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The political ecology of food: carving 'spaces of possibility' in a new research agenda

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Abstract: In times of austerity and global environmental change, recent crises related to food (in)securities and (un)sustainabilities urge us to reposition agri-food research. We argue that there is an opportunity to develop a more critical food scholarship by explicitly integrating political ecology approaches. For this purpose, the paper outlines major elements in the extensive political ecology scholarship to guide a critical review of some central trends in food research, as well as considering the contribution to date of food studies to political ecology perspectives. This exercise allows us to identify key avenues of convergence between food studies and political ecology frameworks that constitute three conceptual building blocks of a revised critical food scholarship: understanding place-based socio-natures; addressing the politics of scale and inequality; and co-producing knowledge and change. These coordinates are used to analyse two emergent potential spaces of possibility, embodied in the emergence of cities as food policy actors and the rise of the Food Sovereignty movement. We conclude by exploring how a critical food scholarship could inform an inclusive reframing to produce the grounds of possibility for a more socially and ecologically diverse food system.

Keywords: political ecology, food studies, food security, sustainability, socio-natures, food movements

1. Introduction: repositioning food crisis in unruly capitalism

The agri-food scholarship has evolved over the past twenty years from a predominant focus on production to include not only consumption dynamics, but a much more complex landscape of actors, processes and theories (Goodman, 1999; Marsden et al., 1996; Winter, 2003b). Nevertheless, by and large, during a prolonged period of plenty- when food supplies and provision seemed to be largely solved for the developed countries at least (from the 1980s through to the food crisis of 2007-2008)- much research on food has been disconnected from its political and/or ecological implications. We wish to argue in this paper that it is now time to acknowledge how the period since 2007 represents a new rupture and a more volatile context for agri-food scholarship, whereby the explosion of interest in food studies which preceded it requires a critical re-examination and the development of new insights.

The combined food, financial and fiscal global crisis unleashed in 2007 represents a significant rupture with the pastⁱ. In most countries, the gap between rich and poor is at its highest level in the last 30 years (OECD, 2015). Since the crisis, the rise of global levels of inequality has accelerated, fuelled by increasing unemployment and the politics of austerity which have weakened the cushioning effect of redistributive policies (ibid). In European countries, the associated dismantling of the welfare state has created increases in food and energy poverty, partly coming into the light in the form of food bank queues. It is important to recognise that this new terrain contains policy and scientific reactions which hold implications for the agri-food research agenda. First, the crisis has led to a broad renaissance of (neo) productivist responses to the wider problems of global food and nutritional security (see for example Royal Society, 2009; HOC, 2014; Silvasti, 2015), that is, an integration of food security concerns into a wider neoliberal agenda that frames hunger as a technical problem that must be addressed

through increased productivity and the liberalisation of trade (Moragues-Faus, 2017a). This approach to 'feed the world' is energising bio-scientists and economists to prospectively assess the globalisation of the food security problems in an aggregated sense.

At the same time, and driven by a more domestic social and food welfare concern, we see a proliferation of civil society initiatives (such as city food movements and local community initiatives) which are attempting to build more radical and place-based alternatives to the dominant 'food regime' (see Marsden and Morley, 2014; Blay-Palmer et al., 2013). As some have noted (Goodman et al., 2013), research on these food alternatives has been instrumental in generating a rich set of case studies, often celebratory, which would benefit from linking to broader conceptual frameworks in order to enlighten theoretical but also practical transitions towards sustainability in this new period. In reality, separations between these alternative and conventional food networks have proven sterile since they are indeed relational to one another and conforming a hybrid food system (Sonnino and Marsden, 2006). Invariably, this new food landscape, unleashed since 2007, holds important implications for the current and future pathways of the agri-food scholarship, in that it specifically re-questions the central role of the politics of place and nature in resolving the current food crisis.

Critical perspectives now have important contributions to make in these new conditions and at this particular juncture. Food studies would now benefit from a re-problematization of place and nature and a more politically sensitive approach to the asymmetrical character of nature-social relationships. Building on recent work on food, we call for a more critical and grounded relational approach where food acts as a vehicle and central heuristic device for understanding crises and their uneven dynamics

at different spatial scales. This paper aims to contribute to the development of a more engaged, ecologically attuned and critical food scholarship. Central to this aim, we argue, is to re-introduce a re-freshed political ecology dimension into this scholarship that recognizes the subjectivity of current understandings of environmental challenges and their potential responses (O'Brien, 2011). Taking Robbins' definition of political ecology (PE) as "empirical, research-based explorations to explain linkages in the condition and change of social/environmental systems, with explicit consideration of relations of power" (2004:391), we aim to re-appraise some of the key trends in the current food studies literature. PE not only stresses the political dimension of socio-ecological systems, but also how our knowledge, and related knowledge production processes, shape and are shaped by political and economic processes (Forsyth, 2003; Robbins, 2012). Consequently, PE serves as a useful lens to expose the socio-natural processes that (re)produce inequalities, exclusion and injustice between people and places (Brenner, 2009; Hubbard et al., 2002) which underpin the current geography of food insecurity.

Such a revised perspective is further motivated by the recent and interdependent 'nexus' crises (e.g. financial, fiscal and energy) closely related to food (in)securities and (un)sustainability, which urge us to rethink research agendas committed to an emancipatory politics, promoting social change and the development of new spaces of hope and possibility (Blomley, 2006; Harvey, 2000). As Neil Smith (2015) stated, 2007's capital implosion and global uprisings that accompanied it opened up a *possibility* of a future. This future builds upon economic alternatives that "should no longer be regarded as residual practices, (...). They are valuable and diverse experimental ecosystems of norms, practices and trajectories – the seed banks, if you will, of

alternatives to globalizing capitalism”(Sheppard, 2015:1129). Building these ecosystems requires a critical food scholarship which attempts to “politicize, empower and identify alternatives” (Tornaghi, 2014:14). Inspired also by Gibson-Graham’s (2006) reflections on the role of academics in a more heterodox capitalism, a re-politicization of food would then require “new ethical *practices of thinking* economy and becoming different kinds of economic beings” (p. xxviii).

To address and contribute to these perspectives, in section two we outline key elements in the extensive political ecology scholarship and related contributions to the political ecology of food. Section three presents a succinct critical review of some central trends in food research. Inevitably, and given the rapid expansion of the field, there are omissions including the critical issues of nutrition or the geographical coverage of the literatureⁱⁱ. We devote special attention to the European and North American scholarship and particularly rely on previous reviews of food studies literature. As a result, in this section we highlight some key trends in agri- food studies, mainly the changing focus on food system stages (from production to consumption) and its associated theoretical turns (from macro political economy analysis to post-structuralist approaches and associated human-nature debates) pointing out thematic and analytic ‘missing middles’. Section four explores three main avenues of potential connection and convergence between food studies and political ecology frameworks that constitute the building blocks of a revised critical food scholarship: understanding place-based socio-natures, addressing the politics of scale and inequality and co-producing knowledge and change. These active coordinates are used to analyse in section five two emergent potential spaces of possibility, embodied in (i) the emergence of cities as food policy actors and (ii) the expansion of the food sovereignty movement.

In conclusion, these examples allow us to explore the potential contribution of political ecology to a refreshed food studies agenda and vice versa.

2. Political ecology: a tool for critical analysis of agri-food systems

The emergence of political ecology (PE) dates to the 70s, rooted in studies on rural development, cultural ecology, ecological anthropology and political economy conducted mostly in developing countries. This scholarship challenges apolitical accounts of environmental change, calling for an acknowledgment of political- economic forces and an explicit unveiling of normative goals that embed assumptions and explanations around human-nature relations (Robbins, 2012). The pioneering work of Blaikie and Brookfield (1987) defined political ecology as the combination of ecological concerns and a broadly defined political economy. This succinct definition has left room for discussion around what is political ecology –a research agenda, an approach or a community of practice (Robbins, 2012)- as well as fostering a number of modifiers such as critical (Forsyth, 2003), geographical (Zimmerer and Bassett, 2003), urban (Swyngedouw and Heynen, 2003), feminist (Rocheleau et al., 1996), post-structuralist (Escobar, 1996), third world (Bryant and Bailey, 1997) and first world perspectives (Galt, 2013).

Political ecology thus benefits from multiple disciplinary influences most notably geography, anthropology, sociology, environmental history and ecological economics leading to fertile ‘disciplinary transgressions’ (Bryant and Bailey, 1997). In this complex landscape, we follow other geographers and political ecologists who argue for an inclusive approach to PE enriched from different disciplines with common philosophical and theoretical starting points that provide coherence but also leave room for difference, exploration and debate (Blaikie, 2008; Neumann, 2005). This is particularly

relevant in food studies which have ‘spearheaded post-disciplinary research’ (Goodman, 2016). These common starting points are summarised by Bridge et al. (2015) who identify three commitments shared by political ecologists and that in this paper we mobilise as a working definition of political ecology. These are:

- A theoretical commitment to critical social theory and a rejection to positivist approaches to social relations, understandings of nature and the production of knowledge about it.
- A methodological commitment to in-depth, direct observation that combines different methods to understand place-based and historically constructed socio-ecological relations.
- A normative political commitment to social justice and structural political change, seeking to conduct research to understand the world in order to change it.

In this section, we explore further the theoretical aspects of political ecology by selecting three key tenets to discuss how political ecologists understand human-nature relations and their outcomes– including forms of critique and explanation, dialectical social-natural relations and critical approaches to knowledge production. We illustrate how different political ecology analytical tools have been mobilised in the food studies literatureⁱⁱⁱ. This allows us to point out key contributions of political ecology research to the agri-food scholarship to date and vice versa.

a) Critique through a historical and multi-scalar analysis of power and inequality

Political ecology narratives explore the *historical* process through which *winners and losers* of environmental transformations are created, including the institutional, social,

economic and power relations that operate at different scales and uneven geographies. PE borrows from Marxist political economy historical perspectives to critically examine the incorporation of locations and communities to capitalist economy, and particularly the role of the state in supporting accumulation by dominant classes (Neumann, 2005). The food regime scholarship, broadly based on agrarian political economy, contributed to a thorough examination of how agri-food systems are imbued in capitalist expansion. In this scholarship, Friedman incorporated ecological aspects in food regime analysis by highlighting the break of reciprocal dependencies between humans and local ecosystems as a determinant point in the creation of different forms of capital accumulation (Friedmann, 2009 in Galt, 2013). However, PE has also modified political economy, for example by including more complex state-civil society-market interactions underpinned by a broader notion of politics – such as everyday forms of resistance and gender relations (Rocheleau et al., 1996; Truelove, 2011) -, acknowledging a discursive turn that embraces social constructions of knowledge and by bringing questions of environment and nature more centrally into their analysis (Peet and Watts, 1996).

PE has also benefited from the advances in key geographical concepts through time such as *scale, place and region*; engaging with the literature on the social production of space to investigate co-constitution of nature, society and space (Rangan and Kull, 2008), but particularly stressing the central role of power relations in PE frameworks (Tan-Mullins, 2007). Linking place-specific conditions to different scales and processes constitutes a key methodological aspect of PE works (Neumann, 2005). For example, PE focus on scale and power relations contributed to challenge uncritical associations of 'local' food to sustainable development outcomes (see the debate on the local trap Brown and Purcell, 2005; DuPuis and Goodman, 2005). Not only political ecologists (with

others) have informed the contestation of 'the local' as a privileged scale in food studies, but more widely it has contributed to highlight the overlook of the politics at play in the development of alternatives to the agro-industrial food system by and large grouped under the banner of Alternative Food Networks (AFNs).

The study of AFNs has enjoyed a privileged position at the forefront of the agri-food scholarship in the past decades. However, according to recent comprehensive reviews on the field (see Tregear (2011) and Goodman et al., (2012)), an important part of this work has been developed in a conceptual vacuum and/or fuzziness, often adopting a rather un-critical and ideographic approach to study the phenomenon. Of particular interest was Goodman's (2004a) intervention stressing the need to reassess claims made by much of the European literature on whether AFNs represent a paradigm shift, that is, if they represent a change in social structures and power relations. In this line, using political economy and political ecology frameworks, critical scholars have argued that not only the 'local' but other attributes of AFNs such as fair trade schemes or environmentally friendly certifications might actually contribute to capitalist development, exclusion of vulnerable farmers and low-income consumers, and labour exploitation (Goodman, 2004b; Guthman, 2004). Motivated by these critical perspectives, scholars have exposed how in many cases these 'ethical' and 'sustainable' initiatives can conceal potential environmental impacts and reproduce social inequalities, and might also be fostering an infertile consumer politics by deepening individualist practices and reproducing neoliberal configurations that hinder social change (Moragues-Faus, 2017b). Nevertheless, other political ecologists claim that AFNs aim to de-commodify food and agriculture (Pimbert et al., 2001). As Galt (2013) points

out, making these tensions between critique and transformative potential of AFNs productive is an exciting challenge for future political ecology.

In line with PE approaches, a range of academics are showing the need to engage further with *critical theory themes* such as class, race, gender and ethnicity in food research. For instance, Alkon and Agyeman (2011), drawing on environmental justice literature, compile timely work on sustainable food, race and class highlighting the wider political, economic and cultural systems that produce environmental degradation and social inequality. Under this lens, Shannon (2014) recently examines how food deserts work to “pathologize low income communities by locating the cause of obesity inside their geographical boundaries” (p. 249). Similarly, McIntyre and Rondeau (2011) apply political ecology tools to unveil how some local food discourses delegitimize constraints to access more sustainable food provisioning. Particularly, the work of Slocum (2011, 2006) has put race at the heart of the food agenda stressing the discursive, material and corporeal racism – or how “certain populations of bodies are structurally recognised as less worthy of sustenance and luxury” (Slocum and Saldanha, 2013:1)- that configures the current unjust global food system.

The search for justice is a prominent motivation for political ecologists, who have devoted many efforts to analyse environment-related conflicts and their outcomes (Billon, 2015; Martinez-Alier, 2014). According to Robbins (2012:14), the actors and causes of conflicts over environmental access “are part of a larger gendered, classed and raced struggles and vice versa”. These conflicts take place over specific elements (e.g. water quality or toxic waste) but within the context of economic, ecological and cultural differences (Escobar, 2006). Using multiscalar, historically informed and culturally sensitive power analysis, PE research on conflicts has tackled

key themes in food studies such as access to land (Borras et al., 2010, 2015), struggles over local seed varieties preservation and use (Mullaney, 2014; Watts and Scales, 2015), technological changes (Shiva, 1991) and the impact of policies and regulations such as trade liberalisation (Grossman, 1993). Political ecology has also been preoccupied with the actors involved in those conflicts, and since its origins, special attention has been paid to peasant struggles (Blaikie and Brookfield, 1987; Watts, 1983), with PE playing an increasing role in academic works about la Via Campesina (the global peasant movement) and the broader food sovereignty movement (see for example (Bernstein, 2013; Karriem, 2009; Oliveira and Hecht, 2016)).

b) Conceptualising society and nature relations as dialectical

Political ecology aims to understand environmental changes, on the one hand by describing transformations in the physical world, while on the other, exploring the meanings and discourses representing and shaping those changes. This juxtaposition between realist and constructivist epistemologies posits methodological and philosophical challenges, but it can be extremely fertile in understanding the ecological and political processes that lead to specific socio-natural configurations. As Neumann (2005) synthesizes, PE has adopted contributions from Marxist historical productions of nature, social construction of nature perspectives, situated knowledge critiques of science, environmental history and equilibrium and non-equilibrium ecology; ultimately resumed in an increasing uptake of critical realism in PE works which allows a productive relationship between material and discursive accounts of socio-natural configurations.

In this line, Watts (1983) proposed to conceptualize *society-nature relations as dialectical*, criticizing earlier atomised PE propositions. From a dialectical position, things are not

discrete but relational, they have a history and an external connection with other things, in constant interaction and transformation -in a state of ongoing becoming (see Robbins (2012) for discussion). PE's consideration of *the relationship of nature and society as dialectical* entails that "human transformation of natural ecosystems cannot be understood without consideration of the political and economic structures and institutions within which the transformations are embedded" (Neumann, 2005:9).

Political ecologists employ analytical concepts such as socio-ecological systems or socio-natures to navigate how nature and society emerge and change by becoming entangled with one another (see (Braun, 2006; Whatmore, 2002). For example, Goodman (2004b) affirms that fair trade is commoditised through two interconnected moments, the moment of socio-ecological production - situated within specific agro-ecological contexts and peasant communities - and the moment of discursive/semiotic production, where meaning-full discourses and politicised ethical products are constructed. Another revealing example comes from Freidberg's (2009) analysis on food freshness which shows how this 'natural' condition of food relies on the expansion of intermediary actors and agro-industrial developments –such as refrigeration, energy, logistics, distribution- as well as on a historically, socially and culturally constructed notion of quality food.

Other examples integrate ecological and public health outcomes in the study of food systems establishing linkages with works on the political ecology of health. For instance, Galt's (2009) multi-scalar PE lens unveils how the global governance of food export and pesticide regulation (with different standards on pesticide use for Northern and Southern countries) puts producers and consumers in the Global South at higher health risks than Northern consumers. Similarly, Guthman (2016) illustrates the tensions in the strawberry industry between protecting people's health and preserving farmers'

livelihoods in regulating fungicides. In this case, environmental campaigners' separation of health and ecology concerns from economic livelihoods has made it thinkable for industry to express care about jobs more than lives, ultimately reinforcing workers' disposability.

Feminist political ecology scholars have played a central role in problematizing the scalar dimension of these dialectical nature-society relations, from the body to international trade treaties. In the food domain, Hayes-Conroy and Hayes-Conroy (2013:86) have proposed a 'political ecology of the body' which effectively combines "structural forces (e.g. asking about the social inequities that preclude certain bodies from purchasing certain foods), discursive (e.g. asking about the social processes through which knowledge about what healthy is comes into being), and material (e.g. asking about the material relationships of daily life that both reinforce and/or resist these structural and discursive patterns)." This relational ontology takes seriously everyday embodied production and consumption practices and affective/emotional relationships as processes in and through which broader political economic forces underpinning neoliberal globalised food systems take shape and are constituted (p.88). Thus feminist PE is not only concerned with multiscale gendered power relations but also seeks to reconsider how nature is understood as a subject on its own right (Elmhirst, 2015). Ideas around post-humanist relational ontologies have also been taken up to move from an analysis of interactions to focus on flows between and through human and non-human natures, for example by exploring metabolic flows associated with food (Guthman, 2011). Indeed, actors - or winners and losers of environmental conflicts - are not only restricted to individuals or communities. Non-humans, that is, the environment itself can also suffer injustices. These dynamics are

untapped in the recent book 'The political ecology of meat' (Emel and Neo, 2015) which analyses the root of marginalization in political-economic institutions of animals that are converted into meat by looking at how power structures and knowledge of the global meat trade are reproduced, as well as discussing the socio-natural implications of meat production and consumption practices.

The focus of PE on socio-ecological relations has been particularly suited to support the expanding field of agroecology, broadly defined as the ecology of food systems, that is, a field of innovative practices for agro-ecosystem management and social mobilisation dedicated to transforming food systems to sustainability (Altieri, 2002; Altieri and Toledo, 2011; Francis et al., 2003). Both, agro-ecology and political ecology embrace an understanding of science, nature and society as co-evolving. Recently, Gonzalez de Molina (2013) proposed the concept of political agro-ecology, as the application of political ecology to the field of agroecology. This concept builds on early conceptualisations of PE in order to draw attention to how power relations (such as class and gender) result in uneven access to natural resources and ecological degradation (Peet and Watts, 1996), and also calls for greater political and institutional engagement of agro-ecological practitioners in the governance of the food system.

c) Problematising the production of knowledge and creating new spaces of possibility

The centrality of nature in PE analysis extends to natural sciences perspectives and findings, incorporating these sources of evidence with innovative ways of understanding ecological systems. However, in PE ecological sciences are also a subject of critical analysis. PE has been successful in problematizing the category of 'environment' as well as the production and utilization of environmental knowledge,

examining why and how particular forms of knowledge predominate (Watts, 2003 cited in Walker, 2005). One early example is Turner's (1993) study of pastoralists in Sahel which challenged long-standing beliefs on bio-physical conditions as the sole cause for changes in cattle population, pointing out the interest in the local population of covert accumulation in the form of cattle. More recently, Lawhon and Murphy (2012) mobilised PE to illustrate how in the Genetically Modified Organisms (GMOs) arena bio-physical processes merge with a contentious debate on knowledge creation and the politics of science, which constitutes a key element in gathering anti-GMO support and conditions the final regulatory outcomes. Guthman (2012) has also contested the politics of disease construction around obesity based on eating patterns and exercise, calling for a better understanding of science interpretations and body ecologies. By exposing these paradoxes, political ecology contributes to the understanding of unjust and unsustainable socio-natural mechanisms. In short, PE scholars call for a more politically aware scientific knowledge that is contextualized geographically, culturally and historically (Forsyth, 2003; Neumann, 2005).

The contextualisation of knowledge creation calls for a critical appraisal of the geographies of political ecology, that is, the directions the field has taken in different places and institutional settings inevitably conditioned by the current neoliberal academic regime dominated by Anglo-Saxon outlets. Perreault et al., (2015) rightly point out how political ecology is the dominant form of nature-society geography in North American Anglophone academy while it remains at the radical margins in Europe. In food studies, we find a similar geography of this production of knowledge. Indeed, the North American scholarship has spearheaded critical approaches working at the interface between social justice and sustainability, particularly in analysis of food

movements (Allen, 2008; Allen et al., 2003; DeLind, 2011; Guthman, 2008a, 2008b; Holt Gimenez and Shattuck, 2011) compared to its European counterparts. Goodman (2004a) illustrated these differences challenging the European rural development model based on AFNs as something of an idyll. However, within Europe, other geographies such as Mediterranean countries have also questioned the actual spread and potential of Anglo-Saxon theorisations, particularly given the spatial unevenness of agri-food systems (Moragues-Faus, 2016).

More broadly, political ecologists are preoccupied with the decolonization of knowledge production, including within their own discipline. There is a regional geography of political ecology rooted in historical relations, ecological and cultural conditions characterized by

“[an] Anglophone political ecology[that] takes socio-environmental transformations of the Third world as critical themes and privileged objects of study (...) regarding the impacts of power on socio-environmental relations”, while the “political ecology of the South is inserted in processes of emancipation (...), constructed as a discursive amalgam of academic and politic actors, as a dialogue of knowledges between theoretical thought, participatory research and the social imaginaries of the people, in alliance with resistance movements and their political strategies for emancipation and reappropriation of their biocultural legacy.(Leff, 2015: 70)”

These works highlight the relevance of place-based approaches in understanding *socio-natural* relations but also in problematizing *knowledge co-production processes* and their strategic and prospective purpose.

As highlighted above, political ecology holds a long tradition as a critique, exposing the role of power in shaping socio-natural relations that reproduce inequality and injustice. These critical evaluations are liberating, since they include multiple perspectives on ecological change which result in more inclusive interventions on the environment but also difficult the design of practical initiatives and policies (Neumann, 2005). However, as Walker (2006) and many Latin American political ecologists state (see Leff, 2015), critique is not sufficient; political ecologists should (and many actually do) engage in envisioning and nurture more sustainable and just futures, creating the grounds for new spaces of possibility to emerge (Cornwell, 2012; Gibson-Graham, 2006). Indeed, if one of the core themes of political ecology is uneven access to resources among different populations, a key challenge is to create more symmetrical relations within and beyond academic spaces. From these concerns emerges the idea of political ecology as a community of practice, that is, an heterogeneous constituency invested in theory and practice (Robbins, 2012).

The food scholarship has explored political possibilities of alternative food networks and more broadly food movements such as peasantries, slow food or food sovereignty initiatives. Notwithstanding, many of these accounts could be further embedded in broader conceptual frameworks of social change and benefit from establishing a prolific dialogue with those theoretical approaches that are open to difference, developing an economic and politic language that assess initiatives and their context outside capitalist parameters (Gibson-Graham, 2006; Graham, 2009). A telling example is the marginalization of self-provision practices compliant with sustainability principles in the food literature in favor of market-based alternative food systems, as illustrated by Jehlička and Smith (2011) in the case of the Czech Republic. Recent contributions are

exploring how these connections might take shape contributing to the development of transformative social movements mainly under the food sovereignty umbrella (see special issues in *Third World Quarterly* vol 36 and *Globalizations* vol 12) and fostering egalitarian and emancipatory food politics (Moragues-Faus, 2017b).

3. Thematic and theoretical turns in food studies: revealing the missing middles

In this section, we conduct a critical reading of key food studies literature which allows exploring intersections with the political ecology scholarship as well as identifying thematic and conceptual hidden or “missing middles” to be addressed in a new food agenda.

Since the 80s political economy has been a key approach in agri-food studies, when these perspectives opened up the more complex relations of capital and space in the food system (see Marsden et al., 1996). Buttel (2001) describes the sociology of agriculture in the 90s as the sociology of agri-business where global analysis was at the core of the research (see seminal pieces such as Bonanno et al., 1994; McMichael, 1994). This global perspective of agrarian political economy gave birth to the work on food regimes, based on world-historic and systemic analysis (Friedmann and McMichael, 1989), which nowadays continues incorporating new elements such as social movements, ecology or nutrition (Dixon, 2009; Giménez and Shattuck, 2011). The recent food and financial crisis (2007-8) has prompted a re-emergence of food regimes analysis in front of simplistic explanations for example of food price volatility, identifying old and new roles of food and agriculture in the construction and transformation of capitalism (McMichael, 2012; Sage, 2013).

On a more micro scale, researchers have also extensively engaged in the last decades on the study of farmers strategies, constituting as a key issue in agri-food studies (see Moragues-Faus (2014) for a review) which has evolved from neoclassical and classic Marxist approaches to the acknowledgement of farmers' *agency* (see for example actor-oriented approach by Long, 2001, 1990). An important strand of work around this theme has been the vitality of Peasant Studies, which inspired seminal *structuralist* political ecology works, particularly Blaikie and Brookfield's (1987) account of land managers' behaviour as shaped by economic, ecological and political marginalization. Approaches to understanding farmers' strategies were also infused by the cultural turn in rural studies, which influenced the emergence of behavioural perspectives through concepts such as identity and symbolic meaning (Burton, 2004; Yarwood and Evans, 2006) although with less repercussion in the field.

Galt (2013) argues that this vitality of agrarian political economy in the Global North has prevented food scholars to engage with political ecology, which is broader in topical and geographical coverage. Particularly, scholars have pointed out the lack of concern for the *consumption* sphere in agri-food research which traditionally located power primarily on the *production* side, and therefore led to a limited understanding of socio-natural configurations that make up the food system (Goodman and DuPuis, 2002). However, post-modern or post-structuralist trends in social science influenced the re-discovery of consumption in agri-food studies (Winter, 2003b), also linked to post-productivist conceptualizations around the consumption of the countryside in Europe (Evans et al., 2002; Ilbery and Bowler, 1998; Marsden et al., 1993). Notwithstanding, Goodman and Redclift (1991) warned of an excessive attention to the "semiology of food consumption (...) to the detriment of a wider understanding of the social

transformations implied by the economic and technological changes in the food system” (p.242). An excessive focus on consumption has also fuelled views that assume consumers are responsible for their behaviour and, in turn, on the broader sustainability of the food system (Cook et al., 2011).

Precisely, the *thematic turns* between consumption and production spheres have also emphasized research on individuals rather than social determinants, contributing to obscure the major role that the State and private sector play in delivering sustainability and social justice (Dowler and O’Connor, 2012; Hobson, 2002). Phenomena such as the strikes of US fast-food workers in 2013 for a living wage^{iv} or reports on food chains workers’ rights (Compa, 2005), reveal the urgent need to tackle the diversity of actors and processes operating between production and consumption spheres. Uncovering further this ‘missing middle’ beyond the study of short food supply chains (see Holloway et al., 2007 and Reardon, 2015) is seen as necessary to move beyond polarized narratives and grasp the complex dynamics between sustainability and food security (see for example Sonnino et al., 2014). A wake-up call has been encapsulated in the rise of users of emergency foods (i.e. food banks) associated with the ‘crisis’ and shrinking of social services (Lambie-Mumford et al., 2014), but in many cases overlooking root causes of food insecurity. For example, Minkoff-Zern(2014) illustrates these disconnections by revealing how agribusiness benefit from food assistance programs available to their farmworkers in California. The establishment of these reconnections through historical and *multi-scalar analyses of power and inequality* is paramount, for instance in the UK food poverty is increasing, pushing the debate around food prices and affordability, while at the same time statistics reveal 25% of UK farmers are in poverty (Food Research Collaboration, 2014).

Efforts have been made in order to supersede the imbalances between production and consumption in the literature presented above proposing different *analytical tools*. For example, Lockie and Kitto (2000) pointed out the need to reject the modernist ontology that has assisted a tendency to dichotomize key concepts such as *structure and agency*, or *nature and social*(Goodman, 1999), uncovering other conceptual ‘missing middles’ in food studies. The espousal of Actor Network Theory (ANT) has been instrumental in allowing progress from production centered analysis, claiming a more symmetrical approach to food production-consumption networks (Lockie and Kitto, 2000). Inspired by ANT, proposals to start ‘following the thing’ succeeded (Cook, 2006; Freire de Sousa and Busch, 1998). These proposals partly stemmed from criticisms and frustrations of classical (structuralist) political economy approaches, recently shared by PE scholarship (Heynen, 2015; Holifield, 2009), particularly around the reification of corporate actors and their institutions and the passive role or even *omission of nature*(Busch and Juska, 1997; Goodman, 1999). Precisely, this strand of proposals aligns with PE and aspire to formulate a radical politics of nature-society, through a framework that considers a “dual set of metabolic relations: eco-social production and human food consumption” (Goodman 1999;17).

Whilst recognizing the importance of more symmetrical and hybrid approaches in attempting to incorporate nature, other authors have warned of the potential by-pass of socio-economic, political issues and social inequalities under post-structural and cultural geography approaches (Gregson, 1995; Winter, 2003b) that PE stresses. For example, Marsden et al., (2001) rely on the concept of co-evolution as a means to move away from constructivist notions of symmetry and highlight the reliant co-development

of society and natural factors (Norgaard, 1994) in line with the concept of *socio-natures* (see section 4). Recently, in search of hybridity, Robbins (2012) calls for a revised political ecology that opens its explanatory lens to allow the possibility of significance of non-human influences, as advocated by more-than-human approaches, but avoiding preconceiving them as banalities or assuming a pre-given central role in every situation. This problematisation of power in socio-natural configurations could enrich ongoing debates on nature–society and ‘more- than- human’ relations (Castree, 2002), particularly on food geographies ‘visceral turn’ (Goodman, 2016). What PE offers is the capacity of integrating nature more fully in understanding food (in)security dynamics without depoliticising those analysis and their fatal implications, i.e the reproduction of inequality.

This section has explored academic debates on the distinct thematic and conceptual middles in agri-food research. On the thematic front, there is a need to address further the processes between production/consumption spheres as well as the interactions between different – and in many cases hybrid - constituencies such as the role of the State or the different forms of private actors. In terms of conceptual missing middles, a deeper exploration of scalar interactions, agency/structure, and society/nature interfaces could enrich the contribution of food studies to expose the socio-natural processes that (re)produce inequalities, exclusion and injustice between people and places ultimately underpinning the current geography of food insecurity. While there is ongoing work partially addressing some of these gaps, we argue for a fuller engagement with these middles and contradictions to progress towards integrative, critical and emancipatory food research agendas.

4. Building blocks of critical food scholarship

So far, we have highlighted some contributions and pitfalls on the evolution of agri-food research including the bypass of different 'middles' and stressing the importance of effectively integrating nature, power and politics into current analysis including knowledge creation. In this context, a revised political ecology is now progressively gaining momentum in agri-food studies, from more traditional agrarian political economy perspectives to urban political ecology (Heynen et al., 2012; Peet et al., 2011), building on its heterogeneity and also being cross-fertilized by different theoretical perspectives (Walker, 2005; Heynen, 2015). However, there is a need to establish clearer connections between the expansive food studies literature and political ecology debates in order to build a refreshed critical food agenda. We progress on this endeavour by highlighting how these two strands of work can be enriched through a focus on place-based socio-natures that explicitly address multi-scalar politics producing inequalities and a commitment to co-producing knowledge and change.

a) Understanding place-based socio-natures

Dominant conventional agri-food narratives have tended to detach food and agriculture from their ecological basis, reinforcing the construction of a placeless foodscape. In this context, as similarly happened with the re-interpretation of the city as socio-natural and the associated impediments to engaging with urban ecologies (Blaikie, 2008; Braun, 2005; Heynen, 2015), food studies would benefit from a further reconnection and inclusion of the politics of nature (Goodman, 1999) to re-embed food's materiality,

agency and meaning in place. The concept of *socio-nature* as mobilised by political ecologist is particularly suited to this endeavour.

The literature on socio-natures examines how nature and society are materially and discursively co-productive of one another, and aims to understand the historically situated process through which this co-production occurs (see Alkon, 2013: 663). Food, as “the mixture of the organic and the inorganic, the material and the symbolic, and the social and the natural” (Murdoch, 2005:160), embodies this co-production and, as such, has much to contribute to the PE agenda. However, while the literature on socio-natures is expanding, particularly in the urban realm (Newell and Cousins, 2015), it remains restricted in the food domain (see exceptions (Alkon, 2013; Shillington, 2013; Watts and Scales, 2015)). When studying socio-natures, political ecologists pay particular attention to different forms of labour as the primary way in which humans mediate the metabolisms between themselves and nature (Heynen et al., 2006). This perspective departs from the recognition that “uneven socioecological conditions are produced through the particular capitalist forms of social organisation of nature’s metabolism” (Swyngedouw and Heynen, 2003:910).

Place-based examinations of socio-natures could expand and connect key areas of food work. First, the concept of socio-natures from a PE perspective could be instrumental to revisit the conceptualisation of nature in food studies and establish productive linkages between more-than-human perspectives and work invested in the political economy of the agri-food system. A fuller analysis of socio-natures might contribute to contesting the agro-industrial model based on modernist approaches that conceive food (and nature) as inanimate matter; which, as Bennett claims, has political consequences, possibly being “one of the impediments to the emergence of more ecological and more

materially sustainable models of production and consumption” (Bennett, 2009:ix). For example, in a recent study Alkon(2013:665) highlights that a deeper understanding of socio-nature might lead supporters of local organic food to pose broad questions “about who is producing what kind of food (and through it, what kind of nature), for whose benefit, and to whose disadvantage” and ultimately help envision a transformation of the industrial food system into one that is both environmentally sustainable and socially just. Furthermore, place-based analysis of society-nature relationships could reveal how resistances and alternatives involve different views about nature and are spatiality linked to ways of being, knowing and living in specific territories, as illustrated by works with indigenous peoples(see for example Ulloa, 2015). Consequently, a political ecology of food opens up and politicises the categories of environment and society to embrace the diversity of lived experiences and cosmo-visions that exist within our food system.

The concept of socio-nature could also inform a reconnection of food’s meaning, materiality and agency in place. In recent years, food scholars have widely explored the role of discourse and framings in (re)creating neoliberal or alternative food configurations (see for example (Brunori et al., 2013; Kirwan and Maye, 2013; Moragues-Faus, 2017a; Sonnino et al., 2016)).But, as Slocum and Saldanha (2013) highlight, there is also a need for a political ecology of food attuned to the ways socio-ecological injustices are globally constituted through material and bodily differences. This includes fully exploring the conceptual but also material ‘missing middles’ between production/consumption spheres and society/nature relations identified above, including the different actors and forms of labour that produce the metabolism of food insecurity and unsustainability. A clear example is the need to investigate further (but

also experiment with) the social and physical infrastructures that might support the development of sustainable and just food systems – such as food hubs or technologies that facilitate the creation of distributive food economies.

b) Addressing the politics of scale and inequality

There is an increasing body of work critically appraising current food insecurities and unsustainabilities as presented above. By mobilising a political ecology approach, critical food studies could expand in terms of coverage of topics, their geography and, particularly, incorporate more broadly a sensitivity towards structural inequalities at play in re-configuring socio-ecological systems. In many instances, as Slocum and Saldanha (2013) put it in the case of race and food, these critical theory tools are generally just added as an ‘afterthought’.

For that purpose, political ecology provides a means to integrate and problematize socio-natural processes, re-configuring current food systems with stronger emphasis on power relations and political content. For example, a political ecology of food would investigate how human-nature metabolisms produce both enabling and disabling social and environmental conditions that contribute to or hinder the access to ‘good food’ for certain groups. As Swyngedouw and Heynen (2003:911) highlight, PE pays “particular attention (...)to social power relations— whether material or discursive, economic, political and/or cultural— through which socio-environmental processes take place and the networked connection that links change in one place to socioecological transformations in many other places”. This analytical lens allows addressing the politics of scale - as socially constructed, relational, contingent, and contested (Neumann, 2009) - that produce the grounds of the current agro-industrial food system.

In analysing how ecologies are connected to social power at different scales, PE perspectives display a wide range of methods and focus that could inform food studies. Of particular importance is the work of political ecologists on urban metabolisms - defined as the “circulatory processes that underpin the transformation of nature into essential commodities such as food, energy and potable water” (Gandy 2004:374) - that investigate for example the production of class and inequalities through water provisioning at the city level (Swyngedouw, 1995) or hunger (Heynen, 2006; Heynen et al., 2012). Similarly, Marvin and Medd (2006) investigate 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 into the relationship between food insecure bodies and the urban form, showing how these metabolisms create socio-ecological conditions that are beneficial for some and detrimental to others. These scalar articulations in the food system would expose the capabilities of social groups to contribute to the food metabolism (Swyngedouw and Heynen, 2003), and therefore enlarge our understanding of current socio-natural configurations as well as the means to alter them.

In investigating the politics of scale and inequality, the increasing field of everyday practices and micropolitics of control championed by feminist political ecologists can also provide new insights mainly by highlighting how local inequalities are forged from the body to the household, community, city, region and global level (see Elmhirst, 2011; Truelove, 2011). For example, Ker (2014) through an examination of indigenous crops in Malawi shows how intersectionality of gender, class, and other subjectivities at different scales produce particular agricultural landscapes. An improved focus on the

micropolitics of food will be welcomed to embed the numerous specific place-based research on food initiatives socially, ecologically and politically.

Finally, addressing the politics of scale and inequality shaping and being shaped by the current agri-food system requires reappraising how current research deals with conflict. In the last years, there has been an increasing body of work around food security as a consensus frame (Mooney and Hunt, 2009; Moragues-Faus, 2017a) –that is, as a term that finds broad acceptance but that is used to make different claims, from supporting genetic engineered technology to advocating for land reform - which has substantiated calls for integrated and consensual multi-stakeholder policy spaces, from cities to international fora. From a political ecology perspective (Swyngedouw, 2007), this approach might contribute to de-politicising the socio-environmental configurations and associated governance structures that create poverty and inequality in the first place, by generating an exclusionary form of consensus that avoids critical debates and developing a managerial approach to democracy based on ‘expert’ knowledge and controlled public participation. Ultimately, the exploration of conflict in food studies still requires a wider awareness of the politics at play championed by political ecologists and other approaches, as illustrated in many critical works on alternative food movements (Busa and Garder, 2015; Guthman, 2008a, 2008c; Guthman and DuPuis, 2006; Johnston et al., 2009; Moragues-Faus, 2017b; Wilson, 2013; Zitcer, 2015) or more recently problematising multistakeholder spaces for food security (McKeon, 2017; Moragues-Faus and Morgan, 2015).

c) Co-production of knowledge ... and change?

Current food research will benefit from building on and integrating a critical political ecology in order to challenge simplistic separations of science and politics, adopting a

more politically aware understanding of the contexts and geographies within which explanations or solutions emerge (Forsyth, 2003; Sheppard, 2015); for example, and especially since the crisis of 2007-8, by assessing the political constructions of the current food security statements and framings. A revised critical food scholarship could build on political ecology's ambitions to "open up the category of the environment itself and explore its multiform representations" such as examining "knowledge of the environment and why and how particular forms of knowledge predominate" (Watts, 2003 cited in Walker, 2005:78). As Guthman (2012) recently argued through an analysis of existing assumptions about obesity's etiology (mainly an excess of calories ingested), a critical political ecology should expand the challenge of environmental orthodoxies to include bodily ecologies, highlighting the need for examination "beyond common sense" (p.956).

As the ongoing global food crisis unfolds, it is particularly pertinent to acknowledge the diversity of tensions and interests arising around science between food markets, state and society; with particular scientific knowledges being an increasing "source of information and a claim to power and influence" (Zimmerer and Bassett, 2003:281). Technological innovations and competing scientific knowledge claims are becoming central elements in food system dynamics and their governance. This is clearly illustrated for instance by biotechnological advances in the seed industry and the recent debates on regulating seed exchanges in EU^v. Questions such as how sustainability outcomes are prioritized and by whom emerge as key elements in shaping what the right course of action is judged to be (Garnett and Godfray, 2012). Consequently, by incorporating more actors and knowledges, critical PE perspectives become key in

unpacking conversations in the growing and contested food security and sustainability debates.

However, many political ecologists are concerned not only about inviting more perspectives to the conversation, but actually problematizing what knowledge is produced, how, by whom, based on what (or whose) epistemologies, and how knowledge is accessed and used. An increasing political ecology community of practice - involving actors such as academic-activists and activists-academics- is inviting us to reflect on academic praxis and ethics in order to unpack power relations and privilege within knowledge production processes. Among others, this includes engaging with action-research and knowledge co-production processes that already are expanding in the food scholarship (Cuéllar-Padilla and Calle-Collado, 2011; Pallett and Chilvers, 2013). In this matter, work on food and embodiment, the diverse economies of food, and more-than-human food geographies are bringing in innovative perspectives and methods to food studies (see Sarmiento, 2016 for a recent review). For example, the analysis of visceral encounters embraces food differential power to affect bodies, that is, how bodies feel food and the potential for change associated with these experiences (Cook et al., 2011; Hayes-Conroy, 2010; Roe, 2006a, 2006b). A critical political ecology of food then would explore new methods based on an ethics of entanglement that reflects on and “takes responsibility for the epistemological and ontological worlds we enact through the everyday practices entailed in academic research” (Sundberg, 2015:120), providing spaces for different ways of experiencing and conceptualising society-nature relations. This responsibility urges us to explore ways of transforming research agendas into emancipatory agendas for change.

Consequently, in using political ecology repertoires, critique alone does not imply and is neither sufficient to produce significant policy changes (Walker, 2006). There is also a need to create counter and equally compelling normative narratives which can indeed begin to reconstruct a more democratic and inclusive food politics and sovereignty. Returning to the politics of the possible, as we see below, and ‘giving name to our desires’ (Badiou, 2008; Swyngedouw, 2014), implies new forms of engagement from food scholars, as well as approaching openly and critically proposals and radical visions such as food democracy or food sovereignty.

In this section, we have presented three building blocks of a critical food scholarship that guide a new research agenda. We aim to contribute to the shared need of both political ecology and food scholarships to “*theorise up*”(Bebbington, 2003). As Walker (2006) warns, paralleling much of the food literature, a large proportion of current PE focuses on individual place-based case studies with few efforts for theoretically informed comparative analysis or integrated regional or global works. This “theorising up” requires common concepts and questions that will allow us to contribute to different bodies of work but also engages with regional or global processes and their political arenas. The table below summarises key research questions that emerge for a renewed political ecology of food.

Building blocks	Research questions
Understanding Place-based socio-natures	<p>How are nature and society materially and discursively co-productive of one another? How does this place-based and historically situated process of co-production occur?</p> <p>What are the different conceptions and lived experiences of nature at play? How can we empower decolonizing and emancipatory categorisations of society-nature relations?</p>

	How are discourses, materialities and agencies of food reassembled to deliver a more sustainable and just food system? What social and physical infrastructures are needed to modify current metabolisms of food insecurity?
Addressing the politics of scale and inequality	<p>What are the processes through which uneven socioecological conditions are produced?</p> <p>Who does what, who gets what, what do they do with it and how is then power (re)distributed?</p> <p>What are the social power relations through which socio-environmental processes that result in food insecurity and unsustainability take place and how are these processes linked across scales and territories?</p>
Co-producing knowledge and change	<p>What knowledge is produced, how, by whom, based on what (or whose) epistemologies, and how knowledge is accessed and used?</p> <p>How do we (the heterogeneous political ecology community of practice) conceptualise and enact transformations in the food system across different groups?</p> <p>How does our research relate to emancipatory food agendas? What are the processes, methods, ethics and forms of entanglement that allow researchers to contribute to these agendas?</p>

5. Opening up spaces of possibility: analysing cities and Food Sovereignty under a political ecology lens

In this section, we analyse two mobilizations which are striving to create new ‘spaces of possibility’ in the food domain: the *emergence of cities as food policy actors* and the *Food Sovereignty movement*. Both mobilizations promote key conceptual challenges linked to political ecology agendas, mainly around nature (problematizing the socio-ecological relations within the food system in an increasingly urbanized world) and power relations (by highlighting control, multilevel decision making and politics at play in configuring socio-ecological systems and food security outcomes). Furthermore, cities represent a relatively new landscape for food studies which have mainly been devoted to rural/agricultural aspects and can benefit from the recent expansion of urban

political ecology. The focus on cities reinforces the materiality brought forward by political ecology in contrast with the more discursive and transformative commitment represented in the narrative and aims of the food sovereignty movement. By discussing these distinct examples, we illustrate how a revised critical food scholarship could advance towards a new research agenda through the three building blocks identified above.

a) Cities as food policy actors

Cities have emerged as new food policy actors around the globe, reasserting their role and responsibility to shape a more sustainable and just foodscape (Morgan and Sonnino, 2010; Pothukuchi and Kaufman, 1999). The recently signed United Nations New Urban Agenda^{vi} committed leaders “to promote the integration of food security and nutritional needs in urban and territorial planning in order to end hunger and malnutrition”.

Research on cities in the food literature is exploding, with a strong emphasis on the analysis of the discursive turn in food as an urban issue (Blay-Palmer, 2009; Clayton et al., 2015; Halliday, 2015; Moragues et al., 2013; Scherb et al., 2012; Schiff, 2008). This reframing of urban food has highlighted the role of interconnected urban scales (from megacities as London to small towns) as key spaces to develop food policies and championed the integration of new actors and discourses into food policy debates (e.g. public health, urban planning). The emergence of sustainable food cities in many cases implies developing urban food strategies alongside the creation of new spaces of deliberation such as food policy councils where civil society, private actors and local government meet to envision a food system that delivers good food for all (Moragues-Faus and Morgan, 2015).

A critical food scholarship could contribute to this new urban food agenda, first by providing an understanding of cities as metabolic vehicles constituted in and through the metabolic circulation of socio-ecological flows or socio-natures (Cook and Swyngedouw, 2012), such as food. This critical scholarship could examine how the new urban food agenda builds an imaginary of what is a sustainable food city and its socio-ecological and political implications; including the risks of reproducing colonising conceptualisations of success, sustainability or the urban form, rather than empowering place-based imaginaries and trajectories that accommodate the diversity of needs, particularly of those at the margins of the food system. In the current context where city-alliances- such as the Milan Urban Food Policy Pact signed by 140 cities worldwide- are multiplying, championing these place-based specificities and indigenous conceptualisations is crucial. Consequently, an urban political ecology of food urges us to pay particular attention to the intersections between these new sustainable food city discourses and the material conditions they emerge from and intend to transform. Key questions include how these new discourses are (or could be) linked to place-based lived experiences of food deprivation and enjoyment, and what type of agencies they promote to deliver more sustainable and just food systems.

Secondly, there is a need for critical appraisals of the processes through which uneven urban socioecological conditions are produced and their relations with proximate but also distant geographies. The new urban food agenda is concomitant to the historical role cities have played in configuring the current agri-food system – as centres in need of cheap labour and food - and are a constitutive part of the expansion of capitalist forms of accumulation and neoliberal relationships (Dixon and Richards, 2016; Heynen et al., 2006). In this line, investigating food metabolisms in cities allows mobilising a

place-based perspective that includes multiple *scales and geographies*. Among others, focus on these metabolic relations could progress timely debates on urban-rural linkages(see Blay-Palmer and Renting, 2015) by developing a more complex understanding of geographical interdependencies.

Finally, the urban food agenda is experimenting with building new alliances and spaces of deliberation, from food policy councils to national and international city networks, building on consensus frames such as sustainability and food security. A PE perspective could start to question if these new spaces account for or promote a shift over the flows of goods and bads associated with the food system that create uneven exposure, risks and possibilities. This includes mapping better the multiple governance dynamics surpassing, affecting and being affected by these emerging spaces and alliances. Food researchers thus need to critically question the transformative potential of these new spaces of possibility and their risks of creating “political idylls of achieving the common good by an enlightened government of elites” (Rancière, 1998:93). This criticism also reveals the need for engaged research that contributes to elucidate what organizational forms are required to enact effective transformations and what is the role of researchers in this new landscape.

b) Food sovereignty

The notion of Food Sovereignty was first launched by La Via Campesina in 1996 at the World Food Summit (Via Campesina, 1996), nowadays being popularized as “the right of peoples to healthy and culturally appropriate food produced through sustainable methods and their right to define their own food and agriculture systems” (Nyéléni, 2007). La Via Campesina was founded three years before, with the aim to constitute an

international peasant movement that could counteract the globalized agri-business model (see for a genealogy of the movement Martínez-Torres and Rosset(2010)). At the moment, la Via Campesina comprises 164 organizations in 79 countries representing around 200 million farmers(Via Campesina, 2014)and it has become a key actor in international food debates becoming the principal civil-society interlocutor with FAO (Wittman et al., 2010).

Following the analytical framework proposed in section 4, a critical food scholarship would engage in understanding how the historically situated process of co-production of nature and society constructs distinct foods and power geometries as well as underpins different place-based visions for the food system, including food sovereignty. As Alonso-Fradejas et al., (2015:444) highlight, “food sovereignty needs to adapt to the political, social, and cultural rhythms of local peoples”, and those rhythms require further scrutiny within and beyond the movement. Furthermore, exploring and empowering the different conceptualisations of good food in communities around the world will contribute to decolonising categories such as nature, peasant or farmer in the wider academic, policy and social movement fora; and at the same time, reject idealised notions within alternative and conventional food system supporters that might obscure oppressive relations on the ground -in many instances based on ethnicity, gender and class differences – and therefore hinder emancipatory categorisations of society-nature relations.

Building on Wittman’s (2009) exploration of how agriculture has been integrally associated with successive metabolic ruptures between society and nature, the food sovereignty field could gain new insights from exploring the metabolism of food in more depth. On the one hand, a thorough examination of the different labours invested in

producing, transporting, storing, transforming, cooking, consuming and disposing food will provide a fuller account of the ways in which unjust socio-ecological configurations are constructed and who are the main actants in these processes. This includes the potential of establishing broader alliances with other groups at the margins of the socio-economic system, but also calls for further exploration of the so called conventional food system and its powerful stakeholders. On the other hand, a focus on the metabolic circulation of food can shed light in the cross-scalar relationships that constitute and affect the food sovereignty movement, but also help to move beyond North-South and urban-rural divides. A key question for this increasingly diverse international movement revolves around how knowledge is co-produced and made accessible within and beyond the movement, and particularly, what types of tools and agencies are required to establish inclusive linkages between different epistemologies and place-based struggles to enact food system transformation.

The Food Sovereignty movement as well as urban food initiatives could be considered part of a globally emergent form of translocalised politics, a “place-based globalism” (Osterweil, 2005), where actors have an “identity embedded in local circumstances and a role in the global dialogue. And this dialogue exists in service of the local.” (Osterweil, 2004:113; cited in Gibson-Graham, 2006:xxi). This scalar geometry and distinct emerging political ecologies call for a food scholarship that breaks up with the unifying blanket of productivist analysis and agendas, highlighting uneven socio-spatial and political configurations. There is a need to problematize anthropogenic understandings of food, energy and climate change crisis which prescribe individual behaviour interventions and engage with a socio-economic-genesis explanations based on the interaction between diverse political ecologies throughout time (Harvey, 2014).

5. Conclusions: Repositioning critical food geographies at a time of food and ecological crisis

The continuing food, fuel, financial and fiscal crisis has created a new exposure to the real contested politics and governance of scarce resources. The new juncture requires urgent attention in order to contest the current distribution of rights and responsibilities resulting in unequal access to both the production and consumption of food. There is then an opportunity for a more politicized scholarship of agri-food which takes both a critical and normative stance that serves as an umbrella for different lines of inquiry. In this paper, we have suggested progressing in this endeavour by mobilising a political ecology approach. The result is the identification of key tenets of a critical food scholarship focused on understanding place-based socio-natures, explicitly addressing multi-scalar politics producing inequalities and committed to co-produce knowledge and change. This serves, we argue, to set a renewed relevance and research agenda upon the politics and thereby the political ecology of place and nature with regard to food (see table 1 above).

Since 2007, and with the benefit of this scholarly hindsight, we can thus see the need for a re-politicization and socialization of agri-food research in ways which also opens up *the politics and spaces of the possible* for a wider range of key actors in the food system. We have focused in the last part of the paper on two examples: urban food and food sovereignty movements. These dynamic spaces are key to contrast and contest the overwhelming dominant framing of the crisis adopted by the broader natural and economic sciences in the form of a renewed and pervasive neo-productivist reductionism, whereby food security concerns become too narrowly framed around increasing the quantum of production whilst managing sustainability concerns through

high rationalist means (see Wolpert and Rothwell, 2014). At the same time, this dominant framing serves to reduce and marginalize the social, spatial and political basis of food production, processing and consumption to questions of public and consumer acceptability to the onset of more novel scientific techniques in 'solving' the food security and sustainability problems.

Rather, to follow Gibson-Graham's (2006) challenge, a critical food scholarship should be the harbinger of a more inclusive ontological reframing to produce the variable grounds of possibility for a far more socially and ecologically diverse food system that contest the overarching hegemonic framing of objectives and values. This entails a critical scholarship being instrumental in order to contest the hegemony of dominant representations (Blomley, 2006); and to develop competing narratives based upon critically scientific stances. Recalling Castree and Wright(2005:7) "The world cannot represent itself; it must be represented!". We need to develop techniques of creativity so as to cross-fertilize the field with perspectives from different critical domains, like political ecology, heterodox economics and social and political theory which helps build post-neo-liberal perspectives. This is particularly urgent at this current juncture given the renewed political and scientific attention being given to the 'global food security problem'; and the challenges this brings for wider and critical food scholarship. Now, this scholarship can no longer afford to operate in some sort of political-economic vacuum, or rely solely upon presenting ideographic cases of real alterity. Rather it needs to build upon these past experiences and progress a far more embedded location in the political and scientific debates around food and nature; and project a framing for such science and politics which is far more inclusive and publicly engaging.

References

- Alkon, A.H. (2013), "The Socio-Nature of Local Organic Food", *Antipode*, Vol. 45 No. 3, pp. 663–680.
- Alkon, A.H. and Agyeman, J. (2011), *Cultivating Food Justice: Race, Class, and Sustainability*, MIT Press, Cambridge, MA.
- Allen, P. (2008), "Mining for justice in the food system: perceptions, practices, and possibilities", *Agriculture and Human Values*, Springer Netherlands, Vol. 25 No. 2, pp. 157–161.
- Allen, P., FitzSimmons, M., Goodman, M. and Warner, K. (2003), "Shifting plates in the agrifood landscape: the tectonics of alternative agrifood initiatives in California", *Journal of Rural Studies*, Vol. 19 No. 1, pp. 61–75.
- Alonso-Fradejas, A., Borrás, S.M., Holmes, T., Holt-Giménez, E. and Robbins, M.J. (2015), "Food sovereignty: convergence and contradictions, conditions and challenges", *Third World Quarterly*, Routledge, Vol. 36 No. 3, pp. 431–448.
- Altieri, M.A. (2002), "Agroecology: the science of natural resource management for poor farmers in marginal environments", *Agriculture, Ecosystems & Environment*, Vol. 93 No. 1–3, pp. 1–24.
- Altieri, M.A. and Toledo, V.M. (2011), "The agroecological revolution in Latin America: rescuing nature, ensuring food sovereignty and empowering peasants", *Journal of Peasant Studies*, Taylor & Francis, Vol. 38 No. 3, pp. 587–612.
- Badiou, A. (2008), "Communist hypothesis", *New Left Review*, Vol. 49, p. 29.
- Bebbington, A. (2003), "Global networks and local developments: agendas for development geography", *Tijdschrift Voor Economische En Sociale Geografie*, Vol. 94 No. 3, pp. 297–309.
- Bennett, J. (2009), *Vibrant Matter: A Political Ecology of Things*, Duke University Press, Durham and London, available at: http://books.google.co.uk/books?hl=en&lr=&id=Vok4FxXvZioC&oi=fnd&pg=PR5&dq=bennett+political+ecology&ots=lyPEExbvWR&sig=5ka28kkvvo59Cw3Lu_3DAE2oHSY (accessed 30 January 2015).
- Bernstein, H. (2013), "Food sovereignty via the 'peasant way': a sceptical view", *Journal of Peasant Studies*, Vol. 41 No. 6, pp. 1031–1063.
- Billon, P. Le. (2015), "Environmental conflict", in Perreault, T., Bridge, G. and McCarthy, J. (Eds.), *The Routledge Handbook of Political Ecology*, Routledge, London and New York, pp. 598–608.
- Blaikie, P. (2008), "Epilogue: Towards a future for political ecology that works", *Geoforum*, Vol. 39 No. 2, pp. 765–772.
- Blaikie, P. and Brookfield, H. (1987), *Land Degradation and Society*, Methuen, London, available at: <http://www.cabdirect.org/abstracts/19876703924.html> (accessed 30 January 2015).
- Blay-Palmer, A. (2009), "The Canadian Pioneer: The Genesis of Urban Food Policy in Toronto", *International Planning Studies*, Routledge, Vol. 14 No. 4, pp. 401–416.
- Blay-Palmer, A. and Renting, H. (2015), *City-Region Food Systems A Literature Review*.

- Blomley, N. (2006), "Uncritical critical geography?", *Progress in Human Geography*, Vol. 30 No. 1, pp. 87–94.
- Bonanno, A., Busch, L., Friedland, W., Gouveia, L. and Mingione, E. (1994), *From Columbus to ConAgra: The Globalization of Agriculture and Food*, University Press of Kansas.
- Borras, S.M., Franco, J.C. and Suárez, S.M. (2015), "Land and food sovereignty", *Third World Quarterly*, Routledge, Vol. 36 No. 3, pp. 600–617.
- Borras, S.M., McMichael, P. and Scoones, I. (2010), "The politics of biofuels, land and agrarian change: editors' introduction", *The Journal of Peasant Studies*, Vol. 37 No. 4, pp. 575–592.
- Braun, B. (2005), "Environmental issues: writing a more-than-human urban geography", *Progress in Human Geography*, Vol. 29 No. 5, pp. 635–650.
- Braun, B. (2006), "Environmental issues: global natures in the space of assemblage", *Progress in Human Geography*, Sage Publications, CA: Thousand Oaks, CA, Vol. 30 No. 5, pp. 644–654.
- Brenner, N. (2009), "What is critical urban theory?", *City*, Vol. 13 No. 2–3, pp. 198–207.
- Brown, J.C. and Purcell, M. (2005), "There's nothing inherent about scale: political ecology, the local trap, and the politics of development in the Brazilian Amazon", *Geoforum*, Vol. 36 No. 5, pp. 607–624.
- Brunori, G., Malandrini, V. and Rossi, A. (2013), "Trade-off or convergence? The role of food security in the evolution of food discourse in Italy", *Journal of Rural Studies*, Vol. 29 No. 0, pp. 19–29.
- Bryant, R. and Bailey, S. (1997), *Third World Political Ecology*, Routledge, London and New York, available at: https://books.google.com/books?hl=en&lr=&id=T-6i5pVeQPUC&oi=fnd&pg=PP13&dq=cockburn+ridgeway+political+ecology+1979&ots=ZEFr2YnNhv&sig=jOvOySHuMUcXy7I4Y_1A-407FJY (accessed 1 July 2015).
- Burton, R.J.F. (2004), "Reconceptualising the 'behavioural approach' in agricultural studies: a socio-psychological perspective", *Journal of Rural Studies*, Vol. 20 No. 3, pp. 359–371.
- Busa, J.H. and Garder, R. (2015), "Champions of the Movement or Fair-weather Heroes? Individualization and the (A) politics of Local Food", *Antipode*, Vol. 47 No. 2, pp. 323–341.
- Busch, L. and Juska, A. (1997), "Beyond political economy: actor networks and the globalization of agriculture", *Review of International Political Economy*, Vol. 4 No. 4, pp. 688–708.
- Buttel, H., F. (2001), "Some Reflections on Late Twentieth Century Agrarian Political Economy", *Sociologia Ruralis*, Vol. 41 No. 2, pp. 165–181.
- Castree, N. (2002), "False Antitheses? Marxism, Nature and Actor-Networks", *Antipode*, Blackwell Publishers Inc., Vol. 34 No. 1, pp. 111–146.
- Castree, N. and Wright, M.W. (2005), "Home truths", *Antipode*, Vol. 37 No. 1, pp. 1–8.
- Clayton, M.L., Frattaroli, S., Palmer, A. and Pollack, K.M. (2015), "The role of partnerships in U.S. Food Policy Council policy activities.", *PloS One*, Public Library of Science, Vol. 10 No. 4, p. e0122870.

- Compa, L.A. (2005), *Blood, Sweat, and Fear: Workers' Rights in US Meat and Poultry Plants*, <http://www.hrw.org/reports/2005/usa0105/usa0105.pdf>, Human Rights Watch.
- Cook, I. (2006), "Geographies of food: following", *Progress in Human Geography*, Vol. 30 No. 5, pp. 655–666.
- Cook, I., Hobson, K., Hallett, L., Guthman, J., Murphy, A., Hulme, A., Sheller, M., et al. (2011), "Geographies of food: 'Afters'", *Progress in Human Geography*, Vol. 35 No. 1, pp. 104–120.
- Cook, I.R. and Swyngedouw, E. (2012), "Cities, Social Cohesion and the Environment: Towards a Future Research Agenda", *Urban Studies*, SAGE Publications, Vol. 49 No. 9, pp. 1959–1979.
- Cornwell, J. (2012), "Worker Co-operatives and Spaces of Possibility: An Investigation of Subject Space at Collective Copies", *Antipode*, Vol. 44 No. 3, pp. 725–744.
- Cuéllar-Padilla, M. and Calle-Collado, Á. (2011), "Can we find solutions with people? Participatory action research with small organic producers in Andalusia", *Journal of Rural Studies*, Vol. 27 No. 4, pp. 372–383.
- DeLind, L. (2011), "Are local food and the local food movement taking us where we want to go? Or are we hitching our wagons to the wrong stars?", *Agriculture and Human Values*, Springer Netherlands, Vol. 28 No. 2, pp. 273–283.
- Dixon, J. (2009), "From the imperial to the empty calorie: how nutrition relations underpin food regime transitions", *Agriculture and Human Values*, Vol. 26 No. 4, pp. 321–333.
- Dixon, J. and Richards, C. (2016), "On food security and alternative food networks: understanding and performing food security in the context of urban bias", *Agriculture and Human Values*, Springer Netherlands, Vol. 33 No. 1, pp. 191–202.
- Dowler, E.A. and O'Connor, D. (2012), "Rights-based approaches to addressing food poverty and food insecurity in Ireland and UK", *Social Science & Medicine*, Vol. 74 No. 1, pp. 44–51.
- DuPuis, E.M. and Goodman, D. (2005), "Should we go 'home' to eat?: toward a reflexive politics of localism", *Journal of Rural Studies*, Vol. 21 No. 3, pp. 359–371.
- Elmhirst, R. (2011), "Introducing new feminist political ecologies", *Geoforum*, Vol. 42 No. 2, pp. 129–132.
- Elmhirst, R. (2015), "Feminist Political Ecology", in Perreault, T., Bridge, G. and McCarthy, J. (Eds.), *The Routledge Handbook of Political Ecology*, Routledge, London and New York, available at: <https://doi.org/10.4324/9781315759289.ch40>.
- Emel, J. and Neo, H. (2015), *Political Ecologies of Meat*, edited by Emel, J. and Neo, H., Earthscan from Routledge, London ; New York, available at: <https://books.google.co.uk/books?hl=en&lr=&id=K7thCQAAQBAJ&oi=fnd&pg=PT10&dq=%22political+ecology+of+meat%22&ots=qE3cKdQNdE&sig=FC5SRI4ta6x7srJEx5uUywbABFM> (accessed 26 June 2015).
- Escobar, A. (1996), "Construction nature: Elements for a post-structuralist political ecology", *Futures*, Vol. 28 No. 4, pp. 325–343.
- Escobar, A. (2006), "Difference and Conflict in the Struggle Over Natural Resources: A political ecology framework", *Development*, Palgrave Macmillan UK, Vol. 49 No. 3,

pp. 6–13.

Evans, N., Morris, C. and Winter, M. (2002), "Conceptualizing agriculture: a critique of post-productivism as the new orthodoxy", *Progress in Human Geography*, Vol. 26 No. 3, pp. 313–332.

Food Research Collaboration. (2014), *Square Meal: Food, Farming Health and Nature: Why We Need a New Recipe for the Future*.

Forsyth, T. (2003), *Critical Political Ecology: The Politics of Environmental Science*, Routledge, London and New York, available at: <https://doi.org/10.1353/sgo.2005.0001>.

Francis, C., Lieblein, G., Gliessman, S., Breland, T.A., Creamer, N., Harwood, R., Salomonsson, L., et al. (2003), "Agroecology: The Ecology of Food Systems", *Journal of Sustainable Agriculture*, Taylor & Francis, Vol. 22 No. 3, pp. 99–118.

Freidberg, S. (2009), *Fresh: A Perishable History*, Harvard University Press.

Freire de Sousa, I.S. and Busch, L. (1998), "Networks and agricultural development: The case of soybean production and consumption in Brazil", *Rural Sociology*, Vol. 63 No. 3, pp. 349–371.

Friedmann, H. and McMichael, P. (1989), "Agriculture and the state system", *Sociologia Ruralis*, Vol. 29 No. 2, pp. 93–117.

Galt, R. (2009), "It just goes to kill Ticos": national market regulation and the political ecology of farmers' pesticide use in Costa Rica", *Journal of Political Ecology*, Vol. 16, pp. 1–33.

Galt, R.E. (2013), "Placing Food Systems in First World Political Ecology: A Review and Research Agenda", *Geography Compass*, Vol. 7 No. 9, pp. 637–658.

Gandy, M. (2004), "Rethinking urban metabolism: water, space and the modern city", *City*, Vol. 8, pp. 371–387.

Garnett, T. and Godfray, C. (2012), "Sustainable intensification in agriculture. Navigating a course through competing food system priorities", Food Climate Research Network and the Oxford Martin Programme on the Future of Food, University of Oxford, UK.

Gibson-Graham, J.K. (2006), *A Postcapitalist Politics*, University of Minnesota Press, Minnesota.

Giménez, E.H. and Shattuck, A. (2011), "Food crises, food regimes and food movements: rumblings of reform or tides of transformation?", *The Journal of Peasant Studies*, Vol. 38 No. 1, pp. 109–144.

Gonzalez de Molina, M. (2013), "Agroecology and Politics. How To Get Sustainability? About the Necessity for a Political Agroecology", *Agroecology and Sustainable Food Systems*, Vol. 37 No. 1, pp. 45–59.

Goodman, D. (1999), "Agro-Food Studies in the 'Age of Ecology': Nature, Corporeality, Bio-Politics", *Sociologia Ruralis*, Blackwell Publishers Ltd, Vol. 39 No. 1, pp. 17–38.

Goodman, D. (2004a), "Rural Europe Redux? Reflections on Alternative Agro-Food Networks and Paradigm Change", *Sociologia Ruralis*, Vol. 44 No. 1, pp. 3–16.

Goodman, D. and DuPuis, E.M. (2002), "Knowing food and growing food: beyond the production–consumption debate in the sociology of agriculture", *Sociologia Ruralis*,

Vol. 42 No. 1, pp. 5–22.

- Goodman, D. and Redclift, M. (1991), *Refashioning Nature: Food, Ecology and Culture*, Routledge, London, available at:
<http://books.google.co.uk/books?hl=en&lr=&id=xKKJAgAAQBAJ&oi=fnd&pg=PP1&dq=refashioning+nature+food+ecology+and+culture&ots=fmzU3p2hPl&sig=r55fFnFLDQ5IJ9jjU5f3bT0KCXc> (accessed 20 February 2015).
- Goodman, M.K. (2004b), "Reading fair trade: political ecological imaginary and the moral economy of fair trade foods", *Political Geography*, Vol. 23 No. 7, pp. 891–915.
- Goodman, M.K. (2016), "Food geographies I: Relational foodscapes and the busy-ness of being more-than-food", *Progress in Human Geography*, Vol. 40, pp. 257–266.
- Graham, J. (2009), "Alternative Economic Spaces. Edited by Andrew Leyshon, Roger Lee, and Colin C. Williams", *Economic Geography*, Vol. 81 No. 4, pp. 437–438.
- Gregson, N. (1995), "And now it's all consumption?", *Progress in Human Geography*, Vol. 19 No. 1, pp. 135–141.
- Grossman, L.S. (1993), "The Political Ecology of Banana Exports and local Food Production in St. Vincent, Eastern Caribbean", *Annals of the Association of American Geographers*, Vol. 83 No. 2, pp. 347–367.
- Guthman, J. (2004), *Agrarian Dreams: The Paradox of Organic Farming in California*, University of California Press, Berkeley.
- Guthman, J. (2008a), "Neoliberalism and the making of food politics in California", *Geoforum*, Vol. 39 No. 3, pp. 1171–1183.
- Guthman, J. (2008b), "'If they only knew': color blindness and universalism in California alternative food institutions", *The Professional Geographer*, Vol. 60 No. 3, pp. 387–397.
- Guthman, J. (2008c), "Thinking inside the neoliberal box: The micro-politics of agro-food philanthropy", *Geoforum*, available at:
<http://www.sciencedirect.com/science/article/pii/S0016718506001102>.
- Guthman, J. (2011), *Weighing in: Obesity, Food Justice, and the Limits of Capitalism*, University of California Press, Berkeley, available at:
<https://books.google.co.uk/books?hl=en&lr=&id=Irc5hK8PgkMC&oi=fnd&pg=PT8&dq=julie+guthman+2011+&ots=GQR1x6Mwql&sig=eGwPE1XXQyTApLkaCbR4mGND2nA> (accessed 3 June 2015).
- Guthman, J. (2012), "Opening Up the Black Box of the Body in Geographical Obesity Research: Toward a Critical Political Ecology of Fat", Taylor & Francis Group, available at:
<http://www.tandfonline.com/doi/abs/10.1080/00045608.2012.659635#.VMkrgC6fZsg> (accessed 28 January 2015).
- Guthman, J. (2016), "Lives Versus Livelihoods? Deepening the Regulatory Debates on Soil Fumigants in California's Strawberry Industry", *Antipode*, available at:
<https://doi.org/10.1111/anti.12246>.
- Guthman, J. and DuPuis, M. (2006), "Embodying neoliberalism: economy, culture, and the politics of fat", *Environment and Planning D*, Vol. 24 No. 3, pp. 427–448.
- Halliday, J. (2015), *A New Institutional Analysis of Local Level Food Policy in England between 2012 and 2014*, City University London.

- Harvey, D. (2000), *Spaces of Hope*, University of California Press, Berkeley.
- Harvey, M. (2014), "On the horns of the food-energy-climate change trilemma: towards a socio-economic analysis", *Theory, Culture and Society*, Vol. 31, pp. 155–182.
- Hayes-Conroy, A. (2010), "Feeling Slow Food: Visceral fieldwork and empathetic research relations in the alternative food movement", *Geoforum*, Vol. 41 No. 5, pp. 734–742.
- Hayes-Conroy, J. and Hayes-Conroy, A. (2013), "Veggies and visceralities: A political ecology of food and feeling", *Emotion, Space and Society*, Vol. 6 No. 0, pp. 81–90.
- Heynen, N. (2006), "Justice of eating in the city The political ecology of urban hunger", in Heynen, N., Kaika, M. and Swyngedouw, E. (Eds.), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, Routledge, London ; New York, pp. 124–137.
- Heynen, N. (2015), "Urban political ecology I: The urban century", *Progress in Human Geography*, Vol. 38, pp. 598–604.
- Heynen, N., Kurtz, H.E. and Trauger, A. (2012), "Food Justice, Hunger and the City", *Geography Compass*, Blackwell Publishing Ltd, Vol. 6 No. 5, pp. 304–311.
- Heynen, N.C., Kaika, M. and Swyngedouw, E. (2006), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, Vol. 3, Routledge, London ; New York.
- Hobson, K. (2002), "Competing Discourses of Sustainable Consumption: Does the 'Rationalisation of Lifestyles' Make Sense?", *Environmental Politics*, Routledge, Vol. 11 No. 2, pp. 95–120.
- Holifield, R. (2009), "Actor-Network Theory as a Critical Approach to Environmental Justice: A Case against Synthesis with Urban Political Ecology", *Antipode*, Vol. 41 No. 4, pp. 637–658.
- Holloway, L., Kneafsey, M., Cox, R., Venn, L., Dowler, E. and Tuomainen, H. (2007), "Beyond the 'alternative'-'conventional' divide?: Thinking differently about food productionconsumption relationships", in Maye, D., Holloway, L. and Kneafsey, M. (Eds.), *Alternative Food Geographies: Representation and Practice*, Elsevier, Amsterdam, pp. 77–95.
- Holt Gimenez, E. and Shattuck, A. (2011), "Food crises, food regimes and food movements: rumblings of reform or tides of transformation?", *The Journal of Peasant Studies*, Vol. 38 No. 1, pp. 109–144.
- Hubbard, P., Kitchin, R., Bartley, B. and Fuller, D. (2002), *Thinking Geographically: Space, Theory, and Contemporary Human Geography*, Continuum London.
- Ilbery, B. and Bowler, I. (1998), "From agricultural productivism to post-productivism", in Ilbery, B. (Ed.), *The Geography of Rural Change*, Prentice Hall , Harlow, pp. 57–84.
- Jehlička, P. and Smith, J. (2011), "An unsustainable state: Contrasting food practices and state policies in the Czech Republic", *Geoforum*, Vol. 42 No. 3, pp. 362–372.
- Johnston, J., Biro, A. and MacKendrick, N. (2009), "Lost in the Supermarket: The Corporate-Organic Foodscape and the Struggle for Food Democracy", *Antipode*, Vol. 41 No. 3, pp. 509–532.
- Karriem, A. (2009), "The rise and transformation of the Brazilian landless movement

- into a counter-hegemonic political actor: A Gramscian analysis", *Geoforum*, Vol. 40 No. 3, pp. 316–325.
- Kirwan, J. and Maye, D. (2013), "Food security framings within the UK and the integration of local food systems", *Journal of Rural Studies*, Vol. 29 No. 0, pp. 91–100.
- Lambie-Mumford, H., Crossley, D., Jensen, E., Verbeke, M. and Dowler, E. (2014), "Household Food Security in the UK: A Review of Food Aid", *Department for the Environment, Food and Rural Affairs (Defra)*, available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283071/household-food-security-uk-140219.pdf (accessed 16 December 2014).
- Lawhon, M. and Murphy, J.T. (2012), "Socio-technical regimes and sustainability transitions Insights from political ecology", *Progress in Human Geography*, Vol. 36 No. 3, pp. 354–378.
- Leff, E. (2015), "The Power-Full Distribution of Knowledge in Political Ecology", in Tom Perreault, G.B. and J.M.. (Ed.), *The Routledge Handbook of Political Ecology*, Routledge, London and New York, pp. 64–75.
- Lockie, S. and Kitto, S. (2000), "Beyond the Farm Gate: Production-Consumption Networks and Agri-Food Research", *Sociologia Ruralis*, Blackwell Publishers Ltd, Vol. 40 No. 1, pp. 3–19.
- Long, N. (1990), "From paradigm lost to paradigm regained? The case for an actor-oriented sociology of development", *Revista Europea de Estudios Latinoamericanos Y Del Caribe/European Review of Latin American and Caribbean Studies*, Vol. 49, pp. 3–24.
- Long, N. (2001), *Development Sociology: Actor Perspectives*, Routledge, Oxon.
- Mammana, I. (2014), *Concentration of Market Power in the EU Seed Market.*, Study commissioned by the Greens/EFA Group in the European Parliament, https://www.arche-noah.at/files/seeds-study_uk_28-01v3.pdf.
- Marsden, T., Banks, J., Renting, H. and Van Der Ploeg, J.D. (2001), "The road towards sustainable rural development: issues of theory, policy and research practice", *Journal of Environmental Policy and Planning*, John Wiley & Sons, Ltd., Vol. 3 No. 2, pp. 75–83.
- Marsden, T., Munton, R., Ward, N. and Whatmore, S. (1996), "Agricultural Geography and the Political Economy Approach: A Review", *Economic Geography*, Vol. 72 No. 4, pp. 361–375.
- Marsden, T., Murdoch, J., Lowe, P., Munton, R. and Flynn, A. (1993), *Constructing the Countryside*, UCL Press Limited, London.
- Martinez-Alier, J. (2014), "The environmentalism of the poor", *Geoforum*, Vol. 54, pp. 239–241.
- Martínez-Torres, M.E. and Rosset, P.M. (2010), "La Vía Campesina: the birth and evolution of a transnational social movement", *Journal of Peasant Studies*, Routledge, Vol. 37 No. 1, pp. 149–175.
- Marvin, S. and Medd, W. (2006), "Metabolisms of ob-city: flows of fat through bodies, cities and sewers", in Heynen, N., Kaika, M., and Swyngedouw, E. (Ed.), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, Routledge,

London ; New York.

- McKeon, N. (2017), "Are Equity and Sustainability a Likely Outcome When Foxes and Chickens Share the Same Coop? Critiquing the Concept of Multistakeholder Governance of Food Security", *Globalizations*, Routledge, pp. 1–20.
- McMichael, P. (1994), *The Global Restructuring of Agro-Food Systems*, Cornell University Press.
- McMichael, P. (2012), "Food regime crisis and revaluing the agrarian question", in Almas, R. and Campbell, H. (Eds.), *Rethinking Agricultural Policy Regimes: Food Security, Climate Changes and the Future Resilience of Global Agriculture*, Vol. Research i, Emerald, UK.
- Minkoff-Zern, L.-A. (2014), "Subsidizing farmworker hunger: Food assistance programs and the social reproduction of California farm labor", *Geoforum*, Vol. 57, pp. 91–98.
- Mooney, P.H. and Hunt, S.A. (2009), "Food Security: The Elaboration of Contested Claims to a Consensus Frame*", *Rural Sociology*, Vol. 74 No. 4, pp. 469–497.
- Moore, J. (2010), "The End of the Road? Agricultural Revolutions in the Capitalist World-Ecology, 1450-2010", *Journal of Agrarian Change*, Vol. 10 No. 3, pp. 389–413.
- Moore, J. (2015), *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*, Verso Books, London.
- Moragues-Faus, A. (2014), "How is agriculture reproduced? Unfolding farmers' interdependencies in small-scale Mediterranean olive oil production", *Journal of Rural Studies*, Vol. 34, pp. 139–151.
- Moragues-Faus, A. (2017b), "Emancipatory or Neoliberal Food Politics? Exploring the 'Politics of Collectivity' of Buying Groups in the Search for Egalitarian Food Democracies", *Antipode*, Vol. 49, pp. 455–476.
- Moragues-Faus, A. (2016), "Revisiting Food studies from a political ecology perspective: lessons from Mediterranean agri-food systems", in Ioris, A.A. (Ed.), *Agriculture, Environment and Development. International Perspectives on Water, Land and Politics*, Palgrave Macmillan, Houndmills, Basingstoke, Hampshire.
- Moragues-Faus, A. (2017a), "Problematising justice definitions in public food security debates: Towards global and participative food justices", *Geoforum*, Vol. 84, pp. 95–106.
- Moragues-Faus, A. and Morgan, K. (2015), "Reframing the foodscape: the emergent world of urban food policy", *Environment and Planning A*, SAGE Publications, Vol. 47 No. 7, pp. 1558–1573.
- Moragues, A., Morgan, K. and Moschitz, H. (2013), "Urban Food Strategies: the rough guide to sustainable food systems", available at: http://scholar.google.com/scholar?q=%22urban+food+strategies%22&btnG=&hl=en&num=20&as_sdt=0,5#12 (accessed 17 December 2014).
- Morgan, K. and Sonnino, R. (2010), "The urban foodscape: world cities and the new food equation", *Cambridge Journal of Regions, Economy and Society*, Vol. 3 No. 2, pp. 209–224.
- Mullaney, E.G. (2014), "Geopolitical Maize: Peasant Seeds, Everyday Practices, and Food Security in Mexico", *Geopolitics*, Vol. 19 No. 2, pp. 406–430.

- Neumann, R. (2005), *Making Political Ecology*, Routledge London and New York, available at:
<https://books.google.co.uk/books?hl=en&lr=&id=kSuPAwAAQBAJ&oi=fnd&pg=PP1&dq=making+political+ecology&ots=d1J5ivR4Te&sig=F4Z0DSwxGoOWwzcXNzcP2tjn1Eg> (accessed 13 July 2015).
- Neumann, R. (2009), "Political ecology: theorizing scale", *Progress in Human Geography*, Vol. 33 No. 3, pp. 398–406.
- Newell, J.P. and Cousins, J.J. (2015), "The boundaries of urban metabolism: Towards a political-industrial ecology", *Progress in Human Geography*, Vol. 39 No. 6, pp. 702–728.
- Norgaard, R. (1994), *Development Betrayed*, Routledge, London, available at:
https://scholar.google.co.uk/scholar?hl=en&as_sdt=0,5&cluster=13146961756018327563 (accessed 8 June 2017).
- Nyéléni. (2007), "Nyéléni 2007 Forum for Food Sovereignty Synthesis report".
- O'Brien, K. (2011), "Responding to environmental change: A new age for human geography?", *Progress in Human Geography*, Vol. 35 No. 4, pp. 542–549.
- Oliveira, G. and Hecht, S. (2016), "Sacred groves, sacrifice zones and soy production: globalization, intensification and neo-nature in South America", *The Journal of Peasant Studies*, Routledge, Vol. 43 No. 2, pp. 251–285.
- Osterweil, M. (2005), "Place-based Globalism: Theorizing the global justice movement", *Development*, Vol. 48 No. 2, pp. 23–28.
- Pallett, H. and Chilvers, J. (2013), "A decade of learning about publics, participation, and climate change: institutionalising reflexivity?", *Environment and Planning A*, Vol. 45 No. 5, pp. 1162–1183.
- Peet, R., Robbins, P. and Watts, M. (2011), *Global Political Ecology*, Routledge London.
- Peet, R. and Watts, M. (1996), *Liberation Ecologies: Environment, Development, and Social Movements.*, Routledge, New York, available at:
<http://www.cabdirect.org/abstracts/19961809322.html> (accessed 13 February 2015).
- Perreault, T., Bridge, G. and McCarthy, J. (2015), *The Routledge Handbook of Political Ecology*, Routledge, Oxford.
- Pimbert, M., Thompson, J., Vorley, W., Fox, T. and Kanji, N. (2001), *Global Restructuring, Agri-Food Systems and Livelihoods*, Gatekeeper Series, available at:
<http://dlc.dlib.indiana.edu/dlc/handle/10535/6125> (accessed 11 May 2017).
- Pothukuchi, K. and Kaufman, J.L. (1999), "Placing the food system on the urban agenda: The role of municipal institutions in food systems planning", *Agriculture and Human Values*, Springer Netherlands, Vol. 16 No. 2, pp. 213–224.
- Rancière, J. (1998), *Disagreement: Politics and Philosophy*, University of Minnesota Press, available at: <http://abahlaliold.shackdwellers.org/files/Disagreement Politics and Philosophy.pdf>.
- Rangan, H. and Kull, C. (2008), "What makes ecology 'political'? rethinking 'scale' in political ecology", *Progress in Human Geography*, Vol. 33 No. 1, pp. 28–45.
- Reardon, T. (2015), "The hidden middle: the quiet revolution in the midstream of

- agrifood value chains in developing countries", *Oxford Review of Economic Policy*, Gustav Fischer, Jena, Vol. 31 No. 1, pp. 45–63.
- Robbins, P. (2012), *Political Ecology: A Critical Introduction*, Vol. 20, John Wiley & Sons, Chichester.
- Rocheleau, D., Thomas-Slayter, B. and Wangari, E. (1996), *Feminist Political Ecology: Global Issues and Local Experiences*, Routledge, London, available at: <http://library.wur.nl/WebQuery/clc/930340> (accessed 13 July 2015).
- Roe, E.J. (2006a), "Material connectivity, the immaterial and the aesthetic of eating practices: an argument for how genetically modified foodstuff becomes inedible", *Environment and Planning A*, Vol. 38 No. 3, p. 465.
- Roe, E.J. (2006b), "Things becoming food and the embodied, material practices of an organic food consumer", *Sociologia Ruralis*, Vol. 46 No. 2, pp. 104–121.
- Sage, C. (2013), "The interconnected challenges for food security from a food regimes perspective: Energy, climate and malconsumption", *Journal of Rural Studies*, Vol. 29 No. 0, pp. 71–80.
- Sarmiento, E.R. (2016), "Synergies in alternative food network research: embodiment, diverse economies, and more-than-human food geographies", *Agriculture and Human Values*, Springer Netherlands, pp. 1–13.
- Scherb, A., Palmer, A., Frattaroli, S. and Pollack, K. (2012), "Exploring Food System Policy: A Survey of Food Policy Councils in the United States", *Journal of Agriculture, Food Systems, and Community Development*, Vol. 2 No. 4, pp. 3–14.
- Schiff, R. (2008), "The Role of Food Policy Councils in Developing Sustainable Food Systems", *Journal of Hunger & Environmental Nutrition*, Taylor & Francis, Vol. 3 No. 2–3, pp. 206–228.
- Shannon, J. (2014), "Food deserts: Governing obesity in the neoliberal city", *Progress in Human Geography*, Vol. 38 No. 2, pp. 248–266.
- Sheppard, E. (2015), "Thinking Geographically: Globalizing Capitalism and Beyond", *Annals of the Association of American Geographers*, Vol. 105 No. 6, pp. 1113–1134.
- Shillington, L.J. (2013), "Right to food, right to the city: Household urban agriculture, and socionatural metabolism in Managua, Nicaragua", *Geoforum*, Vol. 44, pp. 103–111.
- Shiva, V. (1991), *The Violence of the Green Revolution : Third World Agriculture, Ecology, and Politics*, Zed Books, available at: http://whel-primo.hosted.exlibrisgroup.com/primo_library/libweb/action/openurl?sid=Elsevier:Scopus&_service_type=getFullTxt&issn=&isbn=0862329647&volume=&issue=&spage=&epage=&pages=&artnum=&date=1992&id=doi:&title=The+violence+of+the+Green+Revolution%3A+Third+World+agriculture%2C+ecology+and+politics&atitle=The+violence+of+the+Green+Revolution%3A+Third+World+agriculture%2C+ecology+and+politics&aufirst=V.&auinit=V.&auinit1=V&aulast=Shiva&vid=44WHELF_CAR_services_page&institution=44WHELF_CAR&url_ctx_val=&url_ctx_fmt=null&isServicesPage=true (accessed 9 May 2017).
- Slocum, R. (2006), "Anti-racist Practice and the Work of Community Food Organizations", *Antipode*, Vol. 38 No. 2, pp. 327–349.
- Slocum, R. (2007), "Whiteness, space and alternative food practice", *Geoforum*, Vol. 38

- No. 3, pp. 520–533.
- Slocum, R. (2011), “Race in the study of food”, *Progress in Human Geography*, Vol. 35 No. 3, pp. 303–327.
- Slocum, R. and Saldanha, A. (2013), *Geographies of Race and Food: Fields, Bodies, Markets*, available at: <https://books.google.es/books?hl=en&lr=&id=dw6iAgAAQBAJ&oi=fnd&pg=PT10&dq=slocum+race&ots=FOA87ad8kd&sig=vWrXnDLZooH0rcBthZf5NNOESjA> (accessed 2 April 2015).
- Smith, N. (2015), “The Future is Radically Open”, *ACME: An International E-Journal for Critical Geographies*, Vol. 14 No. 3, pp. 954–964.
- Sonnino, R. and Marsden, T. (2006), “Beyond the divide: rethinking relationships between alternative and conventional food networks in Europe”, *J Econ Geogr*, Vol. 6 No. 2, pp. 181–199.
- Sonnino, R., Marsden, T. and Moragues-Faus, A. (2016), “Relationalities and convergences in food security narratives: towards a place-based approach”, *Transactions of the Institute of British Geographers*, Vol. 41, pp. 477–489.
- Sonnino, R., Moragues-Faus, A. and Maggio, A. (2014), “Sustainable Food Security: An Emerging Research and Policy Agenda”, *International Journal of Sociology of Agriculture and Food*, Vol. 21 No. 1, pp. 173–188.
- Sundberg, J. (2015), “Ethics, Entanglement, and Political Ecology”, in Tom Perreault, Gavin Bridge, J.M. (Ed.), *The Routledge Handbook of Political Ecology*, Routledge Handbooks Online, available at: <https://doi.org/10.4324/9781315759289.ch8>.
- Swyngedouw, E. (1995), “The contradictions of urban water provision: a study of Guayaquil, Ecuador”, *Third World Planning Review*, Vol. 17 No. 4, pp. 387–412.
- Swyngedouw, E. (2007), “Impossible sustainability and the post-political condition”, in Kreuger, R. and Gibbs, D. (Eds.), *The Sustainable Development Paradox: Urban Political Economy in the United States and Europe*, The Guilford Press, New York, London, pp. 13–40.
- Swyngedouw, E. (2014), “Where is the political? Insurgent mobilisations and the incipient ‘return of the political’”, *Space and Polity*, Routledge, pp. 1–15.
- Swyngedouw, E. and Heynen, N.C. (2003), “Urban political ecology, justice and the politics of scale”, *Antipode*, Vol. 35 No. 5, pp. 898–918.
- Tan-Mullins, M. (2007), “The state and its agencies in coastal resources management: the political ecology of fisheries management in Pattani, southern Thailand”, *Singapore Journal of Tropical Geography*, Vol. 28, pp. 348–361.
- Tornaghi, C. (2014), “Critical geography of urban agriculture”, *Progress in Human Geography*, available at: <https://doi.org/10.1177/0309132513512542>.
- Truelove, Y. (2011), “(Re-)Conceptualizing water inequality in Delhi, India through a feminist political ecology framework”, *Geoforum*, Vol. 42 No. 2, pp. 143–152.
- Turner, M. (1993), “Overstocking the range: a critical analysis of the environmental science of Sahelian pastoralism”, *Economic Geography*, Vol. 69 No. 4, pp. 402–421.
- Ulloa, A. (2015), “Environment and Development: Reflections from Latin America”, in Perreault, T., Bridge, G. and McCarthy, J. (Eds.), *The Routledge Handbook of Political*

- Ecology*, Routledge, available at: <https://doi.org/10.4324/9781315759289.ch24>.
- Via Campesina. (1996), "Food Sovereignty", *Rome Declaration of the World Food Summit*.
- Via Campesina. (2014), "<http://viacampesina.org/en/index.php/organisation-mainmenu-44>".
- Walker, P.A. (2005), "Political ecology: where is the ecology", *Progress in Human Geography*, Vol. 29 No. 1, pp. 73–82.
- Walker, P.A. (2006), "Political ecology: where is the policy?", *Progress in Human Geography*, Vol. 30 No. 3, pp. 382–395.
- Watts, M. (1983), *Silent Violence: Food, Famine and Peasantry in Northern Nigeria*, University of California Press, Berkeley, available at: <http://library.wur.nl/WebQuery/clc/230615> (accessed 13 July 2015).
- Watts, N. and Scales, I.R. (2015), "Seeds, Agricultural Systems and Socio-natures: Towards an Actor-Network Theory Informed Political Ecology of Agriculture", *Geography Compass*, Vol. 9 No. 5, pp. 225–236.
- Whatmore, S. (2002), *Hybrid Geographies: Natures Cultures Spaces*, Sage.
- Wilson, A.D. (2013), "Beyond Alternative: Exploring the Potential for Autonomous Food Spaces", *Antipode*, Vol. 45 No. 3, pp. 719–737.
- Winter, M. (2003), "Geographies of food: agro-food geographies–making reconnections", *Progress in Human Geography*, Vol. 27 No. 4, pp. 505–513.
- Wittman, H. (2009), "Reworking the metabolic rift: La Vía Campesina, agrarian citizenship, and food sovereignty", *The Journal of Peasant Studies*, Routledge, Vol. 36 No. 4, pp. 805–826.
- Wittman, H., Desmarais, A.A. and Wiebe, N. (2010), *Food Sovereignty: Reconnecting Food, Nature & Community*, Fernwood Halifax and Winnipeg.
- Wolpert, M. and Rothwell, N. (2014), "GM technologies", *Council for Science and Technology*, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288823/cst-14-634-gm-technologies.pdf.
- Yarwood, R. and Evans, N. (2006), "A Llyn sweep for local sheep? Breed societies and the geographies of Welsh livestock", *Environment and Planning A*, Pion Ltd, Vol. 38 No. 7, pp. 1307–1326.
- Zimmerer, K.S. and Bassett, T.J. (2003), *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*, Guilford Press, New York.
- Zitcer, A. (2015), "Food Co-ops and the Paradox of Exclusivity", *Antipode*, Vol. 47 No. 3, pp. 812–828.

ⁱ See for example Moore (2015, 2010) on the beginning of the end of 'cheap natures', whereby capitalist accumulation can no longer rely upon externalising its carbon-based exploitative vulnerabilities, in a systemic context where this is also increasingly no longer seen as publically legitimate.

ⁱⁱ The initial selection of the literature consisted on a search in Scopus of key words: “food studies” and “review” or “food research” and “review”. This query was restricted to the titles, abstracts, and keywords of manuscripts and led to 48 academic articles of which 16 were reviews on some aspect of food research. This limited results pushed us to conduct a snowballing technique where we reviewed articles cited and/or citing key publications in the field.

ⁱⁱⁱ The examples used in this section have been extracted from a literature search in Scopus of key words: “political ecology” and “food”. This query was restricted to the titles, abstracts, and keywords of articles and led to 132 academic articles of which 100 were related to food and political ecology. Additional relevant literature was reviewed through a snowball technique of key papers.

^{iv} For a more detailed explanation of the process visit

http://inthesetimes.com/article/15826/fight_for_15_confidential and the Food Chain Workers Alliance http://foodchainworkers.org/?page_id=2329

^v The Members of the EU Parliament in January 2014 voted against a proposal on the commission on the Regulation on agricultural seeds and other plant reproductive material (Ecologist, 2014

http://www.theecologist.org/News/news_round_up/2261055/meps_vote_against_eu_seed_regulation.html), partly based on the discrimination against other seeds rather than industrial ones, and its effects on small farmers, small companies and biodiversity. Interventions included the presentation of a new study developed by Mammana (2014) on the concentration of market power in the EU seed market.

^{vi} See

http://www.fao.org/fileadmin/user_upload/bodies/CL_156/Sustainable_Food_System_Urban/Sustainable_Food_Systems_Urban.pdf