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Reshaping urban political ecologies: an analysis of policy trajectories to deliver food security

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Abstract

In a context of increasing urbanization, cities have become key sites for rebuilding food systems in order to deliver good food for all. Indeed, municipal governments around the globe are developing food policies to integrate different sectors and actors implicated in delivering food security outcomes. Despite the acknowledgement of the need to develop integrative plans and food governance approaches, sustainable food transitions are conditioned by specific socio-ecological configurations of individual cities. Furthermore, inclusiveness and integration are discursively deployed but challenging to implement on the ground. In order to understand these policy trajectories we mobilised a political ecology framework to explore how the specific configurations of nature and society express themselves in the process and outcomes of urban food policies. We selected two European cities: Cardiff and Cork. These cities represent distinct urban foodscapes and diverse state-civil society relationships. The results of this international comparative study indicate that the specific entry points of each city's policy trajectory condition the establishment of integral food policies. Our analysis shows how policy opportunities for success are shaped by existing socio-cultural dynamics (e.g., social asymmetry, level of engagement from civil society, pre-existing policy environment, and degree of state involvement), as well as particular ecological basis (i.e., availability and access to spaces for growing, share of green spaces, local climate, etc.). Furthermore, the potential of urban food policies to effect change on the city's foodscape hinges on their capacity to leverage place-based assets, and transform the structural processes that create exclusive and food insecure spaces in the first place.

Keywords Urban political ecology · Food policy · Food security · Cities · Urban governance · Metabolisms

1 Introduction

In a context of increasing urbanization, cities have become key sites for rebuilding food systems in order to deliver good food for all. More broadly, the urban has been signalled as the key site for revolution where transformation of nature becomes most visible, both in its physical form and its socio-ecological consequences (Harvey 2012; Swyngedouw and Heynen 2003); and, therefore, a key space to reshape food system dynamics. In this context, municipal governments around the globe are developing food policies to integrate different sectors and actors implicated in delivering food security outcomes (Battersby 2011; Blay-Palmer 2009; Moragues-Faus et al. 2013; Morgan 2009). This re-scaling of food policy action has been linked to a previously recognised lack of national and international leadership in addressing the vulnerabilities of the food system (Moragues-Faus and Morgan 2015; Lang et al. 2009). New cross-scalar relations and agencies are being created, from urban food policies to city-region approaches or the emergence of national and international city food networks (Blay-Palmer and Renting 2015; Moragues-Faus 2017; Moragues-Faus and Sonnino 2018).

Despite the acknowledgement of the need to develop integrative plans and food governance approaches, sustainable food transitions in cities are conditioned by their specific urban socio-ecological configurations (Moragues-Faus and Morgan 2015). For example, the successful anti-hunger

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programs implemented by Belo Horizonte in Brazil (Rocha 2001; Rocha and Lessa 2009) might be ill-suited in a context of low institutional capacity and lack of proximate small farmers to deliver affordable fresh fruit and vegetables to the city. Furthermore, the access and allocation of food in the city is deeply political, being intimately related to other socio-economic and political urban processes - such as housing and transport - that together result in the reproduction of social and food inequalities as well as distinct exposure to environmental degradation (see Heynen et al. 2006; Swyngedouw and Heynen 2003). Consequently, similar interventions might have very different outcomes when interacting with these distinct landscapes overtime. Indeed, perceptions around specific activities and their impact can also evolve. A clear example is the changing attitudes towards urban agriculture in Sub-Saharan Africa, from being considered a backwards practice to avoid in cities striving for 'modernity', to constituting an acceptable coping strategy amidst high levels of unemployment in the 80s and 90s (Battersby 2013). Recognizing therefore the diversity of ways in which cities and food interact in particular places constitutes a first important step to inform policy and action for the successful reconstruction of a food system.

In the last decade, the urban political ecology (UPE) scholarship has documented how this transformation of urban landscapes and ecosystems constitutes a co-evolutionary process where technological and institutional interventions interact with values, imagination and ways of knowing, as well as with ecological processes, to produce new 'socio-natures' (Swyngedouw and Heynen 2003). UPE theorists have illustrated through a series of compelling case studies how a socio-ecological focus can shed new light on the interplay of power, politics and place (Heynen 2015; Kaika 2005; Swyngedouw 2004; Truelove 2011). Indeed, they affirm that nature is socially constructed, highlighting how we, humans, constantly refashion our habitats and adapt to those transformed environments (Swyngedouw and Heynen 2003). This is not a socially neutral process: ecological processes "become discursively, politically and economically mobilized and socially appropriated to produce environments that embody and reflect positions of social power" (Swyngedouw and Heynen 2003: 6). According to Morgan (2015), despite little work in the political ecology of urban food provisioning, UPE has the capacity to address the socio-ecological and the political dimensions of the urban food question and therefore provide new insights into the emerging agenda around how to feed cities in a just, sustainable and culturally appropriate manner.

In order to contribute to this agenda, we mobilised urban political ecology to understand how cities devise specific place-based food system transformations with a focus on the role of policy contexts and chosen pathways. We studied these cities' distinct socio-ecological bases as well as their capacity to transform food insecurity inclusive/outcomes of exclusionary dynamics at play in their food systems through these

processes. We have selected two European cities, Cardiff and Cork, that have had different entry points as the initial 'vehicle' to develop food and nutrition security. The research upon which this paper is based was conducted as part of a pan-European multi-disciplinary study, TRANSMANGO, which aims to investigate current and future challenges in Europe's food system. It examines where there may be vulnerabilities and conversely where there may be potential for re-building the food system. In eight different European countries, 'bright spot' alternative food initiatives were identified for case study examination with the aim of exploring how these practices could be applied at different scales and in different places. The UK case study looked at the Sustainable Food Cities Network which connects (to date) 55 urban food strategies in the UK. It also examined the local chapter of this network in Cardiff, known as Food Cardiff, which supports individuals and organisations to create a food system which is good for people (health, communities, livelihoods) and places (the environment). Cardiff, a city that lags behind the rest of the UK in economic terms, and suffers startling health inequalities, has developed an integrated food policy delivered by a cross-sectoral partnership where the public sector and health issues loom large. Specifically, Cardiff has implemented a school holiday hunger programme to support families with children struggling to afford or access food that provides a healthy diet when free school meals are not available.

The Irish case study examined Cork Food Policy Council which seeks to influence food policy in Cork City towards the creation of a healthier, more resilient and more sustainable food system. Cork is an economically strong city which suffers from notable social and spatial inequalities resulting in comparatively high levels of disadvantage and ill health and comparatively low levels of quality of life. Despite its role as the 'foodie' capital of Ireland, it lacks an integrated food policy. Nonetheless, civil society initiatives in Cork are striving to address this deficiency as well as the negative outcomes attending the prevailing food system in the city. Of particular focus is community-centred urban food growing initiatives which it is thought have the potential to address a myriad of issues relating to food and nutrition insecurity. Cork Food Policy Council is the only non-UK member of the Sustainable Food Cities Network. Due to their connections through the Sustainable Food Cities Network, this comparative analysis between the Cardiff and Cork case studies emerged naturally. In addition, both Cardiff and Cork are medium-sized European cities, and their histories and development are tied closely to their functions as port cities.

Underpinned by the research question 'How can this practice develop into the future in a way that it will contribute significantly to better food and nutrition security at a European level?' further specific questions were developed as appropriate for each local case study. These were guided by framework topics of origins and evolution, the national

context, future (resilience and plans), and wider linkages. One common research method was applied uniformly across all TRANSMANGO case studies: transition pathway workshops, which were scenarios-guided. Scenarios are plausible future situations which are methodologically deployed in futures-oriented work to free participants from their consciously or subconsciously held assumptions. Both the Cardiff and Cork case study workshops took place over two days in winter and spring 2016 and involved stakeholders in their respective cities' food system. This included 18 participants each in Cardiff and Cork representing the city councils, public health, civil society organisations, academics and the private sector, and in Cardiff, the Welsh government. On the first day, key elements of ideal future food systems were developed collaboratively; plans were made step-by-step, backwards to the present detailing how these future goals would be achieved; and scenarios which had been developed for the broader European context were downscaled by participant stakeholders to the national context. On the second day, the back-casted plans were tested against the national scenarios to identify possible weaknesses and to thus improve these plans. Apart from these workshops, partners chose the suite of research methods which they felt were most appropriate to the case at hand. Both case studies in this comparison employed secondary analysis of key documents developed by the local food policy councils (including minutes of meetings, action plans, food strategies, and reports from key local organisations such as public health), targeted, semi-structured interviews with three (Cardiff) and two (Cork) key informants on the trajectory of urban food interventions and pre-workshop questionnaire surveys with a total of 11 (in both Cardiff and Cork) relevant stakeholders with the aim of identifying different understandings of key challenges in the urban food system and potential solutions. Participant observation activities were also undertaken in the Cardiff case study, beginning in 2013, involving regular attendance at Food Cardiff meetings (five times a year) as well as other local gatherings such as meetings of the Wales Food Poverty Alliance or the launch of the Peas Please campaign.

The remainder of the paper is organised as follows. First, we examine the value of an urban political ecological (UPE) framework and how it can contribute to understanding food systems. We discuss one particular UPE concept – urban metabolisms- which serves as an innovative tool to analyse how urban food systems are being and potentially could be transformed for the better. Second, we present the two case studies: Cardiff and Cork. Through the analysis of these cases, we explore the historical socio-ecological configurations of the two cities, their food policy contexts and a specific example per case study city of key strategic approaches or actions which work towards modifying urban metabolisms to deliver food security. Finally, based on a comparative analysis of the two cities, Section 4 discusses the main connections and disconnections that emerge from distinct urban food metabolisms, specifically in terms of scalar interactions and territorial interdependences.

2 Mobilizing urban political ecology to understand food system transformations

Urban political ecology (UPE) is committed to 're-naturing urban theory' by challenging both the basis and the direction of mainstream urban studies, much of which is said to be '*symptomatically silent about the physical-environmental foundations on which the urbanization process rests*' (Heynen et al. 2006: 2). The central concern of UPE, especially of Marxist-inspired UPE, is to expose the roots of unjust urban landscapes and effect a more equitable distribution of social power (Swyngedouw and Heynen 2003). Food is a central concern of UPE since it is implicated in the most intimate and necessary human-nature relations within the home, but also, the ways in which food is accessed, produced, and consumed in cities are entangled in the socio-natural production of urban space at different scales.

According to Harvey (2003:34), "*cities are constituted out of the flows of energy, water, food, commodities, money, people and all the other necessities that sustain life*". Urban political ecology scholars use metaphors of metabolism to understand such flows (see Kennedy et al. 2011 for a review of the concept). Gandy (2004:374) conceptualizes urban metabolism as the "*circulatory processes that underpin the transformation of nature into essential commodities such as food, energy and potable water*". For example, Heynen (2006) articulates the connections between the metabolism of food through the human body and the metabolism of cities to discuss the socio-natural production of urban hunger in Milwaukee. Similarly, Marvin and Medd (2006) investigated the multiple urban metabolisms connected through the (im)mobilities of fat in bodies (individuals), cities (as sites of action) and sewers (as infrastructure). These studies shed light on the connection between food insecure bodies and the urban form, conceptualizing the city as a site of multiple metabolisms that are always partial and selectively connected. Ultimately, these metabolisms create socio-ecological conditions that are beneficial for some and detrimental to others.

An important strand of work has concentrated on how the physical configuration of urban communities — driven by and actively reproducing neoliberal agendas (Brenner and Theodore 2002) — shape malnutrition and unsustainability outcomes from hunger to obesity. The spatial restructuring of urban foodscapes configures particular environments, sometimes labelled as obesogenic – characterized by the abundance of obesity-promoting environmental features - or food deserts, where the lack of healthy food options combines with

low household incomes and spatial isolation (Shannon 2014). In this context, Sui argues that

> "*the fatness of the body depends on the fatness of the city, since it develops as a result of the automobile dependent, privatized spaces of the fat city. (...) If the fat body becomes an obsession for health reasons and narcissism alike, it cannot be returned to a more sustainable size and shape as long as the city remains outside of theories of health*" (Sui 2003:82)

However, critical scholars are warning against simplistic conflations of places and bodies (Shannon 2014). For instance, research on obesogenic environments tends to ignore how the production of such neighbourhoods and the decision to live there may be part of a broader process of class formation, as well as highlighting personal genetic predispositions to develop these illnesses (Guthman 2011). Also, uncritical connections between spaces and bodies tend to shadow racial divides, as highlighted by Herrick's (2008) study of an urban anti-obesity campaign in Texas that resulted in classifying Hispanics under the banner of "high risk"' and therefore medicalizing racial and class-based inequalities. There is therefore a need to interrogate further the socio-natural production of urban space in order to design more emancipatory policy interventions.

Socio-natural processes, such as urban food insecurity, are produced through an amalgamation of biochemical processes, material and cultural practices, social relations, language, discursive constructions and ideological practices (see Swyngedouw 1999). Urban metabolism then refers to the co-transformation of these social and 'natural' elements into particular urban forms and relations (Heynen et al. 2006). The different ways in which food is produced, accessed, consumed and wasted in cities is entangled in the socio-natural production of urban space at different scales (Shillington 2013). However, socio-natural transformations are not politically neutral as they always involve diverse understandings, discourses, and ideologies about nature and the city (Marvin and Medd 2006), which resonate across and beyond the city itself (Cronon 1991). These competing perspectives play a key role in shaping particular urban food metabolisms.

In this paper we investigate how strategies dealing with food insecurity and unsustainability at the city level problematize differently the metabolisms of urban food. For that purpose, in the next section we mobilise UPE tools to explore how the two cities articulate differently the (dis)connections between multiple food metabolisms of the city, bodies and infrastructure, and policies by building on their specific enabling and disabling socio-ecological conditions. The metabolic lens highlights different elements of the city and conceptions of urban spaces, and provides the tools to explore the production of urban socio-environmental relations through a variety of ongoing networks and intermediaries. In addition, a focus on metabolic inequalities allows us to examine the social, economic, political and environmental networks that (re)shape urban relations.

3 Socio-ecological configurations and food policy trajectories of two European cities

3.1 Cardiff

3.1.1 From a coal metropolis to a sustainability fix

Cardiff's early development as a city is marked by its strategic port position amidst a mining region, becoming in the 1980s the 'coal metropolis of the world' and therefore attracting numerous migrants that set the basis of the city's ethnic diversity. However, the few manufacturing activities of the docks resulted in a narrow industrial base which, together with the slow death of the coal industry through the 1980s, culminated in Cardiff's deindustrialization (Hooper and Punter 2006). Nonetheless, the city has continued to experience growth through the service sector, particularly of public services linked to the role of Cardiff as the capital city of Wales (UK). With a population of around 341,000 people, Cardiff remains a relatively small provincial city, existing within a region which lags significantly behind the rest of the UK in economic terms (Bristow and Morgan 2006). Recent economic changes in Cardiff have been insufficient to address the city's entrenched social and spatial inequalities, particularly with regard to levels of income deprivation in the Southern parts of the city. Public health data shows that people living in the least deprived areas of Cardiff can expect to live in good health for 22 years longer than those in the most deprived areas of the city (NHS Wales 2016). In the city there is also a high number of malnourished people, and 52% of adults and 22% of children are overweight and obese, a proportion that increases amongst lower income families. Also, Cardiff food bank delivered 12,140 three-day food packages in 2015/2016 – a 12% increase on the previous year.

Cardiff has grown through a constant process of decentralization, resulting in a city with few people living in the centre. The structure of the city pivots around the docks, rail and road infrastructure and three river corridors that penetrate the heart of the city. It is one of the few cities in the UK with large wedges of green space extending to the countryside (Harris 2006). Indeed, one third of Cardiff council's area is countryside, including parks, agricultural and forest land (Cowell 2006). Cardiff's agricultural hinterlands, and Wales in general, are devoted to lamb and beef production, orientated towards export markets, and with little capacity to produce healthier foodstuffs such as fruit and vegetables. Food production within and around the city is limited to community gardens and allotments, which are thriving and experiencing long waiting

lists but lack articulation into a broader urban agriculture movement. Unsurprisingly, food and drink constitute almost a quarter of Cardiff's total ecological footprint, due to the consumption of foodstuffs grown or reared in an intensive manner and then manufactured or processed (Collins and Flynn 2006). Furthermore, there is an increasingly vibrant food scene, partly built on the cultural diversity of the city, struggling to win over some space to established multinational food chains. Nevertheless, the gourmet burger is still dominating this arena.

Centre-left parties (Labour) have largely governed the city (and the country, Wales) in the last decades, focusing on an urban renaissance strategy championing big projects at the expense of social infrastructure (Morgan 2006). Cowell (2006) traces the sustainable politics of the city, identifying key changes in the early 1990s when the city council sought to improve its green credentials. These changes included giving greater prominence to environmental concerns in council policies and adopting the language of sustainable development, couched largely in terms of maintaining the quality of life of residents. However, this shift was followed by a period of hesitancy dominated by expansionist priorities focused on economic growth and a lack of strong support by civil society. The environmental governance strategy of the council (as well as in other sectors) from the 2000s onwards has consisted of leading by example, that is, rather than implementing participatory processes, changes have been tied to traditional managerialist functions (ibid). Cowell identifies a lack of militant particularisms (Harvey 1996) able to connect place-based resistance with political activity at wider spatial scales, that is, a lack of NGO and civil society activity with the capacity to challenge the overall environmental metabolism of Cardiff's development (Cowell 2006:263):

> "*Many environmental problems facing Cardiff reflect the kind of consumer-based growth that successive political regimes have sought to encourage, coupled with an ingrained political inclination to accommodate the preferences of affluent residents, motorists, tourists and inward investors. Thus the sustainability fix pursued by Cardiff's political elitism reflects the belief that it is the city's economic performance that is more vulnerable than environmental quality. (…) Cardiff's leaders share the belief that certain environmental assets such as parks, can support economic prosperity and the hope that win-win solutions will be found without making the hard choices, but with little explicit support for restricting the preferences of developers or consumers to support the environment.*"

Despite the impetus of the public sector, so far Cardiff has not being able to modify its metabolism of inequality which surfaces health and hunger challenges as well as environmental risks. However, in the last years, food has become a medium to tap into the multiple metabolisms that result in urban food insecurity and unsustainability. To explore this, the next sections analyse Cardiff's food policy context and the establishment of a school holiday hunger programme.

3.1.2 The leadership of public health in Cardiff's food policy context

The first step in devising a food policy consisted of the development of the Cardiff Food Charter in order to articulate a vision for a local food policy based on widely shared and fluid principles of sustainability and fairness. The original impetus came from Better Organic Business Links, an Organic Centre for Wales project, which commissioned the Soil Association and a local sustainable food consultant to develop a charter. A working group was established to bring together representatives from the Welsh Government, the local authority, Cardiff and Vale University Health Board, higher education, the third sector, food businesses and community members to write the Charter, which has been endorsed by many of the city's decision makers. According to a key actor in the process:

> "*Its creation is intended to celebrate and promote Cardiff's' vibrant and diverse food culture, and to increase the demand and supply of fresh, local and organic Welsh[1] food throughout the city. The Charter connects Cardiff to a movement to build sustainable food policy at a local and regional level. Food charters are useful tools in a number of respects: they hold the potential to link policy with community action; to facilitate collaboration across separate policy areas; and to act as a catalyst for civic engagement and activity that brings benefits for communities and the environment.*"

Cardiff Food Charter takes a holistic food system approach and is structured around five main axes: health and wellbeing for all, a thriving local economy, environmental sustainability, and resilient, close-knit communities, and fairness in the food chain. The Charter was officially launched at a Sustainable Food City Conference held at Cardiff University in April 2012, with delegates coming from a variety of backgrounds. All those involved recognised that the launch of the Charter was just the start of the journey and that the next step was to set up a Food Policy Council.

The Cardiff Food Council (Food Cardiff) was set up in September 2012. It built upon the existing Food and Health Strategy Steering Group, established in 2002 to oversee the implementation of the Cardiff Food and Health Strategy, established in 2006. The Food Cardiff's membership includes representatives from the Welsh Government's health

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[1] Welsh food in this context refers to food produced in Wales.

improvement division, several departments of Cardiff Council, Cardiff and Vale University Health Board, Public Health Wales, Cardiff University, third sector organisations such as Cardiff Food Bank, Fare Share Cymru, Transition Towns, Riverside Community Market Association, The Soil Association, The Federation of City Farms and Community Gardens, and many others. In terms of governance, Food Cardiff reports to the Healthy Lifestyles Programme Board and the Environment Work Programme of the Cardiff Partnership Board which enables access to senior level decision-makers of the main public sector bodies in the city.

As a rapidly innovative food partnership, Cardiff Food Council joined the Sustainable Food Cities (SFC) network – a UK wide network of food partnerships - and won a competitive tender to hire a Sustainable Food Cities coordinator in 2014. This coordinator works at the interface of the SFC network, the Council and public health, spearheading the elaboration of a city-wide and multi-stakeholder action plan and leading the city to win a SFC bronze award in 2015. This award recognised the joined up, holistic approach to food that Cardiff is taking and significant progress on six key areas (see Food Cardiff 2014), mainly:

1. Promoting healthy and sustainable food to the public;
2. Tackling food poverty, diet-related ill health and access to affordable healthy food;
3. Building community food knowledge, skills, resources and projects;
4. Promoting a vibrant and diverse sustainable food economy;
5. Transforming catering and food procurement;
6. Reducing waste and the ecological footprint of the food system.

In the context of austerity, with increasing numbers of food bank users and health inequalities, and in a partnership characterized by strong leadership of public sector bodies (especially public health), Food Cardiff focused particularly on implementing a public school holiday hunger pilot project, which is analysed in detail below.

3.1.3 Changing urban food metabolisms through public school holiday hunger programmes

In order to modify the metabolism that generates hunger and obesity in the city, Food Cardiff developed a school holiday hunger programme. During the school holidays, when free breakfast in primary schools and free school meals are not available, some families struggle to afford or access food that provides a healthy diet. Some children also experience social isolation and a lack of intellectual stimulation, normally provided by school or family enrichment activities. Inspired by the Sustainable Food Cities campaign *Beyond the Food Bank*,

the city's food partnership decided to provide nutritious meals, sport and learning to children living in socially deprived areas of the city. In the summer of 2015, five schools were piloted in Cardiff, in 2016 the support had expanded to eleven schools in the city and other areas within Wales. Currently, the Welsh Government has committed £500,000 to support the Summer Holiday Enrichment Programme, *Food and Fun,* and twenty Cardiff schools will benefit from it in 2017. This successful programme driven by Cardiff pioneers has received UK wide recognition, winning six national awards from public health, sustainability and catering bodies.

The development of this programme relies on the specific socio-ecological configuration of the city. As stated above, Cardiff suffers from startling health and economic inequalities and, at the same time, public bodies such as local and national governments and public health remain key actors in shaping the city's development. For example, in Wales, public schools are still the norm while in England academies and free-schools[2] play an increasing role in the education system. Furthermore, Food Cardiff constitutes a major asset in the city, bringing together stakeholders with different expertise and capabilities. In this case, the programme was set up and delivered thanks to the concerted effort of Food Cardiff's coordinator, a public health dietitian from the Health Board, Cardiff Council catering team and the sports division.

Food and Fun core components include a free breakfast, a minimum of one hour physical activity, free lunch and nutrition education for 12 days over a 3 or 4 week period in the school summer holidays. The programme taps into the metabolism of childhood malnutrition by providing healthy food, skills and opportunities to exercise and socialise. At the same time, this metabolism is linked to the socio-natural processes that generate inequality in the city. First, *Food and Fun* supports families by easing the burden of parents that have to work during school holidays and cannot afford childcare. At the same time, these families suffer from lack of money for leisure activities and purchasing good food which the programme helps to mitigate. Amongst others, the programme includes a family lunch once a week. Secondly, this programme also surfaces and partially addresses the precarious situation of some school workers, by providing additional training and income through the school recess.

Finally, this programme is driven and funded by the public sector which mobilises debates around the right to food. This discursive change breaks with pervading neoliberal discourses of food as a commodity and malnutrition as an individual responsibility. It posits governments as responsible, and therefore accountable, to assure vulnerable children and families are well fed. The use of public infrastructure and resources helps to reduce the stigma of poverty since all children go to

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[2] Free schools are non-profit-making and independent schools, funded by the state which are free to attend but managed by actors outside the public sector.

school rather than being referred to special services and buildings. Furthermore, it maintains the personal relationships between the children themselves, the school's staff and families. In this context, the programme highlights schools as a key piece of infrastructure in re(shaping) the urban metabolism that results in food insecurity.

> "*Schools are probably one of the only assets that we can rely on from the public sector going forward, in these difficult times. They have fantastic infrastructure, they've got fantastic staff, let's use that and build on it, and link a lot of the other work we are doing into the schools as well, so whether that be looking at food co-ops or growing skills. There is enormous potential.*"

This programme tackles the metabolism of child malnutrition in Cardiff by providing healthy food and skills around food literacy, and by encouraging and facilitating children to engage in physical exercise. It also contributes to (re)shaping the metabolism of inequality in Cardiff by addressing three interconnected processes that affect food insecurity outcomes in the city. First, the programme is a public sector initiative which reduces the stigma attached to participating in its activities and contributes to framing access to a healthy diet as a right. Second, the initiative engages with struggling household economies where often both parents are working yet there is a lack of good food and money for leisure activities. Finally, this programme provides training and additional work for the unemployed and low-paid in the community.

3.2 Cork

3.2.1 A city of global and local food

Cork is Ireland's second largest city with a population of approximately 120,000 (Keane et al. 2014). Cork City's urban and economic development has always been strongly linked to its function as a port but manufacturing industries have also been important in the city's history (Brunt 1980; www.corkcity.ie, no date). Cork's economy has fluctuated over time, however from the late 1980s onwards, this once run-down city was transformed as high-tech industries became established in the city and its surrounding areas (Cork Chamber 2017; Cork Local Government Review Committee 2015).

The wider Cork region is a centre for market-oriented food and agricultural industries, especially beef and dairy. It is viewed as having particular strengths in this respect including a considerable amount of agricultural land, the largest farm sizes in Ireland, favourable soils and climate, and a wide range of agricultural educational, research and development facilities. The region is a major international dairy hub with highly competitive suppliers providing over 25% of total national output from their herds, which are significantly larger than the size of average national dairy herds. Cork's identity and culture is intimately tied to food with many describing the region as 'the food capital of Ireland'. However, much of its 'foodie' reputation is derived from 'alternative' food activities, which tend to focus on artisanal, small-scale and organic production, and short food supply chains (Barry 2015; Sage 2003). While these two approaches were traditionally seen as qualitatively and symbolically distinct, this dualism is gradually being eroded. Through a progressive process of hybridization, food produced by 'alternative' means is increasingly being marketed through conventional distribution chains. In addition, the imagery of the small producer is regularly appropriated by marketers of mainstream agri-food products (Sage 2003).

Cork has been rated as a comparatively disadvantaged local authority area with one third of the city's population living in highly deprived areas (Keane et al. 2014; Kelly and Hayes 2014). Over 13% of people in Ireland experience food poverty and given that Cork City fares worse than average on a number of poverty indicators, it can be extrapolated that food poverty there is at least this high (Department of Social Protection 2015; Kelly and Hayes 2014; Minguella 2011). Some initiatives report an exponential growth of food poverty rates in Cork City in recent years; for example a 'soup kitchen'-type charity in the city serves over 1000 meals per week, a more than six-fold increase on the numbers from two years ago (Cork Penny Dinners, n.d.).

There are a number of civil society initiatives which focus on developing community capacity for accessing healthy diets in Cork City (Carroll and O'Connor 2016; Linehan 2005). These include the Quay Co-Op workers' food co-operative, and a range of community gardens and other food growing projects (Barry 2015; Quay Co-Op, n.d.). There is evidence of further coordination of food growing efforts in Cork City from 2004 when the Cork Mandala of Community Gardens project facilitated community participants in the design and development of over ten community gardens (Cork 2005 2006). However, community actors have criticised the difficulty in accessing suitable land for growing food and other barriers such as a lack of capacity and resources. Another recognised limitation is the absence of a coordinated approach across the relevant civil society groups (Mills et al. 2016; Barry 2015; Dunne and Convery 2004). There are also non-state activities in Cork which aim to provide emergency food sources including the afore-mentioned Cork Penny Dinners and Food Cloud Hubs (FCH). The latter is a nationwide food surplus redistribution social enterprise, which acts as an intermediary between food companies and charities, using logistical solutions to simultaneously address high rates of food waste and food poverty (Carroll and O'Connor 2016). As with many similar initiatives, FCH is entrenched in current debates around dignity, quality food and redistribution of food waste towards the poor (see Hebinck et al. 2018 for a wider debate on the topic).

In addition to interest and enthusiasm for a sustainable food system in Cork City from community-based organisations such as community gardens and FCH, Cork Chamber of Commerce, a business interest group, has also taken action on bettering the food system. Nonetheless, it should be noted that while the two former community-based groups do not explicitly use the term 'sustainable', their aims and actions do in fact work towards goals of a sustainable food systems, when this is framed as something alternative to the prevailing food system. In contrast, Cork Chamber expressly employs the term 'sustainable' but in the context of improving cost-efficiency of production (Cork Chamber 2014). Cork Chamber's approach utilises a mainstream 'economic sustainability' understanding of the term which neither seeks to address social injustice nor environmental degradation deficiencies of the prevailing food system. Furthermore, FCHs is quite inclusive in that they aim to help those in poverty, making no distinction between different groups of impoverished people. Cork community gardens go further to actively seek to include as diverse a range of community members as possible including those with physical and intellectual disabilities, those with physical illnesses and the unemployed. Again in contrast, it would seem that Cork Chamber, in their strategic approach to developing the food and drink sector in the Cork region, do not make any provisions for social inclusion.

It is not surprising therefore that despite the enthusiasm from civil society initiatives to modify the food metabolism of Cork, inequality which has led to ill health, poor quality of life and food poverty in the city has not been modified. The socio-natural process of industrial manufacturing has contributed to the status quo. So too have physical landscape features such as the city's natural harbour, which has become home to a successful global port and has contributed to a normalisation of an export-oriented outlook. In addition, the favourability for food production of the land surrounding Cork City has encouraged exploitation of this 'natural advantage' through intensive, mainly livestock-based, agriculture. The next sections analyse Cork's emergent food policy context and a key transformative (although as yet uncoordinated) trajectory for modifying food metabolisms in Cork: urban food growing.

3.2.2 Cork's nascent food policy context: Newly emerging and showing potential

Integrated food policy as such, does not seem to exist in Ireland and the problems of this were discussed by stakeholders:

> 'Dealing with food requires you to focus on the entirety of the food system...Food is one of the most cross-cutting and diverse topics. But we've so often approached it though a set of separate silos: The Department of Community deals with A, The Department of Agriculture deals with B, and so on'.

> 'Addressing the two main issues of health and poverty require very different strategies. The obesity challenge is one that requires a multi-stakeholder approach that focuses broadly on education and awareness of healthy lifestyles whereas the poverty aspects are very complex and require even more understanding of the root causes and 'solutions'.'

Evidence of this disjointed approach can be seen by the prioritising of agriculture and rural development on the national policy agenda, in contrast to the local attention to urban food growing. Right-leaning national governance which has been in place almost consistently since the formation of the state has ensured a market-led, corporatist approach to agri-food policies (Dowler and O'Connor 2012). Reflecting the relatively high rate of rural dwellers and farmers nationwide, these policies tend to support the status quo of largely specialised, animal-based and export-oriented primary production. This reflects the situation in countries with similar rural/farming demographics, for example Canada (Hall and Mogyorody 2001). Food Harvest 2020, the key Irish agri-food policy document of recent years (published in 2010), is a roadmap for growth in agri-food outputs and purports to place environmental sustainability as a central tenet. However, similar to its follow-up Food Wise 2025 strategy, in its claims for 'smart, green, growth', Food Harvest 2020 had strategic goals of 20%–50% output increases in various farming sectors which are to be achieved through the oxymoronic strategy of 'sustainable intensification' (Sage 2010).

The prevailing national agri-food political direction is further evidenced by the Origin Green (OG) programme which is Bord Bia's contribution to the goals of Food Harvest 2020. Through the promotion of Ireland as a location of high quality and sustainable food production, this initiative aims to grow the international market for Irish food products. Reflecting the broader national approach to agri-food growth, many in the Cork region are eager to draw on the area's advantages in this sector. Cork Chamber has proposed an economic growth strategy, *Cork 2050,* which strives to increase jobs in target sectors including food and agri-tech (Cork Chamber 2017; Cork Chamber 2014; Indecon et al., 2008).

Given the neo-liberal national governance paradigm within which food policy in Cork City is embedded, it follows that the metabolism of Cork's food system suffers from many well-worn outcomes of such a regime, for example spatial and cognitive disconnections from food origins, and food poverty.

Nonetheless, in recent years, some community initiatives working to defeat the negative metabolic outcomes of Cork's food system have emerged and enjoy support from public bodies in the city. This may be reflective of the shift in Cork City Council constitution in recent years with greater balance between left- and right-leaning representatives. The most notable of these community initiatives is the Northside

Community Health Initiative (NICHE) which is a multi-agency partnership involving the Health Service Executive (HSE) and Cork City Partnership, amongst others. It aims to improve community health and wellbeing in Cork City with a specific focus on the Knocknaheeny and Holyhill areas, which have been designated as 'extremely disadvantaged'. In 2009, NICHE was awarded funding through Healthy Food for All (HFFA) from safe*food* to establish a Demonstration Programme of Community Food Initiatives (CFIs) over a three-year period (January 2010–December 2012). These CFIs explored how communities could be mobilised to facilitate the provision of affordable and accessible fresh healthy food to all people in low income areas.

One of these CFIs, Food Focus, promoted healthy eating through a variety of strategic activities, aimed at tackling food poverty in the Knocknaheeny area (ibid.). In the first year of this programme, a Community Food Charter was developed in consultation with local people and other stakeholders and set out aspirations for the quality and accessibility of food for themselves. In 2012, the third and final year of the initiative, exercises were carried out to explore the feasibility of creating a Food Policy Council (HFFA 2013). Also in 2012, Cork achieved World Health Organisation Healthy City status by demonstrating that health and health equality are core values for the city's administration. Core tenets of the Health Cities programme are that health promotion is enacted through planning, and supporting collaborative action and community participation. The Cork Healthy City programme is run in partnership with the community sector, University College Cork, Cork City Council and the HSE (Cork Healthy Cities, n.d.).

Cork Food Policy Council (CFPC) was established in 2013. It is the first and only food policy council in the Republic of Ireland. Developed as the 'next step' after the success of the Food Focus CFI, CFPC is supported by various bodies and organisations including NICHE, the Cork Healthy City initiative, the Cork Environmental Forum, the HSE and Cork City Council. It receives ad hoc funding from Cork City Council, primarily from its Healthy Cities budget (Carroll and O'Connor 2016). CFPC's key objective is to influence local food policy with the aim of developing a healthy, sustainable and resilient food system (Cork Food Policy Council, n.d.).

> 'Food policy councils are necessary for advocacy and that is our goal: advocating for a healthy, sustainable and socially just food system…It's about being regarded as a potential partner with the City Council on issues related to food. If you can work with the public sector, encouraging the city council to do positive things, there's a way you can achieve benefits. This is something we're working hard to do'.

There is evidence that CFPC has begun to have some success with regard to influencing food-related policy (Barry 2015).

For example, the Cork City Development Plan 2015–2021, published by Cork City Council, includes an objective of facilitating the creation of food growing spaces. More importantly, this plan includes the objective of working with CFPC specifically and other stakeholders to develop a food policy for the city which will help in the creation of a healthy, sustainable and resilient food system (Cork City Council 2015). CFPC were consulted as a stakeholder organisation in the creation of the Cork City Local Economic and Community Plan 2016–2021. Also published by Cork City Council, this plan lists CFPC as a strength in their SCOT[3] analysis of the city. The plan has a number of 'high level' thematic goals which are expressly connected to the United Nation's second Sustainable Development Goal, that is to end hunger, achieve food security and improved nutrition, and to promote sustainable agriculture. The thematic goal of 'Innovation' in this plan describes a key strategic action of exploiting the strengths of the Cork area in the food and drink sector in a 'responsible and sustainable manner'. The concluding action plan for the city lists supporting CFPC as an objective, particularly in their efforts to build quality of place, a healthy city, accessible food growing spaces, and to generally influence food policy to improve the food system (Cork City Council 2016).

Food policy in Cork is therefore new and emerging and has made commitments to support a number of approaches to transforming the food metabolism of Cork City. One key approach which has garnered most attention is urban food growing and efforts to create connections to support these actions are analysed in the next section.

3.2.3 On the pathway to improving urban food metabolisms through urban food growing

Projects to encourage community-led urban food growing in Cork City aim to modify the metabolisms which create food and nutrition insecurity in the city, especially in deprived areas. These initiatives also hope to alter the negative embodied, socio-cultural and natural metabolic results of food and nutrition insecurity, namely food poverty, hunger, malnutrition, and other diet-related health consequences, as well as a lack of biodiversity, poverty and community disadvantage. There is little evidence of relative social disadvantage among black, Asian or 'other' ethnic minority communities in Ireland and Cork. However, Irish Travellers do face drastically poorer health outcomes than the wider population which has led to efforts to include this ethnic minority in food growing initiatives.

Specific socio-ecological configurations of Cork City both produce and tackle the metabolism of food and nutrition insecurity. For example, stakeholders in Cork described a lack of knowledge among some groups in the city around food and its origins due to the distance between sites of production and

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[3] Assessment of Strengths, Challenges, Opportunities and Threats

sites of consumption. In contrast, the presence of a large co-hort in the wider Cork area who are interested in and knowledgeable about food was seen as a key strength of the city's food system. These people are involved in the production of artisanal, specialised and organic food on a small-scale which is then delivered to its consumers through alternative short supply chains. However consumers of organic food tend to be mostly upper-middle or middle class (Bord Bia 2014). Nonetheless, the favourable natural and environmental conditions which Cork enjoys for food production means that a revolution of urban food growing in Cork has great potential for success. It was acknowledged that wider systemic changes, for example to corporate practices, might be relatively difficult to affect, in contrast to encouraging community-led urban food growing which was viewed as a more accessible starting point. Stakeholders noted the role which policy and governance could and should play in tackling the metabolism of food and nutrition insecurity by facilitating urban agriculture. For these reasons, food growing is an objective embedded in all five of Cork Food Policy Councils strategic aims:

1. Health and wellbeing for all
2. A thriving local economy
3. Resilient food-friendly communities
4. Lifelong learning and skills
5. A reduced environmental footprint

These aims, in seeking to provide access to food growing to all, respond to the metabolisms of poorer than average levels of educational attainment, well-being, health and life expectancy in Cork, as well as to high urban inequality in the city (Minguella 2011; Haase and Pratschke 2008). CFPC is similar to food policy councils elsewhere whose key objectives focus on education and partnership-building for food system change. Examples of good practices include publicising community food resources and related projects through the development of maps and directories (Connecticut and Iowa), by holding 'food system' dinners (Onondaga, New York), and through the creation of awards systems which recognise important practices for food security (Knoxville, Tennessee) (Borron 2003).

Cork Food Policy Council takes a multipronged approach to community-centred urban food growing objectives. Firstly, it advocates for policy change to support this and there is some evidence of success to date, as described in the preceding section. The inclusion of goals around facilitating urban food growing is evidence of the acceptance of the accessibility of healthy diets as a fundamental right. It deviates from neo-liberal discourse which pervades the agri-food arena in Ireland by emphasising the role and responsibility of public policy and governance. CFPC's success in policy advocacy to date reflects key strategic objectives which were developed with CFPC members and other stakeholders at TRANSMANGO transitions workshop. These include advocating for policy change and public sector support with

respect to cross-scalar education on food growing, and facilitating the establishment of new, or development of existing urban growing initiatives by, amongst other things, making land available for this purpose.

A second key approach to achieving community-centred urban food growing objectives is to highlight existing organisational efforts through an award scheme, which it is hoped will encourage others to follow suit. 2017's inaugural Cork Food Policy Council Sustainable Food Awards granted certificates of excellence in three categories and all three recipient organisation place food growing at the centre of their activities.

A third and final strategic approach to encouraging food growing in Cork City is to effect change by getting involved with communities on the ground. For CFPC to be successful, it was posited that it must have a presence or profile within the community it purports to represent. A member of CFPC argued that perhaps the most important social actions are those which are not only on the ground but are those which require getting *in* the ground. To this end, CFPC have to date facilitated a food growing initiative, 'Greening the Historic Spine', which involved a community group first constructing planting boxes from recycled materials before filling them with edible plants.

Cork Food Policy Council's emphasis on food growing follows the fact that it sprung from the community food initiative, Food Focus, with key actors who drove this initiative becoming founding members of CFPC; Food Focus sought to tackle food poverty and to promote healthy eating in the disadvantaged Knocknaheeny and Holyhill areas of north Cork. One of the later achievements of Food Focus was its creation of a community garden, which it did by taking advantage of area regeneration plans. The goal of the Knocknaheeny/Holyhill garden is to promote and teach organic growing methods, cooking skills, and knowledge around eating fresh seasonal produce (NICHE, n.d.). Using land leased from Cork City Council and benefitting from City Council-directed funds, the garden is an example of a reconciliation between structural causes of disadvantage (chronic lack of investment in disadvantaged areas) and structural efforts to counteract this disadvantage and its outcomes. Cork also has a range of community gardens and other food growing projects which emerged independently of CFPC in recent years. This shift in land use draws on the city's particularly advantageous physical landscape which is made up of proportionately more green space (34% tree, shrub or grass cover) than any other Irish city (Mills et al. 2016; Dunne and Convery 2004). The objectives of urban food growing initiatives in Cork City vary, for example focusing on social inclusion, community cohesion, urban regeneration, improving community health outcomes, education and training, therapeutic functions, food security or sustainability (Barry 2015).

While CFPC's success to date has been limited, this is due to the initiative's nascent nature. It is therefore worth considering the challenges this organisation may face going forward. These include the lack of recognition of the complexity of the

food system or the severity of its problems; limited financial and human resources; and limited capacities for engagement of communities most in need of benefitting from food policy council activities (Scherb et al. 2012; Harper et al. 2009; Blay-Palmer 2009).

4 Connections and disconnections between urban food metabolisms

The comparative analysis of Cardiff and Cork reveals different connections and disconnections between urban metabolisms that result in food insecurity. This analysis also showcases a range of processes with the capacity to alter these metabolisms and assist in the delivery of food security outcomes, as well as elements that exacerbate the negative consequences of current food metabolisms. Two key dimensions have emerged as important for understanding the dynamics of urban metabolisms of food: the socio-ecological conditions of the city, and the bodies within the city.

First, a closer look at the urban metabolism of food in the city calls for an explicit understanding of *the socio-ecological dimension* of these dynamics. For example, in Cardiff, social and spatial inequalities which lead to metabolisms of food insecurity are at least partially attributable to the city's de-industrialisation and position as a lagging economic area of the UK (Gonçalves 2013). In addition, the minimal cognitive connection which Cardiff has with its agricultural hinterland may be explained by the area's lack of diversity in production due to a singular focus on livestock (Morgan et al. 2010). In the midst of an agricultural sector dedicated to red meat, championing local and healthy food is a struggle and high-lights the need to transform not only discourses and policies but also landscapes to support sustainability and food security.

Correspondingly, noting one particular element of Cardiff's socio-ecology aids in understanding how great strides have and could yet be made in improving the negative metabolic outcomes of the city's food system, is the fact that Cardiff is the largest and capital city of the United Kingdom's home nation of Wales. It is the location of Wales' devolved national assembly (since 1998) and home to many national cultural organisations and a large university. Civil society initiatives which seek to modify negative metabolic outcomes of Cardiff's urban food system arguably have a greater capacity to lobby for relevant policy change and to be provided with funding due to the accessibility of those in power (Johnes 2012; Day et al. 2000).

In Cork, similar to Cardiff, the disconnection between consumers and the origins of their food could be attributable to the region's focus on mono-cultural livestock production. However, in contrast to Cardiff, this may be exacerbated by the region's role as a centre for agri-food innovation and the normalisation of industrial approaches to production. It may also be made worse by the prominent role which Cork's port plays in the city's economy, driving a global outlook for food production in the region at the expense of a healthy and sustainable food supply for the city and its inhabitants (O'Connor and Keane 2014).

Also in contrast to Cardiff, Cork is Ireland's second city. It is much smaller than not only Cardiff but its population is dwarfed by that of Dublin and it lacks the critical mass for various public and private services which could contribute to tackling urban food metabolic issues. Cork's peripheral location on the South coast of Ireland and 270 km from the capital mean that influencing national political paradigms such as those which Food Harvest 2020 and Foodwise promote may be more challenging.

Nonetheless, Cork's peripheral location, and the even more isolated location of its hinterland to the south-west of the city, has attracted many 'outsiders' who seek to go 'back to the land' and who are involved in alternative food production and alternative food chains (Sage 2003). Links between these initiatives and Cork City are well-established and strong, contributing to the Cork region's reputation as the gourmet capital of Ireland (Broadway 2015; Carruthers et al. 2015). However, it is important to note that the alternative food movement in south-west Cork is alternative mainly in its focus on socially embedded relationships between producers and consumers, and in its emphasis on '*gustatory pleasure and aesthetic appreciation at the moment of ingestion*' (Sage 2003, p50). When these foods reach the city it would appear they do little to alter the negative metabolic outcomes for those in disadvantaged areas who are most in need of disruption to the food system status quo; it is arguably 'yuppie chow' (Guthman 2003).

The socio-ecological dimension of urban food metabolic dynamics in Cork also hinges upon the large amount of green space in the city (Mills et al. 2016; Dunne and Convery 2004). The Cork Food Policy Council and other proponents of community-centred food growing are strategically seeking to disrupt food insecurity by making connections with green space, food growing, food cooking and food enjoyment. These stakeholders are arguably 'pushing an open door', given the relatively large proportion of space available in the city for this, in spite of reports of difficulty in securing land for growing to date. Understanding Cork's green landscape contributes to understandings of the potential future path for changing urban metabolisms in Cork for greater food security.

The socio-ecological dimension of food metabolisms in both cities stresses the need to explore changes to material conditions, for example landscapes, but also discourses. In this vein, Cardiff council has mobilised a particular notion of sustainability closely tied with economic growth, while Food Cardiff and the Sustainable Food Cities Network use sustainability as a consensus frame to bring a range of stakeholders together (see Mooney and Hunt 2009). Furthermore, this flexible approach to the constructed and contested notion of sustainability (see Sneddon et al. 2006) allows Cardiff to champion health as a key sustainability concern, departing from the three classical pillars of environment, society and economy. In

the case of Cork, discourses around sustainability are also varied and showcase tensions between alternative food movements and an export-oriented agricultural sector wanting to improve its environmental and social credentials. These different approaches have an impact on policy interventions since they shape the definition of what the right course of action is judged to be and therefore condition the establishment of priorities. Furthermore, they display additional disconnections between key urban food metabolisms such as the production of economic inequalities and the supply and provenance of food consumed in the city.

The comparative analysis also reveals disconnections within in the food metabolism of the city and the body, revealing challenges for food policy actors to engage with this scalar dimension of food. Existing literature stresses the need to establish multilevel policies to address food security concerns, mostly highlighting the interconnections between local, regional, national and international levels (Barling et al. 2003; Moragues-Faus et al. 2017). However, a focus on metabolisms also reveals the importance of including biological processes and bodies within such multi-scalar approaches to policy making (Swyngedouw and Heynen 2003).

This increasing recognition of the role of bodies within urban food metabolisms is still relatively partial and calls for a better articulation between different key spatial scales: the body, home, community, city, region, nation and global (Neil Smith 1993; Bell and Valentine 2013). Indeed, Cardiff's food champions fail to actively and politically engage with the global food system that largely feeds its citizens when developing plans and programmes. Furthermore, the inclusion of regional and national perspectives is restricted to rethinking sources of food supply or tapping into national and UK powers. Consequently, the spatial imaginary lacks an awareness of how socio-ecological processes at different scales actually shape particular food insecurity metabolisms, which necessarily include what happens within the bodies that are connected through food metabolisms and inhabit proximate but also distant places. Similarly, Cork policy trajectories build on disconnections between scales that also provide partial accounts of current urban metabolisms. Indeed, the separation between the global agri-food industry and community growing initiatives clearly displays a different scalar focus which, among others, prevents confrontation and allows a range of contrasting initiatives to coexist.

In both Cardiff and Cork, there is also evidence of a failure to recognise the metabolism of food *in* the body as part of food insecurity dynamics. This evidence comes from the sharp increases in engagement by citizens in both cities with food assistance programmes, as well as the higher than national average levels of poor health in Cardiff and Cork. However, food policy actors in both cities have begun to reconnect the issues of food security with micro-scalar issues of the body by integrating a health perspective. Both Food Cardiff and Cork Food Policy Council (CFPC) are associated with public sector

groups focused on improving individual citizen's health: Food Cardiff built upon the pre-existing Food and Health Steering Group in the city, while CFPC was associated with the Cork Healthy Cities group from its inception. However, while Food Cardiff has a responsibility to report to a Healthy Lifestyles Programme board, CFPC has no such obligation. In addition to the support which the School Holiday Hunger Programme has had from Cardiff City Council, this suggests that policy-makers have recognised not only the existence of hunger and diet-related ill health in the city but the need to (re-)assume responsibility in tackling these issues. Although the same cannot be said for Cork City Council, there are some promising signs of progress in this respect with the city's Local Economic and Community Plan pledging support for CFPC's goals, one of which is the creation of a healthier city. However, in the absence of strong city-level governance to tackle the metabolisms of dietary-related ill physical and mental health in Cork City, CFPC have begun to lead the way on this. They have done this through the promotion of community-centred urban food growing initiatives to provide greater access to healthy food, and greater literacy around food growing, preparation and consumption. A central tenet of their approach is the necessity of reconnecting physically and bodily with the food system, to alter urban metabolisms and to best effect a physical, body change; that is, being in a state of food and nutrition security.

5 Conclusions: (re)shaping urban food metabolisms

This paper focuses on the city-scale due to increasing urbanisation trends worldwide and the transformative role which cities can play for rebuilding the food system. To support these efforts, many cities have begun to develop integrated food policies which aim to deliver food and nutrition security. However, when viewed through an urban political ecology lens, it is clear that food policy and governance are contingent upon a city's specific socio-ecological configurations. The two case study cities - Cardiff and Cork - are comprised of diverse and historically constructed configurations of nature and society, providing different opportunities to implement successful urban food policies. Cardiff presents a case where the local public sector, and particularly public health, takes the lead in changing the current food insecurity metabolism of the city, in the absence of a strong civil society movement and an engaged private sector. By contrast, Cork is exploring urban food growing as a mechanism to address multiple sustainability and health challenges in a context where a strong national export-oriented agri-food industry dominates food debates. By mobilising a political ecology approach, this paper showcases how these distinct policy trajectories impinge upon particular socio-ecological configurations. Specifically, we discuss how these configurations are expressed through bodily forms (from obesity to destitution), material landscapes (of local,

unhealthy and distant food), and contrasting discourses and powers which shape policy trajectories as well as food insecurity outcomes.

The findings presented in this paper highlight the importance of tracing the (dis)connections across metabolisms reproducing food (in)security, such as the creation of precarious employment, the lack of skills or the experience of diet-related diseases. These (dis)connections shed new light and provide new evidence to advocate for holistic approaches to develop effective food policies. Furthermore, they call for a place-based and historical awareness of how places develop unique transitions towards food (in)security and (un)sustainability outcomes. Not least, an urban political ecology perspective contributes to 'naturalising' urban food policy research, by acknowledging the co-constituted nature and ecological basis of bodies, social and physical infrastructures and policies. This shift implies a deeper engagement and responsibility for the relationships that create certain food metabolisms rather than conceptualising bodies, infrastructure and other elements at play as objects that need to be externally acted upon. By mobilising the notion of metabolism, urban political ecology also offers a much more fluid understanding of scale and provides tools for integrating cross-scalar processes and actors in understanding the production of food insecurity in the city. The analysis presented here starts to map cross-scalar (dis)connections and their impact on urban food policy configurations. In the context of increasing urbanization as well as socio-economic and spatial inequalities, both food studies and urban political ecology would benefit from exploring further current cross-scalar food metabolisms, their simultaneous effects on multiple geographies and the powers that can be deployed to re(shape) them.

Compliance with ethical standards

Conflict of interest   The authors declared that they have no conflict of interest.

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