnes
  - Restaurants and food services: 203,000 tonnes
- Primary production: Currently unknown how much food is wasted at primary production level. However, the *National Food Waste Prevention Roadmap* is addressing this data gap and is setting out a pathway for measuring food waste at this level.

In terms of climate, food waste contributes to 8-10% of all global anthropogenic GHG emissions (ibid). This wastage is compounded by all of the embedded resources wasted in the process, land, water, fertilizers, fuels used in growing, harvesting, processing, packaging, transporting and storing food. Further, disposed of food and packaging requires correct segregation, collection and processing, which consumes resources. Adding to this, 406,000 tonnes of food waste is not being segregated for collection, instead it is being disposed of in general waste and recycling bins (ibid). Food waste disposed of in landfills releases methane, a potent GHG. According to the *National Waste Prevention Programme* (NWPP), food waste should be prevented at all stages of the food system, and in the case of unavoidable waste arising it should be disposed of in the most resource efficient way possible.

"Food waste prevention is the climate action we can take 3 times a day".



Source: EPA (NWPP), 2021. Food Waste Prevention

Adaptation

The food system has many ties with climate action beyond mitigation. The last few years have seen many unprecedented times, specifically extreme weather like Storm Emma/Beast from the East, Storm Ophelia, and the Covid-19 Pandemic. Each of these examples had an impact on our access to food, albeit in different ways. Raising the concern, of whether our food system is adaptable to climate change.

These extreme weather events raise three overall concerns of adaptation gaps. 1) The inability to move – both supplies and people – leading to shortages, 2) our skills as a population to withstand shocks such as these, specifically cooking and food skills (to prevent stockpiling goods) and 3) supermarkets capacity to meet demand as their current lean and agile model, meant to lower cost and waste, prevents increased orders to meet demand prior to times of reduced access. Climate change is set to increase the number of extreme weather events we experience and currently our food system is dependent on our ability to access food 24/7, both as consumers and supermarkets being supplied daily.

Besides instances of extreme weather, the food systems dependence on a functioning global supply chain leaves it open to vulnerabilities and shocks. An example of such a shock, is how the Covid-19 pandemic exasperated underlying supply chain vulnerabilities; global shortages of materials, staff shortages and transport delays occurred in conjunction with increased demand in goods (Harapko, 2021). The imbalance of high demand and disrupted supply caused higher transport costs.

For Ireland, these disruptions caused longer delivery times and missing items from our supermarket shelves. For the food rescue and redistribution industry this meant that in a time where there were increased demands and need for free food, the surpluses that arose along the supply chain occurred at different stages and with increased volatility (FoodCloud, undated), making forecasting extremely difficult. *FoodCloud* reported, 300k surplus in easter eggs, 20 tonnes of surplus turkey (4 times greater that recorded 2019 surpluses) and pallets of eggs for catering due to hospitality closures (ibid).

If a food system interacts and depends on global supply chains, disruption to supplies is mitigated as alternative sources are nearly always available. However, if there are disruption to particular points in the complex logistical network, for example access to fuel, the whole system can be affected with visible cracks, raising questions on the food systems adaptation gaps. The scenarios presented here have shown the possibility of unprecedented events impacting our food systems and brings into question our adaptability to such events in the future. It should be noted that while the above is speaking to past experiences of how and to what extent food supply chains are disrupted – supply versus the network – that being a food system can technically survive if there are disruptions to supply because there are so many options/alternatives but if the supply chain itself is disrupted – that is when the adaptation gaps are currently felt. However, what happens when climate change systematically effects supply to a degree that true shortages are felt along the global supply chain? Currently we only experience the shocks of disrupted logistics (and skill deficiency), that may not always be the case.

Lessons from the Netherlands (Brons & Werthein-Heck, 2021)

A recent examination of the Netherlands food system during the Covid-19 pandemic discussed the tensions between resilience and sustainability alongside shorter supply chains and nutrition.

During the onset of the Covid-19 pandemic, in Spring 2020, Dutch supermarkets experienced regularly empty shelves due to consumers stockpiling, barriers to international trade and impacted sectors all greatly impacting supply and demand. The pandemic raised the question of whether the Dutch food system is resilient enough to withstand shocks and continue to provide healthy and safe food, on top of the existing sustainability challenges.

In the case of the Netherlands lockdown, resilience was about solving acute, tangible and specific problems in the supply chain while sustainability requires a longer-term transition via a systemic approach within international networks. This case study explored the tension between national and international solidarity, between acute and longer-term needs, and between perspectives of the food system as a linear chain compared to a complex, interlinked system.

Two common resilience strategies discussed are surplus and diversity. For food supplies this could mean increasing the number of shipments or increasing the supply quantities (surplus) or you can activate multiple supplier options (diversity). However, both strategies appear inefficient from a sustainability perspective as they result in high resource use.

Dutch food systems are heavily depended on global supply chains, with the average Dutch meal travelling around 33,000km before reaching consumers. Due to the pandemic, restaurants closed, people shopped less and produce choice changed to increases in bulk buying products with long-shelf life; while supermarkets experienced bare shelves, local food producers were without customers because of the closure of the catering industry. Motivated by sustainability, Dutch cities tried utilising regional food supply chains for example, Almere's "*Support Your Locals*" initiative, which offered food packages from local food producers. The campaign was not only born from the necessity of reducing waste, supporting local producers and meeting consumer demand but also to promote sustainability, operating shorter supply chains and raising awareness among the public on food production, health and fair prices for local production. Despite these intentions, the shorter supply chains did not ensure or contribute to health or sustainability, according to the examination. The composition of the *Support Your Local* food boxes varied depending on the participating food producer. For example, the Amsterdam "*borrelbox*" mostly contained beer and sausages. That is not to say that the majority of the food boxes contained a lot of fresh produce.

Reworking food systems to increase the inclusion of local food should also take into account international solidarity due to the current 'borderless' nature of many food systems both in the production and consumption of food. Considering the above argument that shorter supply chains do not necessarily equate to healthier and more sustainable food systems, food systems need to be evaluated in the context of what can be produced domestically and which products need international supply chains. The examination concludes that achieving the transition to a sustainable and resilient urban food system requires diversity in production and consumption chains, system approaches and international solidarity.

Climate Resilience and the Food System

Growing Food: Climate Change Impacts on Agriculture

The changing climate will have an impact on agriculture, which in turn impacts, not only our domestic food growth but food growth globally. Considering the globalised food supply chain, impacts on agriculture in one country can impact food supplies in another. The EPA's climate projections for Ireland indicate increases in temperature, heatwaves, heavy precipitation and dry periods/droughts in addition to decreases in frost and ice days – all of which will have direct and substantial effect on agriculture in Ireland by 2050 (Nolan and Flanagan, 2020). These changes hold some positive opportunities for farming, with extended growing and grazing periods however in the wider context of climate change and its impacts on agriculture, these positive opportunities are weighed against future obstacles. For example, the projected increased frequency of drought, heavy rainfall events and the expected warmer and drier Summers may bring water shortages and animal heat stress. In addition to more frequent extreme weather events causing fodder shortages and damaged infrastructure, as was seen during Storm Emma/Beast from the East. For Ireland, the cost of climate change impacts on agriculture have been estimated at between €1 billion and €2 billion per year, not including the cost of damages caused by flooding which is estimated at €1 billion per year (McDermott, 2016).

Growing Food: Irish Agriculture Land Uses

There are approximately 135,037 farms in Ireland covering 4,509,256 ha total agricultural area with pasture-based farm enterprises holding the majority (4,151,456 ha) due to the favourable climate supporting rich grass growth 9 to 10 months of the year. 82.1% of agricultural area utilised is under grassland (CSO, 2021a) and 59.3% of total land use in Ireland (CSO, 2021b). The remaining land use is split between cereals (256,592 ha) and other crops, fruit and horticulture (92,208 ha) (ibid). There are approximately 4,500 ha of vegetables with a farm gate value of €73 million grown annually (harvested every week of the year) (Teagasc, 2019). Ireland produces half of its vegetable supply as the climate does not offer itself to all-year-round production. The majority of vegetables are grown conventionally but there is an increasing acreage of organic production (ibid).

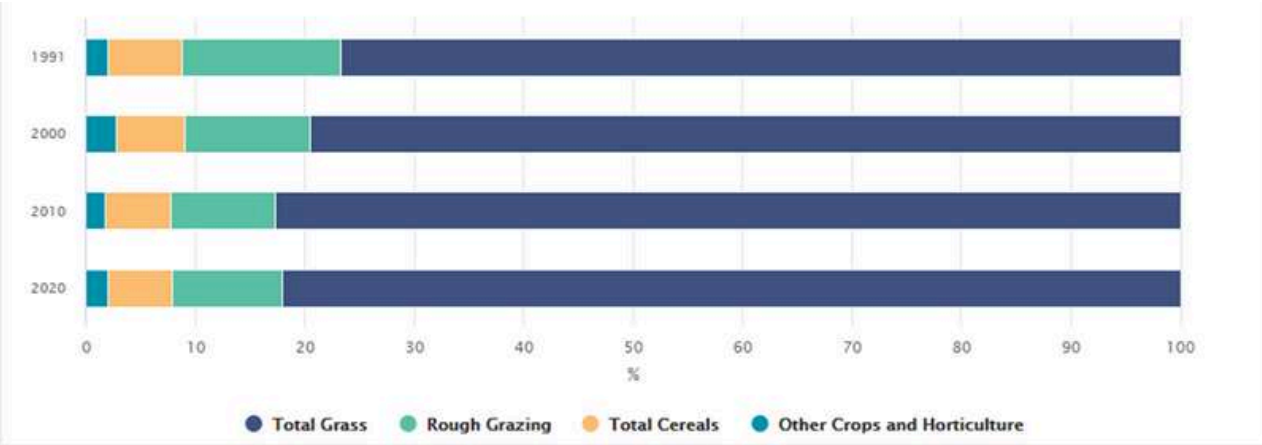


Figure: Distribution of land utilisation 1991-2020 (CSO, 2021a).

Conventional farming is traditional farming and often used in industrial agriculture. It consists of using manmade chemical fertilisers, pesticides, herbicides and other forms of chemical intervention to fight pests, weeds and provide plant nutrition. Whereas organic farming forms a system of farm management and food production that uses best environmental practices, biodiversity, preservation of natural resources, high animal welfare standards and a production method in line with customer preferences (Department of Agriculture, Food and the Marine, 2020). In Ireland, land used for organic farming accounts for 1.6% of total agricultural land, the second lowest percentage among EU Member States, as of 2019 when it was 1.5% of total agricultural land (CSO, 2021b).

Growing Food: Soil health

Soil health is the continued capacity of soil to function as a living ecosystem that sustains plants, animals and humans (Teagasc, 2020). For Ireland, it's grass-based animal production and arable crop production relies heavily on the health of our soils to deliver production on farms. In addition, soil quality and health are contributing factors in food safety, human and animal nutrition and health. As well as soil's obvious role in food and feed production, it also plays a role in natural processes; healthy soils provide clean air, food and water, supporting plant and animal growth, foundations for human infrastructure, flood alleviation, water filtration and storage, carbon sequestration and pollution control (EPA, 2020). Carbon is stored in soil, and if the soil is improperly managed the carbon can be released into the atmosphere, contributing to GHG emissions and climate change. Land management can either help or hinder soil's ability to sequester carbon. Human activity plays a significant role in causing soil degradation, mainly through land management practices carried out in an unsustainable or even poor manner (ibid). Which can be rectified through practising sustainable land management and soil conservation. A part of this is utilising it in planning, shifting away from the reliance of greenfield lands and looking towards brownfield sites and development opportunities in and around populated and built-up areas (ibid). Sustainable land management can prevent and reduce land degradation, maintain land productivity and reverse negative impacts of climate change.

Growing Food: Biodiversity

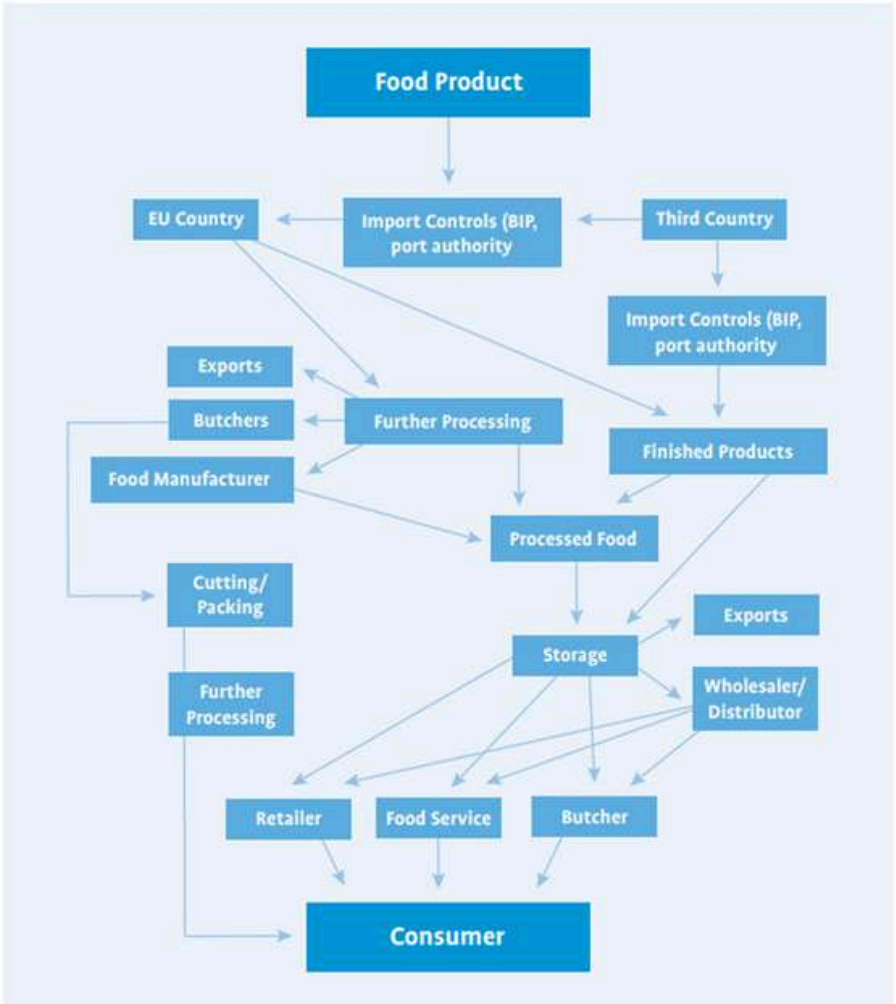
Biodiversity is an essential part of agriculture, particularly the services it provides such as pollination, soil health and pest control. Pollinating insects, like bumblebees, are vital for the pollination of crops and wildflowers; earthworms are essential for fertile soil; and insects and birds are an integral part of pest control (National Rural Network, undated). Farming and semi-natural grassland conservation go hand in hand, with farmers benefiting from the biodiversity provided by the grasslands, and in turn the grasslands thriving under the careful management by farmers. Land use and land management are key factors influencing the quality of biodiversity, and through careful conservation, farmers can protect and reverse the decline of endangered species and habitats. This can be done through green corridors, buffer wildlife from agricultural activities, planting wild bird cover crops, establish and protect native hedgerows, encourage wildflower growth, minimise artificial fertiliser usage, integrated pest management to minimise pesticide use (National Rural Network, undated). Good management agricultural practises will not only engender biodiversity, which in turn benefits production, but also protects water quality and prevents pollution.

Biodiversity is an indicator of a healthy ecosystem and can be beneficial beyond the services it provides agriculture. Biodiversity and healthy ecosystems provide us with ecosystem services that are vital for the air we breathe, food we eat and clean water. Also, healthy and functioning ecosystems help to mitigate against the impacts of climate change by sequestering carbon and reducing flooding and erosion (DCC, 2021). Considering the symbiosis found between farming and biodiversity, it could be said that urban food growing projects hold potential to foster protectiveness and responsibility for our green spaces, especially so considering the large portion of our City that is sealed and cutting the City off from the benefits of healthy soil.

Food Trade Balances & Movement of Food (CSO, 2018)

Ireland exports 90% of what it produces with an export value of €14.5 billion; in 2018 Ireland produced over 10% of global infant formula, largest net exporter of beef in the northern hemisphere; exported to 180 countries. While overall Ireland's food and animal trade balance are in surplus, the fruit and vegetable trade balance were in a €1 billion deficit in 2017, as previously mentioned Ireland can only meet half of its vegetable requirements. The largest amounts of foods imported into Ireland are cereals (rice, corn, wheat etc.) and fruit and vegetables. A large portion of these imports (Cereals, fruits, vegetables) come from outside the EU, i.e., China, Costa Rica and South Africa. Meat and dairy imports are mostly imported from the EU, with significant cross-border trade with Northern Ireland in soft drinks, live pigs and beer.

The food chain for imported foods



Source: Safefood, 2009. Where does our food come from? Summary Document

e EU, i.e., China, Costa Rica and South Africa. Meat and dairy imports are mostly imported from the EU, with significant cross-border trade with Northern Ireland in soft drinks, live pigs and beer.

Food supply chains are made up of growers, to transporters, processors, marketers, retailers and consumers making up links in a complicated chain where food can travel across many kilometres locally, nationally and globally. Due to economic reasons, seasonality, trade and consumer demand there is a steady rise in food imports (Safefood, 2009).

Our supply chain is potentially vulnerable to extreme weather events (physical obstacles – current facilities – consumer behaviour) and supply chain network disruptions (Covid-19 Pandemic related material and staff shortages and transport delays). To exacerbate potential future disruptions is Ireland's geographical location on the periphery of Europe which means we're the last economy to receive shipments coming across Europe.

Out of Home (OOH) Eating Sector

OOH eating sector ranges from restaurants, cafes, and takeaways to food delivery services. It is an expanding sector with a concerning lack of data on nutrition and portion size, according to the WHO (2021b). Currently, evidence suggests that food available in the OOH food sector is higher in saturated fats, sugar and salt and is sold in larger portion sizes than retail equivalents (ibid). Unfortunately, the OOH eating sector is unregulated in terms of nutrition and portion sizes, while it continues to grow rapidly. According to Dr Alison Tedstone, the Chief Nutritionist for Public Health England has stated, "Before Covid-19, most people were regularly eating out, and over the past year due to restrictions, we've seen the takeaway delivery market booming. So, it's now potentially easier than ever to consume more calories than we need through convenience. There is limited international policy in this space, so working together to tackle data quality challenges and sharing policy innovation are key if we are going to shift the dial" (ibid).

Cooking Skills

In times of limited food access, i.e., Storm Emma/Beast from the East, academics analysed gaps in the populations cooking skills. Stan Blackley (Gastronomy Academic) analysed the bread shortage. While a bread shortage was reported, possibly due to consumers stockpiling,

there was still ample raw ingredients to make bread (Pope, 2018). However, many in store bakeries rely on pre-made dough leaving them ill-equipped to supplement stocks with in store made bread and the continued reports of bread shortages implied an equal deficiency in the consumer populace (ibid). Ensuring a resilient and sustainable food system and secure food supply with skill equipped populations not only increases the City's ability to absorb shocks to the system caused by climate change but also builds a resilience within public health which increases the population's ability to handle shocks to their own systems.

Appendix V - Edible Dublin Survey Results

The *Edible Dublin Survey* took place in 2022 with the purpose of gaining a greater understanding into how the public interacts with their food system to inform a food strategy for the city.

The survey collected basic demographic information and asked questions covering different aspects of the food system that the public interacted with. Responses were gathered under the following headings: *Identify the Household Profile, Buying Food, Food at Home – Cooking & Nutrition, Food Waste, Eating Out,* and *Food Awareness.* From here, the data was analysed to identify correlations between the public's interactions with the food system and household socio economic profiles. The below section will outline the survey's results from the 362 respondents:

Firstly, most of the data came from those with an average approximate household income of more than €50,000 per annum. The majority of the survey respondents owned their homes (inclusive of those with mortgages) at 68.78%. Survey analysis showed an association between living circumstances (own or rent) and income. They also tended to spend more on food, although not significantly, in addition to consuming more fruit and vegetables than those that rent their accommodation. Regardless of income, most people spent 11-15% of their income on food (34.25%), however the average household income was above €50,000 per year and so a larger respondent pool could potentially show outliers from this survey's findings.

Regardless of living arrangements, the majority of respondents utilised private means to travel to do food shopping: walk (76.24%), car/van (60.22%), and cycle (32.60%). Subsequently, there was no significant association between mode of transport and frequency of shopping, with most respondents shopping either bi-weekly (45.03%) or weekly (37.57%).

There was no significant association between the frequency of shopping and common items bought, with almost all respondents favouring fresh produce (94.48%). The most common deciding factors for items bought are taste preferences (1st) and health/nutrition (2nd). On the question that asks for the respondent's self-assessment of their eating habits, 87.02% perceived themselves to be healthy eaters. Further analysis found that healthy eating was not significantly associated with familiarity to the food pyramid. Moreover, all income categories perceived food containing all essential macronutrients as healthy. With the majority of respondents classifying their cooking ability as "grand" (71.27%), regardless of living arrangements, income or money spent on food. Respondents that grew their own food, were almost evenly divided between those that do (48.34%) and those that don't (50.83%).

There was statistical significance between accommodation owners and renters when it came to food disposal. Among those that owned their own residence, compost and the general waste bin were the most common methods of food disposal, whereas compost and food waste bins had more popularity among renters. Overall, compost bins were the most common means of food disposal (36.46%). Interestingly, out of the food and climate action topics, food waste was cared about most by the respondents (82.6%), followed by local food (81.77%).

Throughout the survey there were questions to gage the public's interest in further engagement on this topic. Overall, there was an openness to engagement. 67.13% of respondents were interested in learning to increase their cooking ability; 66.85% were interested in learning about healthy eating; and 90.88% said they would be interested in local urban food growing and food awareness projects taking place in their area.

The survey has proven to be a needed exercise in sense gathering, and demonstrates the need for mapping the landscape of the public's relationship with the food system, with further research required.

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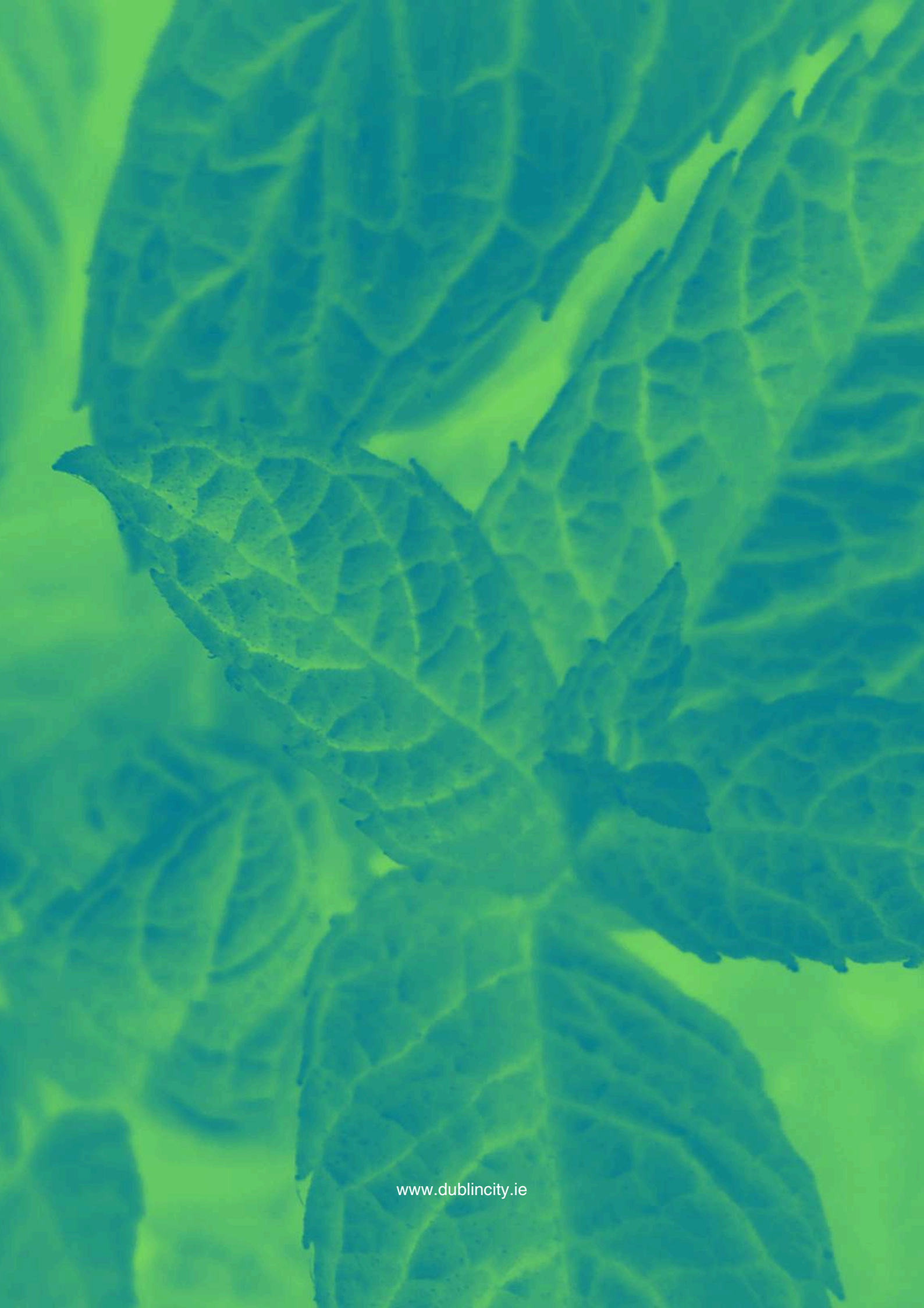

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