Power and politics in agri-food sustainability transitions

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Abstract: *The academic discourse on sustainability transitions has gained momentum. This discourse, however, has been criticised for underplaying questions of power and politics. The critique seem particularly relevant when applied to agri-food systems. Our review explores how power and politics have been addressed in sustainability transitions research – with a particular focus on agri-food systems. The literature firmly establishes that comprehensive sustainability transitions imply a re-negotiation of the rules of the game and new governance settings. The objectives and direction of transitions towards sustainability are often contested, and the political processes around transitions are framed by historical and spatial realities. Power dynamics in transitions can take different forms (e.g. coercion, empowerment, resistance). In spite of these insights, power and politics remain marginal topics in the academic discourse on agri-food sustainability transitions. Yet, the reviewed literature provides three interesting cases (agroecology, biofuels, urban foodscapes) addressing transition politics in agri-food systems. Agroecology can be seen as a form of resistance to and a means of transforming dominant agri-food systems. Biofuels can be considered an instrument for a transition towards sustainable energy systems, but may create sustainability trade-offs in agri-food systems. Urban foodscapes are an arena where power and politics shape the relation between civil society, private actors, and local governments and, consequently, the pace of agri-food sustainability transition. It can be argued that in order to accelerate sustainability transitions in agri-food systems, a better understanding of transition power and politics - as well as their relation to agri-food system governance - will be needed.*

Keywords: *Sustainability transitions, Agri-food systems, Power, Transition politics, Governance, Multi-Level Perspective.*

1. Introduction

Humanity faces fundamental sustainability challenges such as poverty, food insecurity and malnutrition, social and economic inequalities, water scarcity, climate change and biodiversity loss. Therefore, fundamental and radical changes are needed to achieve the objectives of the 2030 Agenda for Sustainable Development (UN, 2015). As incremental changes will not suffice to cope with the prevailing sustainability challenges (Markard et al., 2012), sustainability transitions have received increasing attention in several domains and sectors, including the agri-food sector. Moreover, sustainability transitions have become an area of interest for transition researchers and practitioners. Markard et al. (2012:956) define sustainability transitions as "*long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption*".

Markard et al. (2012) reviewed four prominent frameworks in transition studies: the Multi-Level Perspective (MLP) on sociotechnical transitions, Transition Management, Strategic Niche Management and Innovation Systems. However, there is a broad range of theoretical

and conceptual frameworks that have been used to understand and promote transition towards sustainability (Falcone, 2014; Geels, 2005; Grin et al., 2010; Lachman, 2013; Markard et al., 2012; Sovacool and Hess, 2017). According to the MLP literature (Geels, 2002; Geels, 2010; Geels, 2011; Smith et al., 2005; Smith et al., 2010), transitions come about through interactions within and between three levels: *niches* (micro level; locus of radical innovations); *regimes* (meso level; locus of established practices and associated rules); and *landscape* (macro level; exogenous trends). The MLP emphasises that processes at niche, regime and landscape levels should be aligned for a transition to be successful.

Sustainability transitions are particularly needed in agri-food systems. This necessity emerges from symptoms of food system failure (Rosin et al., 2012), which include environmental degradation, undernutrition and obesity, and food waste (Aleksandrowicz et al., 2016; FAO, 2009; FAO, 2011; FAO, 2017; Gladek et al., 2016; IPES-Food, 2015; WWW-UK, 2013). Moreover, agri-food systems have seen a greater concentration of actors and power than ever before (Clapp, 2014; Reardon and Timmer, 2012). The environmental, economic and social challenges affecting food systems intersect and magnify one another (Hinrichs, 2014). Therefore, Foresight (2011) warns that "*Nothing less is required than a redesign of the whole global food system to bring sustainability to the fore*". The rising interest in agro-food transitions is reflected in an increasing number of studies (e.g. Bui et al., 2016; Elzen et al., 2017; Pitt and Jones, 2016; Poppe et al., 2009; Spaargaren et al., 2012; Vellema, 2011; Wiskerke and van der Ploeg, 2004). Compared to sustainability transition research in the energy and mobility sector, however, agri-food systems studies remain a marginal field (Hinrichs, 2014; Markard et al., 2012).

A substantial body of literature deals with transition politics (e.g. Avelino et al., 2016; Geels, 2014; Grin et al., 2010; Hess, 2014; Jhagroe, 2016; Newig et al., 2007). Nevertheless, Scoones et al. (2015:3) argued that the transitions literature "*has fallen short in its understanding of power"* calling for further elaboration and conceptualisation of power and politics. In fact, one of the criticisms to the sustainability transitions research community is that it does not always sufficiently elucidate issues of politics, power, legitimisation and hegemony in transitions (e.g. Grin et al., 2011; Hendriks and Grin, 2007; Markard et al., 2012; Meadowcroft, 2009; Newig et al., 2007; Shove and Walker, 2008; Smith and Stirling, 2007; Smith and Stirling, 2010; Smith et al., 2005; Smith et al., 2010). In particular, the MLP has been subject to a lively and critical debate (Geels, 2011; Geels, 2014); and a major concern has been the apparently minor role of power, politics and agency in the heuristic framework (Lachman, 2013; Lawhon and Murphy, 2012; Shove and Walker, 2007; Smith et al., 2010). Markard et al. (2012: 962) stress that key questions relating to power, politics and governance in sustainability transitions field pertain to "*where (with whom) does power reside in transition processes? How are power and agencies performed in transition processes? Whose voices and narratives remain unheard? Which transitions are legitimate […]*?".

These questions are particularly relevant when applied to agri-food systems, and many scholars called for more emphasis on the partially overlooked aspects of governance and political dynamics in agri-food sustainability transitions (Hinrichs, 2014; Konefal, 2015; Marsden, 2013). Therefore, this review sheds light on how power and politics have been addressed in research on sustainability transitions with a special focus on agri-food systems. We analyse first power and politics in sustainability transitions research field (section 3) then in agri-food sustainability transitions (section 4).

2. Material and Methods

As for power and politics in research on sustainability transitions, the journal special issues on sustainability transitions analysed by Markard et al. (2012) were considered as a starting point. These were complemented by more recent special issues or special sections on the topic (e.g. Markard et al., 2012a; Maye and Duncan, 2017; van den Bergh, 2013). A particular attention was paid to a recent special issue of the Journal of Environmental Policy & Planning on "*The politics of sustainability transitions*" (Avelino et al., 2016).

Concerning power and politics in agri-food sustainability transitions, we carried out a systematic review (Moher et al., 2009; Tranfield et al., 2003) on 05 July 2017 using the Scopus database. The use of *Title-Abs-Key* search query *transition AND sustainability AND (food OR agri*) AND (power OR politics)* yielded 40 documents. Following a deep scrutiny of abstracts, 22 documents were not considered for further analysis as they do not deal with agri-food sustainability transitions. Also, a conference review, a bibliography review and a book were not considered for further analysis. Therefore, only 15 documents underwent a deeper analysis (Table 1).

Table 1. Documents considered in the systematic review on power and politics in research on agri-food sustainability transitions.

Year	Number of documents	References
2017	4	Crivits et al., 2017; Partzsch, 2017; Santamaria-Guerra and González, 2017; Taylor, 2017
2016	1	Tejada et al., 2016
2015	2	Anderson, 2015; Moragues-Faus and Morgan, 2015
2014	2	Hinrichs, 2014; Sherwood and Paredes, 2014
2013	3	Crivits and Paredis, 2013; Gonzalez de Molina, 2013; Wessel, 2013
2012	1	Lawhon and Murphy, 2012
2011	1	Levkoe, 2011
2008	1	Lebel et al., 2008

The main shortcoming of this systematic review is that it does not take into consideration publications where power is referred to with a different term (e.g. agency, governance). We also acknowledge that the use of a single database (cf. Scopus) might have omitted some other relevant articles, even though Scopus - with 70 Million records - is recognized as the most important source of scientific literature. The use of Scopus also means that the article focuses only on scholarly literature, not on grey literature. Our focus on peer-reviewed journal papers also means that we might have missed some original contributions on this topic that were published in books. This shortcoming was, at least to a certain extent, addressed by considering some prominent recent reports and books on agro-food sustainability transitions.

3. Power and politics in research on sustainability transitions

Transitions involve politics in their broadest sense; that's to say "*all the activities of co-operation and conflict, within and between societies, whereby the human species goes about organising the use, production and distribution of human, natural and other resources in the production and reproduction of its biological and social life*" (Leftwich, 2010:11). This broad understanding of politics entails more than formalised processes and goes beyond formal decision-making arenas. In fact, understanding politics and power requires attention to actors' strategies, agencies, resources and interactions (Farla et al., 2012), beyond government and industry. By their nature, transitions imply a restructuring of power relations relating to the access, use and distribution of resources by different actors and social groups. Therefore, the impact of a transition will depend on politics, power dynamics and resistance. As Avelino et al. (2016:7) pointed out "*sustainability transitions are inherently political*". Transitions processes entail conflicts and inequalities, thus power relations and vested interests are inevitably part of transition processes (Avelino, 2011; Meadowcroft, 2009; Shove and Walker, 2007; Van der Ploeg, 2009). According to Geels and Schot (2007:415), transition, as any change process, is the outcome of "*conflicts, power struggles, contestations, lobbying, coalition building, and bargaining*".

Politics comes into play in transitions when futures are envisioned (Gaede and Meadowcroft, 2015), economic paradigms challenged or reproduced (Swilling et al., 2015), actor roles

framed (Avelino and Wittmayer, 2015; Fischer and Newig, 2016), participation procedures shaped (Chilvers and Longhurst, 2016) or novelties captured (Pel, 2015). Different types and forms of power come into play during transition processes. Grin et al. (2010) propose that different types of power characterize the various MLP levels; *relational power* (achievement of outcomes by agents in interaction) in niche, *dispositional power* (positioning of agents) in socio-technical regime, and *structural power* (structuring of arrangements) in landscape. Avelino and Rotmans (2009) distinguish five different types of power: *innovative* power (in niches), *destructive* power, *constitutive* power, *transformative* power (in niche-regime interface) and *systemic* power. The Sustainability Transitions Research Network (STRN, 2017) distinguishes between three main perspectives on power: a socio-technical perspective that focuses on power struggles between niches and regimes; a governance perspective that is more concerned with actors' capacity of triggering institutional transformation; and a politico-sociological perspective that focuses on how actors engage with systems, structures and resources. According to Partzsch (2017), power dynamics in transitions can take different forms i.e. 'power over' (coercion, manipulation), 'power with' (empowerment through collective learning), and 'power to' (resistance).

Using as a reference the definition of politics by Leftwich (2010), Avelino et al. (2016) identified three cross-cutting themes to analyse the diverse and complex inter-dependency of transition and politics: transition politics *materialities*, power dispersed nature, and historical and spatial contexts. As for the *materialities* of transition politics, while the relation between the social and the material (cf. socio-technical system in MLP) is at the heart of transition studies, these often ignore 'the political' in transition. In particular, many studies do not pay due attention to the 'politics of materiality' (Avelino et al., 2016), that shape governing regimes, socio-material arrangements as well as everyday social practices. In fact, some scholars (e.g. Hoffman and Loeber, 2015) highlighted the importance of the micro-politics of transitions such as politics relating to practices. According to Meadowcroft (2009), the everyday politics will inevitably shape socio-technical transition outcomes.

Dispersed nature of power in transition processes is due, among others, to spatial dispersion of socio-technical regimes (e.g. Castán Broto, 2015) that's to say sources and agents of power (Avelino et al., 2016). The literature on MLP is characterised by the niche–regime dichotomy, but some authors (e.g. Hoffman and Loeber, 2015) showed that transition processes are typically constituted in a dialectic manner and can induce changes in both niches and regimes. In fact, power in transition processes is dispersed across actors at numerous levels rather than concentrated at regime level (Avelino and Wittmayer, 2015). Therefore, understanding politics in transition processes requires not only a multi-level perspective (Geels, 2002) but also a multi-actor perspective (Avelino and Wittmayer, 2015) given the diversity of actors' roles, visions, missions and agendas. It is widely assumed that institutional power is centred in the regime level, civil society is attributed to the niche and governments to the regime. However, this overly schematic distinction and categorization of actors overlooks the different logics in the reproduction or creation of institutions (Avelino and Wittmayer, 2015), which may explain resistance or propensity to change. Furthermore, regime should be conceived as a socio-political constellation (Swilling et al., 2015) and a multi-actor arena where politics of transitions (or resistance to transition) are played out.

The very nature of innovation, that is unstable, explains the evolution of the networks of actors that support or oppose it (Pel, 2015). These changes in actors' networks, that are also due to evolution of roles and identities (Chilvers and Longhurst, 2016; Hoffman and Loeber, 2015), imply also variations in power relations. Actor roles in transitions are erratic and can change over the course of time (Fischer and Newig, 2016). In fact, actors' identities may evolve through participation processes (Fischer and Newig, 2016; Hoffman and Loeber, 2015) as well as anchoring mechanisms (Elzen et al., 2012). The continuous construction, and de- or re-construction, of innovative identities is a central mechanism in transitions politics, as they shape actors' positioning (Avelino et al., 2016). Changing identities is not the only risk for radical innovations, and consequently transitions, as these may also be captured by vested interests (Gaede and Meadowcroft, 2015), so the politics of capture and conflict are a central component of transitions politics. The objective of a transition will be contested (Stirling, 2009) and corporate power and the established regime attempt to influence the

direction and depth of change (Rothaermel, 2001; Rothaermel, 2001a). Therefore, pioneers and niche innovators are confronted with strong vested interests to maintain the *status quo* (Geels, 2011; Hauser and Lindtner, 2016). Other scholars, however, highlighted the post-political character of transition management in some contexts where conflict and contestation are suppressed instead of being acknowledged and dealt with (Kenis et al., 2016). Another interesting theme in the literature on power and politics in transitions regards governance i.e. interactions between choices made by different actors within the socio-technical system in transition (Fischer and Newig, 2016). In fact, changes induced by transition favour the emergence of new forms of governance (e.g. Castán Broto, 2015) through the creation of new institutions as well as new networks of actors.

Literature also highlights that historical and spatial contexts matter in transitions in general and transitions politics in particular (e.g. Castán Broto, 2015; Swilling et al., 2015). Politics are relevant at various levels and scales. As power relations and culture differ from one region to another, sustainability transitions are highly context-specific (Castán Broto, 2015; Matson, 2009; STRN, 2010) and research on sustainability transition should take into account geography, places and spaces (Lawhon and Murphy, 2012; STRN, 2010, 2017). This has also to do with the strength of public institutions and impact of that on transitions, which is still a matter of debate. While some scholars (e.g. Swilling et al., 2015) argue that a strong state is necessary for energy transitions, others (e.g. Castán Broto, 2015) suggest that a strong state may create institutional path dependency that hinders transition. This clearly shows that how power and politics outplay in transitions processes also depends on the considered sector. The following section focus on agro-food sector.

4. Power and politics in agri-food sustainability transitions

The normative challenge related to the definition of sustainability, identified as one of the main challenges faced in sustainability transition research and practice, is particularly pertinent to agri-food systems. Again, interests and power play a role when sustainability problems need to be identified and suitable approaches to address them selected (Stirling and Smith, 2008), as there are several competing paradigms (Elzen et al., 2017; Levidow, 2011; Van der Ploeg, 2009). Given divergence in expected sustainability outcomes, there are inevitably questions raised in food system about whose sustainability is, or should be, prioritized (Smith and Stirling, 2010). In fact, food is a 'wicked' arena with multiple conflicting demands and actors (Peters and Pierre, 2014; Tyfield, 2011) and questions are raised in the food system not only about the desired direction of change, but also about the diversity of options and the distribution of change benefits/impacts (Leach et al., 2012). Important questions are also raised in the literature about the implications of using common sustainability frameworks to guide agro-food sustainability transitions. In a recent special issue on sustainable food system transitions in Sociologia Ruralis (Maye and Duncan, 2017), Slätmo et al. (2017) consider sustainability frameworks (e.g. Sustainability Assessment of Food and Agricultural systems - SAFA) as expressions of power by those who designed them.

According to IPES-Food (2017), power processes are relevant in determining change direction in agri-food systems. Power comes into play in different ways such as framing narratives, achieving legitimacy and visibility, setting debate terms and influencing policy. The report points out that industrial agri-food model generates highly unequal power relations as it allows powerful actors (e.g. governments, donors, private sector) to set the terms of sustainability debate. Doing so, powerful actors tend to generate imperatives and narratives that help obscuring the fallout of industrial agri-food system. The current agri-food governance model reinforces existing inequalities and grant an increasingly central role to actors with the technological capacity and economies of scale. In this context, some important actors (e.g. small-scale farmers in the Global South) as well as alternative pathways (e.g. agroecology) become marginal (IPES-Food, 2017). Attending to politics and power helps asking pointed questions about justice issues in agri-food systems (Allen, 2008). According to Anderson (2015:557) "*[…] continued inequity in access to healthy food elicits moral outrage, political instability, rising national and international conflict […]".* Therefore,

the report highlights the urgent need to document and communicate the potential of alternative food practices and systems to redistribute power in the food system (IPES-Food, 2017).

Alternative food practices include socio-technical niches and grassroots innovations, which are often referred to as alternative food networks (AFNs) (Goodman and Goodman, 2008; Goodman et al., 2012; Kneafsey et al., 2008). According to Levkoe (2011) the broad scope of alternative food initiatives can be conceptualised in the following typologies: social justice initiatives, ecological sustainability initiatives, community health initiatives, and democracy-enhancing initiatives. The issues of power distribution and equity are central in all these typologies, although they are addressed differently. The literature highlights creative processes but also conflicting motivations that exist within AFNs. In fact, niches actors (alike regime ones) are not necessarily harmonic and uniform in motivation; so, internal conflicts are present and should not be overlooked as they shape power relations even within the niches and, consequently, also propensity to collaboration with the regime and its actors. The political and power dynamics evolve when such niches confront dominant regimes. In general, it has proven a dilemma for niche actors to balance collaboration with regime actors to stabilize niches and scale-up their radical innovations without eroding their transformative potential and legitimacy or being conventionalised (e.g. Ajates-Gonzales, 2017).

Power and politics are still marginal topics in scientific literature dealing with agri-food sustainability transitions[1]. Many articles dealing with power and politics in research on sustainability transition in agri-food were published on the journal of Agroecology and Sustainable Food Systems. That might explain why many papers deal with agro-ecology, which is represented not only as a form of resistance but also as a system innovation leading to transition towards sustainable food systems based on food sovereignty. The analysed literature deals with different stages of the agri-food chain such agriculture and food production (Gonzalez de Molina, 2013; Lawhon and Murphy, 2012; Santamaria-Guerra and González, 2017; Taylor, 2017), food distribution and marketing (Wessel, 2013) or adopt a food system approach that covers different stages (Crivits et al., 2017; Crivits and Paredis, 2013; Hinrichs, 2014; Levkoe, 2011). Most of selected documents address crop production, but some deal also with fisheries and seafood production (Lebel et al., 2008). Other papers focus on food security in general (Anderson, 2015) or in urban settings (Moragues-Faus and Morgan, 2015). Some documents address indirectly transitions in food systems as they focus mainly on deforestation (Tejada et al., 2016), pesticides use (Sherwood and Paredes, 2014) or biofuels (Partzsch, 2017).

The reviewed literature provides some interesting cases regarding power and politics in agri-food transitions (cf. agroecology, urban foodscapes, biofuels). Agroecology can be seen as a form of resistance to neoliberal politics and a means of transforming dominant food systems. In particular, agro-ecological practices and movements proved fundamental in persistence of small-scale family farming (Santamaria-Guerra and González, 2017), as illustrated by demands of food sovereignty advocates for greater control in the food system. The empowerment of family farmers resonates well with definition of power by Arendt (Allen, 1998) and understanding of 'power with' by Partzsch (2017), that's to say processes of generating collective strength through finding common ground and developing shared values. It implies learning processes that allow agro-ecological actors to actively build up a new collective awareness through questioning self-perceptions (cf. Eyben et al., 2006).

Agro-ecology is used as a narrative in defending small-scale farmers, that are considered in this case as niche actors. However, many small-scale farmers practice subsistence and traditional agriculture, which represents the dominant farming system in many developing countries, thus making difficult their categorisation. Even in niches, such as organic agriculture, the original ecological and socio-economic aspirations – such as equalised power relations along the value chains – are being eroded or dismissed. This creates a

[1] A search on agri-food sustainability transitions carried out the same day - July 5, 2017 - on Scopus using the string *Title-Abs-Key* "*transition AND sustainability AND (food OR agri)*" (so without any reference to power or politics) resulted in a list of 372 documents.

paradoxical situation of 'niches within the niches' that's to say new social groups and actors' networks that are more aligned with the original agro-food sustainability narrative (e.g. Wessel, 2013), which may generate tensions and power struggles even among the actors of the same original niche. Agro-ecology principles can also be used to confront proponents of 'modern' farming technologies such as genetically modified organisms (GMOs), which are advocated as a means to achieve food and nutrition security in developing countries (e.g. Gopalan, 2001). It can also help in actuating 'a change in thinking about food systems change' – with more attention to power, politics, governance, values and ethics issues - that is considered by Hinrichs (2014) fundamental for agri-food sustainability transitions. For doing so, agro-ecology needs more political and institutional power, that's why Gonzalez de Molina (2013) highlights the need of a 'political agroecology' – so more engagement of agro-ecological movements in politics and policies - by highlighting the importance of power relations in agroecosystem constructions and close relationship between politics and agroecosystem dynamics. Similarly, Lawhon and Murphy (2012) call for a more articulated integration of geography and political ecology (cf. Rocheleau, 2008) in transition studies for understanding the time, space and scalar characteristics of sustainability initiatives.

Urban foodscapes are an arena where different actors from different domains (public sector, civil society, private sector) interact in policy and governance setting (Cretella and Buenger, 2016; Moragues-Faus and Morgan, 2015). This implies definition and negotiation of the rules of the game that apply to all actors, creation of new food governance systems as well as design of new food policy configurations (Moragues-Faus and Morgan, 2015). Power and politics are especially important in situations of 'institutional void' (Crivits et al., 2017) where political and discursive representation prevails in determining political legitimacy and, eventually, hegemony. In urban settings, the food system has proven to be a highly contested battleground that helps mobilizing progressive forces and opens up new political possibilities. It is also a space where new forms of creation between the civil society and municipal administrations have been experimented (Moragues-Faus and Morgan, 2015). However, this 'political appeal' of food-related topics can also mean that they risk to be used also in other political discussions and debates as well as in power struggles, between progressive political currents and incumbent elites, that have no direct implications in terms of agri-food sustainability transitions. It seems that a food politics transformation is needed to achieve transition in food system, with the help and contribution of AFNs. Levkoe (2011) elaborated a framework for a 'transformative food politics' that can be used by AFNs as a tool for critical engagement in food system transformation. In fact, food can be used as an entry point for deeper political engagement. Levkoe (2011) calls for a 'reflexive localisation' of food politics and warns that "*while positive outcomes can result from food localism, the local scale cannot be assumed to be ultimately positive or absent of unequal power relations*".

However, food politics are not only the domain of action of local AFNs as they are related also to the politics of everyday; food can be used as an 'anti-transition' instrument that's to say as a means and a form of political resistance against changes in lifestyles, especially those regarding food cultures, induced by globalisation or westernisation (Smith and Jehlička, 2007). This questions the general discourse linking transition and sustainability in 'sustainability transitions' as 'non-transition' can in some cases represent the most sustainable way. In general, there are many questions raised about the increasing power of multinational corporations in the current agri-food regime and implications of this food system governance for small-scale agriculture and food security (e.g. Gopalan, 2001).

Biofuels can be considered an instrument for energy transitions, but may create sustainability trade-offs in agri-food systems. Partzsch (2017) argues that evaluation of biofuels depends mainly on perception of power and change with regard to sustainability. She points out that the understandings of power as 'power with' (biofuel as a sustainable innovation) and 'power to' (biofuel as a creative alternative and a 'green' resistance/non-conformism form) tend to prevail in the research on biofuels, while concepts of 'power over' (biofuel as a gold rush) have been only recently applied to demonstrate that biofuels development benefitted mainly conglomerates that manipulated biofuel governance in their favour. Power imbalances can affect processes of collective empowerment ('power with') and resistance ('power to').

Perceptions of biofuels as a sustainable innovation (cf. 'power with') or a creative alternative (cf. 'power to) may also provoke changes in existing 'power over' relations and contribute to addressing inequalities and asymmetries in agri-food systems. In the case of 'power over', she differentiates four dimensions: visible power (lobbying activities and financing to promote biofuels), hidden power (neglecting issues such as competing food demands), invisible power (manipulating biofuel discourse by linking it only to climate change) and unconscious power (unconsciously reproducing power relations in industrial systems) (Partzsch, 2017). Invisible power reminds of the 'behind-the-scenes power' of Anderson (2015:557) that is brokering between wealthy countries and corporate interests, which is held responsible for conditioning discussion and negotiation at the Committee on World Food Security (CFS). While the three categories of power as well as the four faces and dimensions of 'power over' have been elaborated by Partzsch (2017) for biofuels they are valid also in agri-food sustainability transitions: 'power with' perspective focuses on the environmental, social and economic benefits of AFNs; 'power to' perspective focuses on processes by which actors develop alternatives to the dominant agri-food system; and 'power over' perspective points to the limits of change in agri-food system because of the dominance of specific narratives, discourses, actors and structures. However, the three perspectives on power are not mutually exclusive, but supplementary.

Biofuels are central also in the relation between agri-food sustainability and climate change. Taylor (2017) describes climate-smart agriculture (CSA) approach as a 'depoliticised approach to the global food system' that tends to minimise power relations, inequality dynamics, and tensions questions. Climate change is affected also by changes in land use and deforestation (Tejada et al., 2016), which are affected by national policies (e.g. agriculture, rural development) and local politics.

Politics has often failed in balancing food security aspirations with those of environmental protection in agriculture policies. This unbalance clearly shows tensions and different visions within the policy making arena, which reflect also divergences of visions within society about sustainability challenges and priorities. These tensions transcend national borders to the international level, such as at the CFS. Food security is related to power at individual, household, community, national and international level. However, Anderson (2015) shows that also micro-politics, or politics of practices, are relevant in shaping food systems, as socio-ecological systems, in which actors are constantly changing their practices and knowledge systems (that provide enabling power to make changes needed) to adapt to new situations. Micro-politics reminds of the 'human face of sociotechnical change' (Sherwood and Paredes, 2014) that explains how inconsistencies in people's daily practices interfere even with public policy regarding use of highly toxic pesticides. Therefore, understanding actors' relations (cooperation, collusion, collision, etc.) and power dynamics at different levels (individuals, households, communities, territories, countries) is fundamental to foster transition. Lebel et al. (2008) point out that there is a need for platforms that bridge the disconnection between the politics of consumption (cf. plates), food chains and production places as well as spaces of concertation between all involved actors in order to enact any sustainability transition. In general, this confirms the importance of geography in transition processes (Lawhon and Murphy, 2012). Micro-politics of transition also transcends theoretical frameworks, so that Crivits and Paredis (2013) call for an integration of social practice method and MLP – to overcome the limits of Individualist / structuralist dichotomy – in order to better understand consumption practices in local food systems.

5. Conclusions

The sustainability transitions research field is gaining momentum, but it has been criticised for underplaying many questions such as politics, power, governance, values and ethics. Power relations and vested interests are inevitably part of transition processes. Therefore, power dynamics and politics of transitions deserves more attention and better integration in sustainability transition studies.

Power and politics are particularly relevant when it comes to agri-food systems where different niche alternative food networks (e.g. community-supported agriculture, farmers' markets, urban community gardens, farm food outlets, organic box schemes, farm to school programs, agroecology-inspired initiatives, food co-ops) are opposing and trying to change the incumbent agri-food regime. Interests and power play a crucial role in agri-food systems when sustainability problems need to be identified and suitable approaches to address them selected, as there are several competing paradigms. The contested nature of sustainability in transition studies transforms inevitably the food system in a highly contested battleground and makes it difficult to create more inclusive food narratives. Politics of transition are also relevant in understanding why some alternative food networks are conventionalised and/or co-opted and other not, as well as the potential for scaling up sustainability transition initiatives supported by grassroots food movements. Transition politics in agri-food are also related to those of other sectors such as energy (e.g. biofuels). Nevertheless, power and politics are still marginal topics also in scientific literature dealing with agri-food sustainability transitions.

Discourses on food, and food sustainability, are embedded in political debates, so more attention will need to be paid to aspects of governance, politics, agency, and power dynamics in research on sustainability transitions in agri-food systems. In fact, comprehending transition dynamics implies not only understanding the material and social components of a socio-technical system – such as the agri-food system - as well as their interactions and co-evolution, but also their interrelationships with the political component. According to Avelino et al. (2016:5) "*there is a crucial challenge in moving beyond fragmented interventions towards a consolidation of how we embed transitions politics into transition studies. This has a range of implications for theorising the two core issues of transition theory: understanding transition dynamics and understanding how to intervene in such dynamics*". A better integration of politics into transition studies would help to understand power dynamics in sustainability transitions and allow for more effective transition facilitation or management. Neglecting politics and power means missing out one of the most important levers to shape and influence sustainability transitions in agri-food systems.

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