



Degrowth and agri-food systems: a research agenda for the critical social sciences

Leonie Guerrero Lara¹  · Laura van Oers¹ · Jacob Smessaert¹ · Julia Spanier¹ · Guilherme Raj¹ · Giuseppe Feola¹

Received: 30 August 2022 / Accepted: 5 December 2022 / Published online: 13 January 2023
© The Author(s) 2023

Abstract

Degrowth has become a recognised paradigm for identifying and critiquing systemic unsustainability rooted in the capitalist, growth-compelled economy. Increasingly, degrowth is discussed in relation to specific economic sectors such as the agri-food system. This paper builds on the foundational work of Gerber (2020) and Nelson and Edwards (2021). While both publications take a rather specific analytical or disciplinary focus—the former specifically connects critical agrarian studies and degrowth, the latter explores the contributions of the recent volume ‘Food for degrowth’—this paper takes stock of the emerging body of literature on degrowth and agri-food systems more broadly. It proposes research avenues that deepen, expand and diversify degrowth research on agri-food systems in four areas: (i) degrowth conceptualisations; (ii) theorisation of transformations towards sustainability; (iii) the political economy of degrowth agri-food systems; and (iv) rurality and degrowth. Together, these avenues devote due attention to a variety of agents (ranging from translocal networks to non-humans), spaces (e.g. the rural), theories (e.g. sustainability transitions and transformations towards sustainability) and policies (of the agricultural sector and beyond) that thus far have received limited attention within the degrowth literature. The critical social science perspective on degrowth agri-food systems, which is advanced in this paper, illuminates that the present unsustainability and injustice of hegemonic agri-food systems are not merely a problem of that sector alone, but rather are ingrained in the social imaginaries of how economies and societies should work as well as in the political–economic structures that uphold and reproduce these imaginaries.

Keywords Post-growth · Agriculture · Sustainability · Transformations · Capitalism

Introduction

In today’s context of multiple socioecological crises, discussions and critiques of growth, as well as proposals for post- or degrowth societies have entered public debates (see e.g. Jackson 2009; Smil 2020; Hickel 2021a). In particular, degrowth has become a recognised paradigm for identifying and critiquing systemic unsustainability rooted in the capitalist, growth-compelled economy. Degrowth is defined as ‘an equitable downscaling of production and consumption that will reduce societies’ throughput of energy and raw materials. [...] Degrowth signifies a society with a smaller

metabolism, but more importantly, a society with a metabolism which has a different structure and serves new functions’ (D’Alisa et al. 2014, p. 3f). In an attempt to translate degrowth’s broader critiques into concrete debates and policies, researchers have recently begun exploring intersections of degrowth with specific economic sectors such as housing (Nelson and Schneider 2019) and tourism (Fletcher et al. 2019). Increasingly, degrowth is discussed in relation to the agri-food sector, as attested by a growing number of journal articles, conference contributions and a recently edited volume by Nelson and Edwards (2021).

This interest in agri-food systems from a degrowth perspective is not entirely new; in fact, this literature reconnects with the intellectual work of some degrowth pioneers who have addressed agri-food in their writings from different perspectives ranging from explorations of entropic degradation and the biophysical limits it poses to agricultural production (Georgescu-Roegen 1971) to discussions

Handled by Federico Demaria, Universitat de Barcelona, Spain.

✉ Leonie Guerrero Lara
l.guerrerolar@uu.nl

¹ Copernicus Institute of Sustainable Development, Utrecht University, Utrecht, The Netherlands

of meta-physical questions on the value of land and living beings (Schumacher 1973).

In turn, the resurgent literature on agri-food systems and degrowth has started to explore the centrality of the growth question to agri-food system sustainability and agrarian change (Gerber 2020) and the relevance of degrowth for alternatives to industrial, capitalist agri-food systems (Nelson and Edwards 2021). Yet, much remains to be explored. How would a research programme for the critical social sciences on degrowth and agri-food systems look? How could the strengths of degrowth's system analysis be combined with those of other scholarship traditions such as rural studies, sustainability transformations and agrarian studies, among others? What research questions would emerge from a reflection on the embeddedness of agri-food systems in broader capitalist socio-economies and socio-ecologies? This article takes stock of this emerging body of literature and proposes a research agenda that deepens, expands and diversifies future degrowth research on agri-food systems. Agri-food systems 'encompass the entire range of actors and their interlinked value-adding activities, engaged in the primary production of food and non-food agricultural products, as well as in storage, aggregation, post-harvest handling, transportation, processing, distribution, marketing, disposal and consumption of all food products including those of non-agricultural origin' (FAO 2021, p. xii).

Among the publications that have established degrowth scholarship on agri-food systems as a distinct area of study, Edwards and Nelson (2021) and Gerber (2020) have mapped the contours of the field and proposed avenues for future research; however, each of these foundational publications took a rather specific analytical or disciplinary focus. Edwards and Nelson's (2021) research agenda highlights a diverse range of relevant research topics, including reconnecting households to food provisioning, multidimensional care and the influence of, and resistance to, growth narratives in food systems. Their research agenda forms the final chapter of their edited volume *Food for Degrowth* and primarily builds on the findings of the volume's contributions. Gerber (2020) applies a marked political economy perspective to connect critical agrarian studies with research on degrowth, conceptually linking the agrarian question to the growth question. He elaborates on the focus, key themes, intellectual traditions and normative orientations of both research fields to identify potential analytical synergies.

This paper builds on these two research agendas and is further informed by a literature review (for further information on materials and methods see Online Appendix I). By extending the scope of the considered literature, this paper endeavours to forge a research agenda that can contribute to establishing degrowth research on agri-food systems as a field of study. It identifies remaining gaps, proposes ways to address them and

stirs new discussions by challenging some current assumptions held in this emerging research field.

This research agenda is directed at scholars interested in the intersection of degrowth and agri-food systems. Following the footsteps of Gerber (2020) and Nelson and Edwards (2021), we approach this intersection from a critical social science perspective. For this purpose, we mobilise diverse bodies of literature ranging from social movement scholarship, critical transformation research, new materialist literature on the more-than-human, political economy perspectives on agri-food systems such as food regime and rural studies, amongst others. Doing so allows us not only to enrich degrowth research on agri-food with well-established approaches to agri-food studies that have only marginally been mobilised in degrowth research, but also to explore the intersections of a specific degrowth transformation of agri-food systems with a wider, societal degrowth transformation. In particular, adopting a critical perspective to degrowth agri-food system can highlight and identify the root causes of the present unsustainability and injustice of agri-food systems in larger, capitalist societal structures and is not bound to solely look at the agri-food sector. Thus, this research agenda explores connections with pertinent critical social science theories and transformation practices of agri-food systems beyond degrowth as well as debates on societal-level degrowth transformation.

Thereby, we seek to contribute to the ongoing debates in this journal which adopt a critical social science perspective and openly call for repoliticising and pluralising sustainability science (see Asara et al. 2015 on degrowth; Escobar 2015 on the pluriverse; Ertör and Hadjimichael 2020 on blue degrowth; Menton et al. 2020 on environmental justice). Such politicisation is much needed in light of the dominant sustainability discourse, which, all too often, promotes sustainability platforms and agreements such as the Sustainable Development Goals (SDGs) (Blythe et al. 2018). Since economic growth remains a central goal within the SDGs (Muraca and Döring 2018), the 2030 Agenda for Sustainable Development fails to combat the root causes of the multiple injustices that persist globally (Menton et al. 2020). More so, the SDGs have, in specific areas, ignored universally agreed human rights. For instance, food, contrary to water or health, has not received the status of a fundamental human right within the SDGs, degrading the 'right to food' to 'a development goal carrying no accountability' (Vivero Pol and Schuftan 2016, p. 4). However, market mechanisms alone will not be sufficient to guarantee the food needs of every human being (ibid.). Therefore, this research agenda invites scholars to explore the manifold possibilities to construct degrowth-benign agri-food systems. As a group of researchers based in Europe and versed in specific themes of agri-food system and degrowth research, the positionality and expertise of the authors are reflected in this research agenda. Furthermore, this research agenda emerges from the engagement with extant literature on degrowth, which mainly

originated in and gained momentum in Europe, and therefore overrepresents Western case studies (Demaria et al. 2013; Dengler and Seebacher 2019). Nevertheless, this paper seeks to represent a diversity of theoretical approaches to degrowth and agri-food systems and has identified specific areas in which critical environmental justice and decolonial approaches can fruitfully inform a research agenda on degrowth and agri-food systems.

The paper is structured as follows. “[Degrowth research on agri-food systems: an emerging research field](#)” takes stock of degrowth research on agri-food systems. “[Gaps and avenues for future research](#)” identifies avenues for future research along four themes, namely, (i) degrowth conceptualisations, (ii) theorisation of transformations towards sustainability, (iii) the political economy of degrowth agri-food systems and (iv) rurality and degrowth. The final section concludes the paper with a brief summary.

Degrowth research on agri-food systems: an emerging research field

Degrowth research on agri-food systems has adopted a broad range of research designs and spanned various levels of analysis ranging from the individual to the collective, community and translocal network levels (Nelson and Edwards 2021). A substantial proportion of this scholarship has followed a case study approach, often investigating ‘alternative’ agri-food practices’ and grassroots initiatives’ compatibility with and embodiment of degrowth. This type of case study research has usually been characterised by qualitative analysis and mainly, though not exclusively, by a focus on the local level (ibid.). Other types of contributions have included theoretical discussions, for instance on appropriate agricultural technologies for degrowth (Bartkowski 2017; Gomiero 2018), and quantitative research on the social metabolism of agri-food systems as well as projections of food and calories provisioning under different degrowth scenarios (Leahy 2021). Participatory and activist practices are strongly represented in degrowth research on agri-food systems, including the notable emergence of auto-ethnography as a method for drawing on intimate knowledge of and direct engagement with case studies (e.g. Bogadóttir and Olsen 2017 on setting up a university-based food co-operative; Strenchock 2021 on direct marketing in Hungary).

Degrowth research on agri-food systems has built upon long-standing and central concepts, theories, and debates in degrowth scholarship, such as those of social metabolism, sufficiency, appropriate technologies, and democracy, as well as more recently emerging themes such as gender, care, work, open localism, indigenous knowledge and social movements. This expanding and diversifying

conceptual basis has informed analyses of the current agri-food system as well as examinations of existing alternatives and the elaboration of visions of agri-food system transformation beyond accumulation, exploitation and growth. Specifically, degrowth research on agri-food systems has put the degrowth debate into conversation with existing work on food sovereignty (Roman-Alcalá 2017), agro-ecology (Cederlöf 2016) and decolonisation (Radu et al. 2021). In developing these connections, the literature has found inspiration in a variety of theoretical traditions, including ecological economics (e.g. Bloemen et al. 2015; Gomiero 2018), political ecology (e.g. Bogadóttir and Olsen 2017; Ertör-Akyazi 2020), social practice theory (e.g. Boonstra and Joosse 2013), diverse and community economies (e.g. Daněk and Jehlička 2021) and, lately, critical agrarian studies (e.g. Gerber 2020; Scheidel et al. 2022) and (eco)feminism (e.g. Prieto and Domínguez-Serrano 2017; Brückner 2021). Fruitful interconnections have been established between degrowth and studies of alternative food networks and movements (e.g. Öz and Aksoy 2019), short supply chains (e.g. Voget 2009) and local food systems (e.g. Boonstra and Joosse 2013).

Degrowth research on agri-food systems has mostly been limited to food production, and within that, horticulture, whereas limited attention has been given to animal husbandry. A recent wave of studies has started to address fisheries and marine ecosystems for sustainable food production in what is referred to as ‘blue degrowth’ (for a review, see Scheidel et al. 2022). For instance, Bogadóttir (2019) problematises blue growth strategies in the Faroe islands, while Ertör-Akyazi (2020) also looks at blue degrowth practices in Istanbul that develop in response to growth in marine capture fisheries. Furthermore, degrowth research on agri-food systems has provided notable discussions and analyses of food production, but has largely disengaged with other sections of food supply chains, such as food consumption, processing, distribution and retail.

A prominent theme in this field is the degrowth *transformation* of agri-food systems. Contributions to this theme include (i) diverse strategies to bring about a transformation towards degrowth agri-food systems, ranging from explicitly revolutionary, anti-statist (Sklair 2019) to reformist approaches via public policies (González de Molina 2015), as well as hopeful, ‘utopian’ politics (e.g. Roman-Alcalá 2017); (ii) explorations of different geographies of degrowth transformations, including pleas for urban agriculture (e.g. Manteuffel 2014; Cederlöf 2016) and speculations how an agricultural transformation towards degrowth may materialise differently in the Global South and Global North (Clausing 2014); and (iii) examinations of intentional, outward and ‘vocal’ strategies of change in contrast to more ‘quiet’ (but potentially transformational) forms of engagement with alternative

agri-food systems (Bogadóttir 2020; Daněk and Jehlička 2021). Lessons and important insights have been derived from both historical and ongoing ‘success cases’—notably Cuba’s agro-ecological transformation (Boillat et al. 2012; Borowy 2013; Cederlöf 2016) and Catalunya’s agro-ecological co-operative movement (Edwards and Espelt 2021; Homs et al. 2021).

In summary, degrowth research on agri-food systems is a diverse and expanding body of literature. It draws on rich case studies to provide insights into the ongoing pre-figuration of and transformation towards degrowth agri-food systems on various levels. It engages with a vast variety of conceptual and theoretical traditions of degrowth research and beyond. The next section identifies remaining research gaps and sketches a research agenda that can productively build on the existing scholarship and move the field forward.

Gaps and avenues for future research

This section discusses four areas for further development that emerged during the literature review, namely (i) degrowth conceptualisations, (ii) theorisation of transformations towards sustainability, (iii) the political economy of degrowth agri-food systems and (iv) rurality and degrowth. Each area identifies research needs and proposes questions that can fruitfully inform future degrowth research on agri-food systems.

A reflexive approach on conceptualising degrowth for research on agri-food systems

Various scholars have acknowledged and discussed the lack of a single understanding of degrowth (e.g. Kallis 2011; D’Alisa et al. 2014). In fact, the concept of degrowth has diverse intellectual roots; it is multifaceted rather than a sharply defined analytical concept (Demaria et al. 2013; Muraca 2013).

Therefore, it is not surprising that degrowth research on agri-food systems adopts a broad range of degrowth conceptualisations, encompassing varying degrowth principles as well as denoting degrowth at times as a movement, theory or political programme. For example, some researchers have stressed the anarchist (e.g. Sklair 2019), anti-capitalist (e.g. Nelson and Edwards 2021) or feminist (e.g. Brückner 2021) character of degrowth in relation to agri-food systems or pointed to the conceptual similarities between degrowth and agro-ecology (e.g. Homs et al. 2021). Some have conceptualised degrowth as a form of ordinary and ‘quiet’ sustainability (e.g. Daněk and Jehlička 2021; Pungas 2021), whereas others have

assumed that this process entails more conspicuous ‘conscious’ or ‘deliberate’ action (e.g. Cristiano et al. 2021).

Particularly in case study research examining the relevance of alternative agri-food initiatives for degrowth, and vice versa, many studies take for granted the existence of a core set of ‘degrowth principles’. However, the principles that have been foregrounded in the literature vary from care (e.g. Brückner 2021; Pungas 2021), conviviality (e.g. Edwards and Espelt 2021), autonomy (e.g. Edwards and Espelt 2021), decommodification (e.g. Cristiano et al. 2021), commons (e.g. Bogadóttir and Olsen 2017), re-localisation (e.g. Boonstra and Joosse 2013), to frugal abundance (e.g. Nelson and Edwards 2021) and economic democracy (e.g. Bogadóttir and Olsen 2017; Roman-Alcalá 2017), among others.

Consequently, there is a risk of oversimplifying degrowth by demeaning it to a ‘shopping list’ from which to selectively choose principles for strategic research purposes—for instance, to argue for the alignment, or lack thereof, between a given agri-food initiative and degrowth. However, in the absence of a widely agreed list of degrowth-defining principles, and with awareness that each principle is susceptible to different understandings across cultural contexts (e.g. care) and political orientations (e.g. community), we consider it essential to more holistically engage with the concept to avoid a reductionist approach. Such an approach necessarily overlooks the multidimensional and systemic character of alternative agri-food initiatives and practices. Although specific studies may legitimately delve in-depth into selected characteristic of alternative agri-food initiatives, it is crucial to reflect on how this emerging field can analytically scrutinise, rather than merely illustrate or even take for granted the degree of alignment between degrowth and alternative agri-food practices. In a recent article, McGreevy et al. (2022) present five ‘post-growth agri-food system principles’—sufficiency, regeneration, distribution, commons and care—which they deem essential for moving beyond the growth paradigm. Importantly, their work recognises the need to simultaneously engage with several degrowth principles, but it fails to specify why these and not other principles were selected (ibid.).

The diversity of degrowth conceptualisations in the degrowth literature on agri-food systems has at least three important implications.

Considering the ecological and material throughput of alternative agri-food initiatives

First, there is a tendency to focus on social principles of degrowth while overlooking ecological ones. Studies that investigate the ecological conditions and the energy and material throughput of alternative agri-food initiatives are

scarce (for a notable exception, see Cederlöf 2016 who investigates the ecological geography of different organic urban farms and their integration in industrial systems of energy and material provision). In other words, degrowth research on agri-food systems has often assumed, rather than investigated, the ecological sustainability of alternative practices. More research is needed to identify and quantify the actual, multidimensional impacts of alternative agri-food practices. To address this gap, it is useful to draw on existing quantitative assessments of farming systems and aspects related to social metabolism, nutrition and resource distribution (also beyond the initiative level). For instance, Leahy (2021) asks whether permaculture in greater Melbourne, Australia, can reduce not only Melbournians' 'food-print' but also provide enough food without the use of fossil fuels, Bogadóttir (2020) considers the social metabolism of degrowth aquaculture models in the Faroe Islands and Gomiero (2018) assesses the possibility of self-sufficiency via ecological food provisioning in Germany. Research that identifies and quantifies possible changes on social metabolism and nutrition could serve as a 'reality check' for claims about the potential of different alternative agri-food models to contribute to a reduction of throughput while maintaining the capacity to meet nutritional needs and increase social well-being. Important questions in this respect are: What is the social metabolic space of possibilities for the reduction of material and energy throughput in agri-food initiatives from food production to consumption to make them 'thermodynamically efficient' (Cederlöf 2016, p. 783) rather than thriving for more economically efficient modes of consumption and production? What contested trade-offs (e.g. land use for food production versus other purposes) within and beyond the agri-food system are involved in such a reduction of material and energy throughput? Conceptually and methodologically, social ecology and ecological economics offer fertile ground for addressing such questions around the ecological relations in production systems (Scheidel et al. 2022).

Reconceptualising degrowth as a political programme and social movement

Another concern regarding research on agri-food systems is that a more reflexive approach to the conceptualisation of degrowth beyond 'degrowth as a practice' is needed. The ways in which researchers understand, read and conceptualise degrowth matter, as they fundamentally shape how research is carried out, the focus of analysis, and how potential for transformative change is envisioned. For instance, conceptualising degrowth as a practice likely results in the analysis of individuals and grassroots initiatives that prefigure a degrowth society. In contrast, two conceptualisations of degrowth have been scarcely used in degrowth research

on agri-food systems, namely, degrowth as a policy and as a social movement.

Degrowth can be seen as a set of concrete policy proposals regarding labour (work sharing and reduction of the working week to at most 32 h), welfare (minimum and maximum income), consumption (reduction of advertising, withdrawal of subsidies for polluting activities) or finance (green tax reform), such as those discussed by Kallis (2015) or proposed in Green New Deals without growth (Mastini et al. 2021). However, to date, few studies have investigated the role of policies, such as those governing trade and agriculture (González de Molina 2015; De Schutter 2020), as factors of a degrowth transformation of agri-food systems. Furthermore, it remains poorly understood how broader degrowth policies, such as a universal basic income or a reduced working week, may matter for a degrowth transformation of agri-food systems by providing financial stability and time, which may enable and/or motivate some households to engage in food self-provisioning or participate in agri-food collectives. What social and economic policies, and under what conditions, can support a degrowth transformation of the agri-food system? Answering this question requires drawing from policy analysis literature from both theoretical and methodological perspectives.

Another conceptualisation of degrowth is that of a social movement (e.g. Muraca 2013). Social movements organise and sustain collective action to bring about or resist social change (Snow et al. 2019). This aspect opens a further promising research avenue, equipping us with the theoretical baggage to investigate political alliances and other forms of mutual support between the degrowth and agrarian movements (see also Gerber 2020). However, whereas degrowth is often referred to as a social movement in theory and practice, it is seldom studied as such in connection to agri-food systems. For a notable exception, see Salzer and Fehlinger's (2017) chapter on the food sovereignty and degrowth movements, which, amongst others, unpacks their relationship by looking at their discourses and learning opportunities between the movements. However, since both authors are practitioners, their analysis does not engage with social movement scholarship. The analysis of degrowth as a social movement through the vast field of social movement scholarship helps put forward questions that have rarely been asked to date: Under which conditions does degrowth as a social or intellectual movement have political, economic and/or cultural impacts on the agri-food system (see Amenta et al. 2010; Amenta and Polletta 2019 for the impacts of social movements)? How can political alliances for change between the degrowth and agrarian movements form and be consolidated, in particular if they do not (yet) feel attracted to each other? What are potential benefits or tensions of such alliances? How do sets of tools and actions move within

and across degrowth and agrarian movements? Can complementarity between social struggles forge strong alliances between degrowth and agrarian movements rather than overlap among them? Key to answering these questions may be (i) the analysis of networks of degrowth-inspired agri-food initiatives rather than individual initiatives and (ii) the examination of how such networks articulate both prefigurative (e.g. Yates 2015) and contentious politics (e.g. Diani and McAdam 2003) across multiple levels. Although there are examples of degrowth research on agri-food systems that focus on networks (Edwards et al. 2021; Szakál and Balázs 2021), as argued by Roman-Alcalá (2017), there is ample room and need for further theoretical development in determining the role of collective agency geared towards shifting policies, influencing political debates, reconfiguring social norms and institutionalising discourses towards degrowth within the agri-food system.

Enriching the concept of degrowth through the lens of agri-food systems

Scholars working solely on degrowth can benefit from engaging with research on specific economic sectors and notably agri-food systems. As noted above, conceptualisations of degrowth are highly diverse, and due to the dynamic nature of this field, they are evolving along an expanding body of literature. How do understandings of degrowth evolve when applying it to a specific sector? In what ways can applications of degrowth research to agri-food systems enrich the concept of degrowth? In other words, what unique insights can be gained from investigating the agri-food system through a degrowth lens to further the theorisation of a degrowth transformation, thereby potentially challenging and/or enriching key assumptions of degrowth as well as proposing new concepts? For instance, how can seasonality, the non-intervention in and acceleration of growing cycles and heterogenous temporalities in agriculture help us to move beyond the linear thinking and time efficiencies of the growth economy? See, e.g. Koretskaya and Feola (2020) for a discussion on de-celerated and cyclical notions of time in agri-food collectives as a response to linear, continuously unfolding time and Carolan (2022) on temporal and spatial fixes in vertical farming.

Advancing the theorisation of transformations towards degrowth agri-food systems

While it is widely agreed that degrowth advances fundamental socioecological transformations of societies and economies (Asara et al. 2015; Kallis et al. 2020), degrowth research on agri-food systems has lacked a

rigorous explanation of how change towards degrowth comes about. Insights into the realisation of change in agri-food systems have been valuable but fragmented. This research has only marginally been informed by the scholarship on sustainability transitions and societal transformations, thereby largely neglecting the recent turn in degrowth research towards a focus on *how* degrowth transformation can be fostered (Kallis et al. 2020). Looking ahead, degrowth research on agri-food systems urgently needs a more solid and in-depth engagement with theories of sustainability transitions (e.g. Abson et al. 2017; Loorbach et al. 2017), transformations to sustainability (e.g. Pelling 2011; Feola 2015) and their applications to agri-food systems (Lamine 2011; Hermans et al. 2016; El Bilali 2019). There are at least three ways in which degrowth research on agri-food systems can fruitfully build on these theories and specific currents therein.

Learning from critical perspectives within sustainability transitions and transformation scholarship

Firstly, the currently limited engagement with the above-named theories has led to a number of shortcomings—for instance, a lack of understanding on how different system levels are connected in processes of sustainability transitions or transformations. To date, degrowth research on agri-food systems has focussed to different extents on the micro (individual, local), meso (urban area, regional) and macro (national, global) levels. However, it has typically limited the engagement with this issue at the level of assumptions (see González de Molina 2015 on the necessity of simultaneous individual, collective and institutional change for agroecology) and essentially failed to investigate the propagation of change across levels. Cederlöf (2016) investigates the multiscale configurations that constitute productive agricultural systems and Ertör-Akyazi's (2020) study on small-scale fisheries briefly addresses existing alliances across scales; yet, neither study connects explicitly to processes or theories of sustainability transitions and transformations. Such theories have proven useful in a diverse range of geographical contexts and offer the most advanced and sophisticated understanding of these processes to date, including issues such as multiscale and multilevel connections, which have been understudied in degrowth research on agri-food systems. Consequently, they could represent a reference point for those interested in developing theory-informed accounts of degrowth transformation as it concerns agri-food systems.

These theories certainly have limitations for the type of fundamental socioecological transformation that is of interest to degrowth researchers. For example, they have usually lacked a consideration of capitalism (Feola 2020; Newell 2020), have been predominantly developed and applied to Western countries and are of limited or uncertain

applicability to non-Western societies (Hansen et al. 2018). They have also often given scarce consideration to normative and ontological pluralism, which has contributed to the rigidity of de-politicised techno-centric responses to global environmental change and undermined the transformative co-production of political economies, cultures, societies and biophysical relations (Pelling 2011; Stirling 2011; Nightingale et al. 2020). Sustainability transition and transformation theories have considered a narrow spectrum of political strategies to face global environmental change, often overlooking the potential of resistance and conflict to initiate the early stages of a transformative process as well as how movements have generally been at a high risk of capitalist co-optation by actors interested in maintaining the status quo (Feola 2015; Blythe et al. 2018; Nightingale et al. 2020).

Nevertheless, the most critical theories within this field, namely those building on political economy, critical social sciences and humanities (e.g. Scoones 2016; Hansen et al. 2018; Feola 2020) can be useful for degrowth research on agri-food systems. One example is the recent effort to theorise processes of deconstruction of capitalist modernity for the construction of post-capitalist realities in transformations to sustainability (Feola 2019; Feola et al. 2021). By bringing together theories of regime destabilisation and those of decoloniality, autonomy, resistance, social movements, political ecology and degrowth, this approach foregrounds processes of deconstruction, rupture and disarticulation as conditions for—rather than consequences of—transformation, which can be used to inform thinking about the role of unmaking modern capitalist configurations that hinder degrowth-benign agri-food systems (ibid.). Therefore, the question remains open: What processes of deconstruction are needed to make space for degrowth-benign agri-food systems? How can degrowth research on agri-food systems fruitfully build on existing theorisations of sustainability transitions and transformation while also possibly contributing to their development? How can critical perspectives on sustainability transitions and transformations ontologically enrich degrowth research on agri-food systems? Finally, (how) do theorisations on ‘degrowing agri-food systems’ resemble processes of de-(construction) in sustainability transitions?

Investigating the multiplicity of agents of change beyond grassroots initiatives

Secondly, the underlying message that degrowth research on agri-food systems appears to convey is that transformative change occurs from the bottom up through local grassroots initiatives that experiment with social innovation and alternatives to growth-based, industrial agri-food models. Interlinkages and material flows between local grassroots initiatives (e.g. urban gardens) with city, provincial, national and

international levels are not explored. Furthermore, the role of peasant and food movements (Roman-Alcalá 2017; Salzer and Fehlinger 2017), national governments (e.g. González de Molina 2015) and the business sector (e.g. Rodrigues de Souza and Seifert 2018), among others, feature in degrowth research on agri-food systems as a largely minoritarian sub-field of mostly theoretical nature.

Therefore, degrowth research on agri-food systems needs to complement its predominant focus on single, grassroots initiatives by devoting more attention to the formal and informal translocal networks of which local grassroots initiatives are often part. In this context, theories of social movement organisations and their geographies can help shed light on processes of diffusion of alternative practices, their embedding or emplacement in diverse geographical contexts, and the mechanisms of mutual support, empowerment and learning that occur across interconnected grassroots agri-food as well as other grassroots initiatives (Nicholls 2009; Loorbach et al. 2020). In particular, peasant and Indigenous movements, which remain largely unexplored, deserve explicit attention in light of repeated claims for a decolonial degrowth movement and science.

Although Hickel (2021b, p. 3) argues that degrowth is decolonial by definition, Dengler and Seebacher (2019) affirm that decoloniality has not yet become an integral part of degrowth reasoning. Engaging and dialoguing with peasant and Indigenous movements becomes necessary for truly ‘decolonising the social imaginary’ (see Latouche 2003) and can further enrich degrowth debates. For instance, Indigenous, non-dualist ontologies can broaden degrowth perspectives by shifting attention to communal and relational worlds (Escobar 2015). However, future studies should place decoloniality centre stage, since existing studies e.g. on degrowth and the food sovereignty movement (Roman-Alcalá 2017; Salzer and Fehlinger 2017) lack explicit discussions on (‘neo-’)colonial practices and structures.

Furthermore, it is paramount to understand agricultural grassroots initiatives as multifaceted agents of transformation; they can be political actors as well as sites of social innovation and experimentation. Individual initiatives, as well as their formal networks, often operate in the political arena in more diverse ways than through prefiguration. They also engage in conventional politics through lobbying, protests, and advocacy, among other ways, as well as unconventional politics such as direct action (e.g. Hitchman 2014; Stapleton 2019). This point highlights the narrow nature of traditional theorisations of grassroots initiatives as spaces of social innovation and experimentation (e.g. Seyfang and Smith 2007).

Finally, various conceptualisations of the politics of grassroots actors also raise the question about their relations with the state. Degrowth scholars have taken different positions concerning the roles that different social agents

at the local level ought, are able, or willing, to play in a degrowth transformation, ranging from anarchist perspectives that foreground autonomous spaces (Dunlap 2020) to frameworks that foreground the state as an agent of change (D'Alisa and Kallis 2020). However, more research is needed to identify, critique and theorise the (potential) roles that state and non-state, systemic and anti-systemic or anti-statist actors may have in promoting, inhibiting or sustaining a degrowth transformation of agri-food systems.

In sum, with a multitude of actors present in the agri-food system, such as grassroots initiatives, peasant and indigenous movements, translocal networks, the state, local authorities, and businesses the following questions remain unanswered: What role do these multiple agents of change play in a degrowth transformation of the agri-food system and how do their efforts intersect? Which agents are currently mostly upholding and reproducing a growth mentality? How can such a mentality be challenged? Where do their politics create synergies, for instance by simultaneously advancing similar claims in different social and political arenas? When can conflicts arise due to diverging agendas and priorities? Can degrowth provide a shared narrative for these multiple agents bridging their diverging political visions, positionalities and agendas? To address these questions, it is useful to draw on literature on agrarian change and peasant studies that has investigated the role of the various actors in food politics (for a review see Borrás 2009).

Bringing in the more-than-human

Thirdly, degrowth research on agri-food systems would benefit from engaging with the emerging materialist literature on the more-than-human and its role and agency in politics and societal transformations (e.g. Braun and Whatmore 2010; Contesse et al. 2021), which to date have been only marginally addressed in the degrowth scholarship (but see Gertenbach et al. 2021 on multispecies conviviality). A theoretical approach that attends to non-human agency in agri-food systems is pertinent in several ways. A particular attention to the more-than-human can broaden our perspective on how the capitalist agri-food system functions through geographically contingent human-non-human assemblages (such as the making of genetically modified food) and how these might constitute hindrances against a transformation away from the growth economy as well as resources of power to resist and break away from it (Barua 2016; Greenough 2017). How, then, can degrowth agri-food systems be created in a world that for centuries has implicated human and non-human actants into the web of the capitalist growth economy? How can this scholarship deal with super-productivist cattle and chicken breeds, GMO corn, polluted soil in urban brownfield sites and nutrient-poor arable land evolved

with years of monocultures in the countryside? Also, what openings does the liveliness of agri-food commodities provide for degrowth transformations? How can nature's resistance to complete commodification be organised and strengthened (Castree 2003; Robertson 2006) in the strategies for agri-food system transformation?

Furthermore, centring non-human agency and human-non-human relations can help illuminate the novel forms of internal governance and democratic practices of agri-food initiatives such as ecovillages, CSAs or food collectives that are almost daily confronted with decisions conditioned by their entanglements with more-than-human elements such as soil, water, livestock and pests. Examining such relations might provide promising starting points for investigating the role of non-humans in transformative change and developing a multispecies democratic praxis that rejects the political division between nature and society (Latour 1993) and rather builds on human-non-human companionship (at times conflictual), co-existence and collaboration (Hobson 2007; Haraway 2008, 2016).

Lastly, there is much to be gained from introducing insights from science and technology studies (see Whatmore 2006) and posthumanism to debates about the roles of different kinds of desired agricultural technologies and the place of GMOs in degrowth transformation (see Bartkowski 2017 for a plea; Gomiero 2018 for a critique of GMO). How might an emphasis on non-human agency, such as the protection of hedgerows against pests or the intelligence of seeds (Spanier 2021), enrich degrowth's vision of convivial agri-food technologies (Samerski 2018)? Also, how can degrowth farming practices that are in balance with 'nature' be envisioned without essentialising nature (Latour 1993)?

The political economy of degrowth agri-food systems: recentring capitalism

The transformation to a degrowth society cannot possibly materialise without conflict in a growth-dependent capitalist system (Foster 2011; D'Alisa et al. 2014). Agents in degrowth transformations of the agri-food system, in particular agricultural grassroots initiatives and movements, therefore, necessarily struggle to survive and thrive in a socio-economic context that prioritises market exchange, competitiveness, private property and accumulation of capital. Below, three ways how capitalism matters for the political economy of degrowth agri-food systems are explored.

Mitigating the risk of capitalist co-optation

Being situated within a capitalist agri-food system exposes grassroots actors to significant risk of being co-opted by corporate interests or government authorities that may appropriate and conventionalise a watered-down version

of claims, practices and technical or institutional innovations. While many degrowth scholars have acknowledged the ever-present risk of capitalist co-optation in relation to degrowth (e.g. D’Alisa et al. 2014; Escobar 2015), this has remained rather cursory. In contrast, capitalist co-optation has been addressed in agri-food studies, which have a long-standing tradition in investigating the conventionalisation of, for instance, the organic agriculture (e.g. Guthman 2004; Darnhofer et al. 2009) or the fair-trade movement (Jaffee and Howard 2010). Degrowth research on agri-food systems has recently started to problematise the conventionalisation of organic agriculture, which depoliticises a socioecological movement through the reduction of organic agriculture to a set of technical standards (González de Molina 2015; Gomi-ero 2018). However, rather than replicating already existing studies and arguments, degrowth research on agri-food systems may forge of new questions: in line with proposals to form strategic alliances against capitalist co-optation (Holt-Giménez and Altieri 2013), in what ways could an alliance between agri-food movements and degrowth mitigate the risk of capitalist co-optation? What understandings of degrowth underlying particular agricultural grassroots initiatives or movements are most capable of resisting capitalist co-optation? It is crucial to reflect on the risks of capitalist co-optation that derive from reducing degrowth to a narrow and easily manipulated set of principles dissociated from the critical intellectual origins of the movement (Gertenbach et al. 2021). In contrast, as food sovereignty activists Salzer and Fehlinger (2017) have proposed, espousing an explicit stance for an anti-capitalist reading of degrowth may be very fruitful while also minimising the above-mentioned risk of capitalist co-optation.

Struggling within and against capitalism

In relation to the above, in-depth investigations of how specific capitalist institutions and practices that govern agri-food systems hamper the degrowth transformation are needed. Although cogent analyses and critiques of capitalist institutions and practices in the agri-food system and their environmental and social unsustainability abound (see Bernstein 2016 for a review), drives of growthism in capitalist agri-food systems and their impact on the everyday life of peasants and farmers deserve more scrutiny. Particularly insightful to better understand growthism in capitalist agri-food systems and how these systems came into being are *historical* analyses of capital accumulation in agriculture and food which have been advanced by food regime scholars (see e.g. Friedmann and McMichael 1989). Food regime scholarship traces global power and property arrangements over time and sheds light on “(unequal) relations among states, capitalist enterprises, and people” (Friedmann 2005, p. 228). It has informed and

contributed with analysis, critique and documentation to a better understanding of the dynamics of global agriculture, and its long tradition makes it a necessary starting point for studying agrarian change (Bernstein 2016). Scholars typically distinguish at least three food regimes (see Friedmann 1987 for the original formulation; Bernstein 2016 for a synthesis and critique of subsequent work). Analyses of the current ‘corporate’ food regime (McMichael 2006) highlight, amongst others, the dynamics through which farmers are subordinated to the logics of the corporate model. For instance, McMichael (2013, p. 671) explored how the integration of farmers in corporate markets and value-chains traps them in debt relations that result from the use of farming inputs such as ‘seed, fertilisers and other agrichemicals’. According to Gerber (2014, p. 741) ‘economic growth [...] results – perhaps above all – from the obligation to take out loans and form the subsequent constant threat of defaulting in a competitive context’. Consequently, degrowth research on agri-food systems should investigate the role of indebtedness of peasants (but also of corporate farmers): How can farmers resist or break ‘the chain’ of debt that ties them to capitalist agriculture and forces them into the growth spiral?

Moreover, there remains scope to investigate how the mechanisms and workings of capitalist institutions impede the success of degrowth agri-food initiatives, how they may be contested and resisted by agricultural grassroots initiatives, and what alternatives can be sought. The example of access to land helps illustrate potential avenues for degrowth research on the political economy of agri-food systems. To afford high land prices, farmers often find themselves forced to embrace the growth paradigm, seeking efficiency gains from economies of scale. In the context of Europe, land prices are driven up by, amongst other things, investments in and speculations with land, low interest rates, area-based payments, and prevailing competitions for land use such as renewable energy and housing (IPES Food 2019). Land concentration is increasing, with larger-scale farmers with financial means and recipients of area-based payments being more likely to be able to afford land for sale or rent (ibid.). Moreover, land grabbing is no longer only a pressing issue in the Global South, but is increasingly a global phenomenon, and is gaining relevance in Europe (Borras et al. 2012; Edelman et al. 2013; Van Der Ploeg et al. 2015). In other words, farmers often face *structural* constraints imposed by the land ownership regime, pushing them to cultivate in a productivist manner that is at odds with degrowth (see also Gerber 2020).

Due to these structural constraints that render access to land difficult and expensive, agricultural grassroots initiatives that strive to prefigure degrowth societies while remaining situated within capitalism often struggle to

survive. Commoning and decommodification are often proposed by degrowth scholars as means to move beyond capitalism by aiding peasants and agricultural grassroots initiatives to address and overcome unequal access to land (e.g. Gerber and Gerber 2017; Kallis et al. 2020). But where might commoning fail to work due to the normalisation of private property ownership in the capitalist society? In a society predicated on private property ownership, what elements need to be unmade as part of a degrowth transformation to ensure the decommodification of land and prioritise the use value of land over its exchange value? How can the degrowth movement pursue large-scale land decommodification while avoiding a situation wherein people with access to decommodified land may more easily ‘accept large-scale commodification in other spheres of their life’ (Gerber and Gerber 2017, p. 555)?

Moving beyond agri-food systems

Although capitalist logics infiltrate societies as a whole and are by no means restricted to the political economy of food, the potential that a systemic degrowth transformation holds for agri-food systems has remained largely unexplored. Much can be learned from linking broader societal changes towards degrowth to food practices that are incompatible with capitalism. In other words, how could a societal transformation towards degrowth and a concomitant societal value shift make space for and support alternative agri-food practices? For instance, feminist currents of degrowth scholars have emphasised the need to recentre and rethink care for oneself, other people and the environment—which are systematically devalued in capitalist societies—as vital elements of degrowth transformations (e.g. Dengler and Strunk 2018). Care practices such as cultivating land, harvesting, cooking and preserving are often regarded as integral elements of degrowth agri-food systems (e.g. Brückner 2021; Pungas 2021). To what extent could a structural recentring and revalorisation of social–ecological care and reproductive work change dominant ways of food consumption and production? How could (non)human relations and gender roles associated with specific food practices be redefined? What types of food production and consumption practices would become obsolete?

The materialisation of societal transformations of the depth and scope envisioned in degrowth are hardly limited to the boundaries of a single economic sector. The agri-food system is tightly interlinked with numerous other sectors, which emphasises the need for cross-sector approaches to degrowth research on agri-food systems (Scheidel et al. 2022). As Brückner (2021, p. 46) pointed out, ‘everyday activities of mobility, work, childcare and work affect food practices’. Solely focusing on the agricultural sector may

obscure ways to leverage a degrowth transformation by creating synergies and exploring interdependencies with other sectors. However, interconnected political–economic strategies, priorities and interests are largely absent from the extant degrowth research on agri-food systems. What leverage points and opportunities can a degrowth transformation of other sectors, such as housing, energy or mobility, offer that might positively impact the agri-food system? How can changes in infrastructure and mobility enable food distribution in a manner compatible with degrowth (Pohl et al. 2014)? To what extent can common spaces for food production enhance convivial forms of living and thereby become an integral part of degrowth housing and planning? Also, how does the growth imperative undergirding most industrial sectors inhibit degrowth agri-food systems? How can land use competition with solar and wind power be avoided if the energy sector is prone to continue to grow, even if in a supposedly ‘green’ manner (Kallis et al. 2018)? How could affordable housing, particularly in urban areas and metropolises, contribute to a higher prioritisation of ethically and sustainably produced food, a seemingly impossible endeavour when tenants spend half of their salaries on housing? What would cities look like if growing food is re-integrated into households (Daněk and Jehlička 2021)? Altogether, to what extent can a degrowth transformation only be sought in one sector?

Degrowth in place: research avenues on rurality and degrowth

Up to 85% of food worldwide is produced in rural areas (Ikerd 2018). For centuries, rural life has been defined both materially and culturally by agricultural production. However, with the rapidly expanding industrialisation of agriculture, food production has—particularly in the Global North—stopped to be the defining factor of rural dwellers’ lives (for a literary treatment of the vanishing of peasant life in Europe, see Berger 1988 or Mak 2007). This has not diminished the importance of the countryside for the present and future of food provision, nor has it reduced the impact of the ongoing transformation of the global agri-food system on the world’s diverse rural areas [such as extractivism in Latin America (Infante-Amate et al. 2022), Africa and parts of Asia (Fairhead et al. 2012)]. Similarly, in many rural regions of the world, and particularly in the Global South, the defence of traditional peasant agriculture, of the rights of the peasantry, their lands, resources and food sovereignty, remains ongoing (Rivera-Ferre et al. 2014). These struggles have been an important inspiration for the degrowth movement as a whole (Demaria et al. 2019).

Degrowth research on agri-food systems has begun to establish connections to ongoing peasant and food sovereignty struggles (e.g. Roman-Alcalá 2017; Salzer and

Fehlinger 2017) as well as the practices and knowledges of past rural life (e.g. Jones and Ulman 2021). Scholarship has also analysed some cases occurring in the countryside (or implicating it importantly) as (prefigurative) experiments of degrowth food futures (e.g. Boillat et al. 2012; Bogadóttir and Olsen 2017; Strenchock 2021). Some researchers have carried out meso- and macro-scale projections of degrowth agri-food systems and have thus implicitly contributed to an understanding of what degrowth transformations might mean for the countryside (and spatial planning more broadly) (Infante Amate and González De Molina 2013; Clausing 2014; González de Molina 2015), with rare exceptions explicitly engaging in these reflections on rural futures (Gomiero 2018; Leahy 2021). Gomiero (2018) argues that there is a tendency among degrowth scholars to promote a ruralisation of society—which, in his view, and based on a hypothetical example of the ruralisation of Germany, would have catastrophic environmental and socio-economic effects. In contrast, building on a degrowth scenario for the city of Melbourne, Leahy (2021) concludes that feeding Melbourne without energy-intensive transport from within the city-region would likely be untenable. He aligns himself with permaculture visions for ‘self-sufficient rural communities’ and ‘decentralisation with compact rural towns’ as viable options for energy scarce futures (ibid., p. 210), although—likely informed by the frequent critique of degrowth thought being unjustifiably romantic about past rural life (Salzer and Fehlinger 2017)—he makes sure to explicitly oppose the revival of a feudal rurality. Similarly, already the early work of Schumacher (1973) pointed out the necessity of reconstructing rural culture and employing a larger number of people in rural areas.

However, quite contrary to this supposed enthusiasm for the rural(-isation), most of the cases referred to in degrowth scholarship on agri-food are set in urban (e.g. Öz and Aksoy 2019 on a food co-operative in Istanbul; Edwards et al. 2021 on the edible cities lab in Portugal; Szakál and Balázs 2021 on the Budapest Food City Lab; McGreevy et al. 2022 on the potential of home and urban gardening across the globe) or peri-urban areas (see Pungas 2021 on peri-urban garden plots in Estonia). This discrepancy between the importance of the countryside in degrowth visions and its practical embeddedness in urban movements might help clarify why degrowth scholars have only rarely engaged in-depth with current realities in the countryside.¹ Important questions remain unanswered: In which ways could degrowth

contribute to the revival of the social and cultural capital of depopulated rural areas? How might degrowth help to effectively fight rural marginalisation and decline, such as that produced by urbanisation and the de-industrialisation of many of Europe’s former industrial regions (for an exception, although not focusing on agri-food, see Dax and Fischer 2018)? In the following subsections, we propose two avenues for exploring degrowth and rurality.

Implicating rural populations in degrowth

Degrowth scholars have been silent about the ways in which degrowth could ‘speak to’, i.e. learn from and listen to diverse rural populations. In the case of Europe, from where this agenda is written, doing so might bring a variety of challenges to the narrative of degrowth. To name just a few questions: How can degrowth speak to large-scale farmers who have been formed and shaped by the capitalist economy’s ruthless paradigm of continuous growth, technologisation and cost reduction (see Salzer and Fehlinger 2017)—such as those who cultivate and/or own the majority of Europe’s arable land? What does degrowth’s emphasis on *structural* growthism have to offer to mediate between environmentalists and large-scale farmers, the latter of whom are often held personally responsible for the environmental crisis? How can degrowth speak to those who have not been socialised in diverse, progressive, intellectual and activist urban environments, but rather have been socialised in rather conservative rural and small-town environments (see Daněk and Jehlička 2021 on “quiet” sustainability)—the very same environments in which decentralised and variably ruralised degrowth livelihoods might take place in the future? How can degrowth speak to the middle-class living comfortable suburban lives (see Leahy 2021 on degrowth in the suburbs)? Lastly, at a time when right-wing populism is on the rise in rural Europe (Mamonova and Franquesa 2020), how can degrowth ensure that it is not co-opted by far-right movements (Eversberg 2018), which have already used the romantic appeal of the countryside to co-opt some environmentalist currents (Staud 2015; Lubarda 2020)?

Reconnecting urban and rural livelihoods in degrowth agri-food systems

Finally, although re-territorialisation and re-localisation have been central principles advanced by degrowth scholars writing on the agri-food system (e.g. Infante Amate and González De Molina 2013), their effect on a re-connection of rural and urban livelihoods has, when considered at all, too often been taken for granted (Spanier and Feola 2022). How would a degrowth agri-food system envision the relationship between city and countryside? What economic, social, and cultural relationships should be established between people

¹ Our critique presented in this section refers to the prioritisation of the urban in degrowth research on agri-food systems. We do not intend to diminish the importance of the urban context for food production nor past research that has explored this question in detail. We are aware that, in the light of rapid urbanisation processes, urban food production will be crucial for the food self-sufficiency of cities.

living in urban and rural areas to foster more just, collaborative, de-commodified and non-exploitative relations? Are the unequal power relations between city and countryside established in the capitalist urban society reproduced or unmade by localising food within a region? Do all local and regional food initiatives (culturally) re-connect urban and rural lives? Do they automatically include rural communities and the diversity of rural food producers in decision-making? And what of the abundance of long-distance rural–urban connections in the global agri-food system that are not transformed by establishing local food networks between a town and its surrounding peri-urban and rural regions? Voget's (2009) proposal of avoiding the 'defensive stance of localism' (p. 431) through the more open concept of short food supply chains, which reduce the number of intermediaries between producers and consumers as much as possible, presents an excellent starting point.

Conclusion: beyond a sectoral approach to degrowth research on agri-food systems

The aim of this paper was to forge a research agenda for the critical social sciences that contributes to establishing degrowth research on agri-food systems as a field of study while also identifying remaining gaps, suggesting ways forward to address them, and stirring new discussions by challenging some currently held assumptions in this emerging research field. In doing so, this agenda has built on the emerging degrowth scholarship on agri-food systems. It proposed avenues for future research and concrete research questions that can substantially deepen, expand and diversify future degrowth research on agri-food systems and fruitfully connect it with ongoing debates on agri-food systems sustainability and degrowth transformations.

Our research agenda proposed four key themes for future degrowth research on agri-food systems: exploring (i) degrowth conceptualisations; (ii) theorisation of transformations towards sustainability; (iii) the political economy of degrowth agri-food systems; and (iv) rurality and degrowth. Together, these avenues give due attention to a variety of agents (ranging from translocal networks to non-humans), spaces (e.g. the rural), theories (e.g. sustainability transitions and transformations towards sustainability) and policies (of the agricultural sector and beyond) that thus far have received limited attention within this body of literature. Importantly, this research agenda calls for a more reflexive approach to degrowth conceptualisations, which crucially shape the analytical lenses through which degrowth research on agri-food systems is scoped and designed. In line with degrowth thinking that is critical of capitalism, techno-centrism and productivism, this

research agenda proposes to problematise how the inner workings of capitalism structurally hamper degrowth transformations and expose agri-food initiatives prefiguring degrowth societies to the ever-present risk of capitalist co-optation. However, capitalism structures societies well beyond the realm of agri-food systems, thus challenging us to ask questions on how the transformation of other economic sectors and capitalist institutions more broadly could contribute to degrowth agri-food systems. The critical reader may have further ideas and visions for degrowth research on agri-food systems beyond the areas that are proposed in this paper. Further debates in this field, both within and beyond the academy, are needed.

This paper is directed at scholars who situate themselves at the intersection of degrowth and agri-food system research. We suggest that these scholars may find the critical social science approach presented in this research agenda valuable, as it points to new, at times uncomfortable but necessary, questions for advancing socially just and environmentally sound degrowth agri-food systems. Moreover, a critical social science perspective foregrounds that the present unsustainability and injustice of hegemonic agri-food systems are not merely a problem of the agri-food sector alone, but rather are ingrained in social imaginaries of how economies and societies should work as well as the political–economic structures that uphold and reproduce these imaginaries. As such, it has the potential to help rethink transformation of the agri-food system in the context of and in connection with other economic sectors and broader societal structures.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11625-022-01276-y>.

Acknowledgements The authors offer many thanks to Florian Koch and Galina Kallio and two anonymous reviewers for valuable comments on earlier versions of this manuscript.

Author contributions LGL coordinated this research. LGL and GF contributed to all stages of the research, i.e. conceptualisation, analysis of the literature, identification of future research directions, writing and editing. The remaining co-authors, whose order of mention was randomised, contributed equally to the analysis of the literature, identification of research directions and writing.

Funding This work was supported by the European Research Council (Grant 802441) and by the Dutch Research Council (NWO) (Grant 016.Vidi.185.073).

Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source,

provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Abson DJ, Fischer J, Leventon J et al (2017) Leverage points for sustainability transformation. *Ambio* 46:30–39. <https://doi.org/10.1007/s13280-016-0800-y>
- Amenta E, Polletta F (2019) The cultural impacts of social movements. *Annu Rev Sociol* 45:279–299. <https://doi.org/10.1146/annurev-soc-073018-022342>
- Amenta E, Caren N, Chiarello E, Su Y (2010) The political consequences of social movements. *Annu Rev Sociol* 36:287–307. <https://doi.org/10.1146/annurev-soc-070308-120029>
- Asara V, Otero I, Demaria F, Corbera E (2015) Socially sustainable degrowth as a social–ecological transformation: repoliticizing sustainability. *Sustain Sci* 10:375–384. <https://doi.org/10.1007/s11625-015-0321-9>
- Bartkowski B (2017) Degrowth, organic agriculture and GMOs: a reply to Gomiero (2017, JCLEPRO). *J Clean Prod* 168:904–907. <https://doi.org/10.1016/j.jclepro.2017.09.079>
- Barua M (2016) Lively commodities and encounter value. *Environ Plan D Soc Space* 34:725–744. <https://doi.org/10.1177/0263775815626420>
- Berger J (1988) *Pig earth. Into their labours 1*. The Hogarth Press, London
- Bernstein H (2016) Agrarian political economy and modern world capitalism: the contributions of food regime analysis. *J Peasant Stud* 43:611–647. <https://doi.org/10.1080/03066150.2015.1101456>
- Bloemmen M, Bobulescu R, Le NT, Vitari C (2015) Microeconomic degrowth: the case of Community Supported Agriculture. *Ecol Econ* 112:110–115. <https://doi.org/10.1016/j.ecolecon.2015.02.013>
- Blythe J, Silver J, Evans L et al (2018) The dark side of transformation: latent risks in contemporary sustainability discourse. *Antipode* 50:1206–1223. <https://doi.org/10.1111/anti.12405>
- Bogadóttir R (2019) Blue growth and its discontents in the Faroe Islands: an island perspective on Blue (De)Growth, sustainability, and environmental justice. *Sustain Sci* 15:103–115. <https://doi.org/10.1007/s11625-019-00763-z>
- Bogadóttir R (2020) The social metabolism of quiet sustainability in the Faroe Islands. *Sustainability*. <https://doi.org/10.3390/su120735>
- Bogadóttir R, Olsen ES (2017) Making degrowth locally meaningful: the case of the Faroese grindadráp. *J Polit Ecol* 24:504–518. <https://doi.org/10.2458/v24i1.20888>
- Boillat S, Gerber J-F, Funes-Monzote FR (2012) What economic democracy for degrowth? Some comments on the contribution of socialist models and Cuban agroecology. *Futures* 44:600–607. <https://doi.org/10.1016/j.futures.2012.03.021>
- Boonstra WJ, Joosse S (2013) The social dynamics of degrowth. *Environ Values* 22:171–189. <https://doi.org/10.3197/096327113X13581561725158>
- Borowy I (2013) Degrowth and public health in Cuba: lessons from the past? *J Clean Prod* 38:17–26. <https://doi.org/10.1016/j.jclepro.2011.11.057>
- Borras SM (2009) Agrarian change and peasant studies: changes, continuities and challenges—an introduction. *J Peasant Stud* 36:5–31. <https://doi.org/10.1080/03066150902820297>
- Borras SM, Franco JC, Gómez S et al (2012) Land grabbing in Latin America and the Caribbean. *J Peasant Stud* 39:845–872. <https://doi.org/10.1080/03066150.2012.679931>
- Braun B, Whatmore SJ (2010) *Political matter: technoscience, democracy, and public life*. University of Minnesota Press, Minneapolis
- Brückner M (2021) Learning degrowth from women's food knowledge and care in Kenya. In: Nelson A, Edwards F (eds) *Food for degrowth*. Routledge, New York, pp 45–58
- Carolan M (2022) It's about time: temporal and spatial fixes find vertical farms and local food in the shadow of COVID-19. *J Peasant Stud* 49:1446–1465. <https://doi.org/10.1080/03066150.2022.2082287>
- Castree N (2003) Commodifying what nature? *Prog Hum Geogr* 27:273–297. <https://doi.org/10.1191/0309132503ph428oa>
- Cederlöf G (2016) Low-carbon food supply: the ecological geography of Cuban urban agriculture and agroecological theory. *Agric Hum Values* 33:771–784. <https://doi.org/10.1007/s10460-015-9659-y>
- Clausing P (2014) Thoughts on agricultural transformation. In: *Degrowth conference Leipzig 2014*
- Contesse M, Duncan J, Legun K, Klerkx L (2021) Unravelling non-human agency in sustainability transitions. *Technol Forecast Soc Change* 166:120634. <https://doi.org/10.1016/j.techfore.2021.120634>
- Cristiano S, Auriemma M, Cacciari P et al (2021) Nourishing self-planned socioecological transformations: glocal community supported agriculture in Veneto, Italy. In: Nelson A, Edwards F (eds) *Food for degrowth*. Routledge, New York, pp 90–99
- D'Alisa G, Kallis G (2020) Degrowth and the State. *Ecol Econ* 169:106486. <https://doi.org/10.1016/j.ecolecon.2019.106486>
- D'Alisa G, Demaria F, Kallis G (2014) *Degrowth—a vocabulary for a new era*. Routledge, Abingdon
- Daněk P, Jehlička P (2021) Quietly degrowing. Food self-provisioning in Central Europe. In: Nelson A, Edwards F (eds) *Food for Degrowth*. Routledge, New York, pp 33–44
- Darnhofer I, Lindenthal T, Bartel-Kratochvil R, Zollitsch W (2009) Conventionalisation of organic farming practices: from structural criteria towards an assessment based on organic principles. *Sustain Agric* 2:331–349. https://doi.org/10.1007/978-94-007-0394-0_18
- Dax T, Fischer M (2018) An alternative policy approach to rural development in regions facing population decline. *Eur Plan Stud* 26:297–315. <https://doi.org/10.1080/09654313.2017.1361596>
- De Schutter O (2020) Degrowing the food sector: how to build democratic food policies [presentation]. *Degrowth Conference Vienna 2020*
- Demaria F, Schneider F, Sekulova F, Martinez-Alier J (2013) What is degrowth? From an activist slogan to a social movement. *Environ Values* 22:191–215. <https://doi.org/10.3197/096327113X13581561725194>
- Demaria F, Kallis G, Bakker K (2019) Geographies of degrowth: nowtopias, resurgences and the decolonization of imaginaries and places. *Environ Plan E Nat Space* 2:431–450. <https://doi.org/10.1177/2514848619869689>
- Dengler C, Seebacher LM (2019) What about the global south? Towards a feminist decolonial degrowth approach. *Ecol Econ* 157:246–252. <https://doi.org/10.1016/j.ecolecon.2018.11.019>
- Dengler C, Strunk B (2018) The monetized economy versus care and the environment: degrowth perspectives on reconciling an antagonism. *Fem Econ* 24:160–183. <https://doi.org/10.1080/13545701.2017.1383620>

- Diani M, McAdam D (eds) (2003) Social movements and networks. Relational approaches to collective action. Oxford University Press, Oxford
- Dunlap A (2020, December 2) Recognizing the “de” in degrowth. In: Undisciplined environ (blog). <https://undisciplinedenvironments.org/2020/12/02/recognizing-the-de-in-degrowth/>
- Edelman M, Oya C, Borrás SM (2013) Global Land Grabs: historical processes, theoretical and methodological implications and current trajectories. *Third World Q* 34:1517–1531. <https://doi.org/10.1080/01436597.2013.850190>
- Edwards F, Espelt R (2021) Technology for degrowth: implementing digital platforms for community supported agriculture. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, New York, pp 128–140
- Edwards F, Nelson A (2021) Future research directions: food for degrowth. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, New York, pp 213–226
- Edwards F, Pedro S, Rocha S (2021) Institutionalising degrowth: exploring multilevel food governance. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, New York, pp 141–155
- El Bilali H (2019) The multi-level perspective in research on sustainability transitions in agriculture and food systems: a systematic review. *Agriculture*. <https://doi.org/10.3390/agriculture9040074>
- Ertör-Akyazi P (2020) Contesting growth in marine capture fisheries: the case of small-scale fishing cooperatives in Istanbul. *Sustain Sci* 15:45–62. <https://doi.org/10.1007/s11625-019-00748-y>
- Ertör I, Hadjimichael M (2020) Editorial: Blue degrowth and the politics of the sea: rethinking the blue economy. *Sustain Sci* 15:1–10. <https://doi.org/10.1007/s11625-019-00772-y>
- Escobar A (2015) Degrowth, postdevelopment, and transitions: a preliminary conversation. *Sustain Sci* 10:451–462. <https://doi.org/10.1007/s11625-015-0297-5>
- Eversberg D (2018) Gefährliches Werben. Über die Anschlussfähigkeit der Postwachstumsdebatte gegenüber dem autoritären Nationalismus – und was sich dagegen tun lässt. *Forschungsjournal Soz Bewegungen* 4:52–61
- Fairhead J, Leach M, Scoones I (2012) Green grabbing: a new appropriation of nature? *J Peasant Stud* 39:237–261. <https://doi.org/10.1080/03066150.2012.671770>
- FAO (2021) The State of Food and Agriculture 2021. Making agri-food systems more resilient to shocks and stresses. Rome, FAO. <https://doi.org/10.4060/cb4476en>
- Feola G (2015) Societal transformation in response to global environmental change: a review of emerging concepts. *Ambio* 44:376–390. <https://doi.org/10.1007/s13280-014-0582-z>
- Feola G (2019) Degrowth and the unmaking of capitalism beyond ‘decolonization of the imaginary’? *ACME Int J Crit Geogr* 18:977–997
- Feola G (2020) Capitalism in sustainability transitions research: time for a critical turn? *Environ Innov Soc Transit*. <https://doi.org/10.1016/j.eist.2019.02.005>
- Feola G, Koretskaya O, Moore D (2021) (Un)making in sustainability transformation beyond capitalism. *Glob Environ Chang* 69:102290. <https://doi.org/10.1016/j.gloenvcha.2021.102290>
- Fletcher R, Murray Mas I, Blanco-Romero A, Blázquez-Salom M (2019) Tourism and degrowth: an emerging agenda for research and praxis. *J Sustain Tour* 27:1745–1763. <https://doi.org/10.1080/09669582.2019.1679822>
- Foster JB (2011) Capitalism and degrowth: an impossibility theorem. *Mon Rev*. https://doi.org/10.14452/MR-062-08-2011-01_2
- Friedmann H (1987) International regimes of food and agriculture since 1870. In: Shanin T (ed) Peasants and peasant societies. Basil Blackwell, Oxford, pp 258–276
- Friedmann H (2005) From colonialism to green capitalism: social movements and emergence of food regimes. *Res Rural Sociol* 11:227–264. [https://doi.org/10.1016/S1057-1922\(05\)11009-9](https://doi.org/10.1016/S1057-1922(05)11009-9)
- Friedmann H, McMichael P (1989) Agriculture and the state system: the rise and decline of national agricultures, 1870 to the present. *Sociol Rural* XXIX, pp 93–117
- Georgescu-Roegen N (1971) The entropy law and the economic process. Harvard University Press, Cambridge
- Gerber J-F (2014) The role of rural indebtedness in the evolution of capitalism. *J Peasant Stud* 41:729–747. <https://doi.org/10.1080/03066150.2014.921618>
- Gerber J-F (2020) Degrowth and critical agrarian studies. *J Peasant Stud* 47:235–264. <https://doi.org/10.1080/03066150.2019.1695601>
- Gerber J-D, Gerber J-F (2017) Decommodification as a foundation for ecological economics. *Ecol Econ* 131:551–556. <https://doi.org/10.1016/j.ecolecon.2016.08.030>
- Gertenbach L, Lamla J, Laser S (2021) Eating ourselves out of industrial excess? Degrowth, multi-species conviviality and the micro-politics of cultured meat. *Anthropol Theory* 21:386–408. <https://doi.org/10.1177/1463499620981544>
- Gomiero T (2018) Agriculture and degrowth: state of the art and assessment of organic and biotech-based agriculture from a degrowth perspective. *J Clean Prod* 197:1823–1839. <https://doi.org/10.1016/j.jclepro.2017.03.237>
- González de Molina M (2015) Agroecology and politics: on the importance of public policies in Europe. In: Monteduro M, Buongiorno P, Di Benedetto S, Isoni A (eds) Law and agroecology: a transdisciplinary dialogue. Springer, Berlin
- Greenhough B (2017) Actor-network theory. In: Richardson D, Castree N, Goodchild M (eds) International encyclopedia of geography: people, the earth, environment and technology. John Wiley & Sons, Chichester, UK
- Guthman J (2004) The trouble with “organic lite” in California: a rejoinder to the “conventionalisation” debate. *Sociol Rural* 44:301–316. <https://doi.org/10.1111/j.1467-9523.2004.00277.x>
- Hansen UE, Nygaard I, Romijn H et al (2018) Sustainability transitions in developing countries: stocktaking, new contributions and a research agenda. *Environ Sci Policy* 84:198–203. <https://doi.org/10.1016/j.envsci.2017.11.009>
- Haraway D (2008) When species meet. Minnesota University Press, Minneapolis
- Haraway D (2016) Staying with the trouble. Making kin in the Chthulucene. Duke University Press, Durham
- Hermans F, Roep D, Klerkx L (2016) Scale dynamics of grassroots innovations through parallel pathways of transformative change. *Ecol Econ* 130:285–295. <https://doi.org/10.1016/j.ecolecon.2016.07.011>
- Hickel J (2021a) Less is more: how degrowth will save the world. Penguin Random House, London
- Hickel J (2021b) The anti-colonial politics of degrowth. *Polit Geogr* 88:102404. <https://doi.org/10.1016/j.polgeo.2021.102404>
- Hitchman J (2014) Advocacy, social movements, short distribution chains and policy: an illustrated analytical approach, Urgenci, Aubagne, Working Paper
- Hobson K (2007) Political animals? On animals as subjects in an enlarged political geography. *Polit Geogr* 26:250–267. <https://doi.org/10.1016/j.polgeo.2006.10.010>
- Holt-Giménez E, Altieri MA (2013) Agroecology, food sovereignty, and the new green revolution. *Agroecol Sustain Food Syst* 37:90–102. <https://doi.org/10.1080/10440046.2012.716388>
- Homs P, Flores-Pons G, Mayor Adrià M (2021) Sustaining caring livelihoods: agroecological cooperativism in Catalonia. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, London, pp 100–112
- Ikerd J (2018) The role of urban horticulture in the sustainable agri-food movement. In: Nandwani D (ed) Urban horticulture:

- sustainability for the future. Springer, Cham, Switzerland, pp 233–246
- Infante Amate J, González De Molina M (2013) “Sustainable degrowth” in agriculture and food: an agro-ecological perspective on Spain’s agri-food system (year 2000). *J Clean Prod* 38:27–35. <https://doi.org/10.1016/j.jclepro.2011.03.018>
- Infante-Amate J, Urrego-Mesa A, Piñero P, Tello E (2022) The open veins of Latin America: long-term physical trade flows (1900–2016). *Glob Environ Change*. <https://doi.org/10.1016/j.gloenvcha.2022.102579>
- IPES Food (2019) Towards a common food policy for the European Union. The Policy Reform and Realignment that is Required to Build Sustainable Food Systems in Europe, International Panel of Experts on Sustainable Food Systems, Brussels, pp 1–110. http://www.ipes-food.org/_img/upload/files/CFP_FullReport.pdf
- Jackson T (2009) Prosperity without growth. Foundations for the economy of tomorrow. Routledge, London
- Jaffee D, Howard PH (2010) Corporate cooptation of organic and fair trade standards. *Agric Hum Values* 27:387–399. <https://doi.org/10.1007/s10460-009-9231-8>
- Jones P, Ulman M (2021) Replacing growth with belonging economies: a neopeasant response. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, London, pp 19–32
- Kallis G (2011) In defence of degrowth. *Ecol Econ* 70:873–880. <https://doi.org/10.1016/j.ecolecon.2010.12.007>
- Kallis G (2015, September 1) Can we prosper without growth? 10 policy proposals. *Green Eur J* (blog). <https://www.greeneuropeanjournal.eu/can-we-prosper-without-growth-10-policy-proposals/>
- Kallis G, Kostakis V, Lange S et al (2018) Research on degrowth. *Annu Rev Environ Resour* 43:291–316. <https://doi.org/10.1146/annurev-environ-102017-025941>
- Kallis G, Paulson S, D’Alisa G, Demaria F (2020) The case for degrowth. Polity Press, Cambridge
- Koretskaya O, Feola G (2020) A framework for recognizing diversity beyond capitalism in agri-food systems. *J Rural Stud* 80:302–313. <https://doi.org/10.1016/j.jrurstud.2020.10.002>
- Lamine C (2011) Transition pathways towards a robust ecologization of agriculture and the need for system redesign. Cases from organic farming and IPM. *J Rural Stud* 27:209–219. <https://doi.org/10.1016/j.jrurstud.2011.02.001>
- Latouche S (2003) Décoloniser l’imaginaire. La pensée créative contre l’économie de l’absurde. Parangon, Lyon
- Latour B (1993) We have never been modern. Harvard University Press, Cambridge, Massachusetts
- Leahy T (2021) A degrowth scenario: can permaculture feed Melbourne? In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, London, pp 198–212
- Loorbach D, Frantzeskaki N, Avelino F (2017) Sustainability transitions research: transforming science and practice for societal change. *Annu Rev Environ Resour* 42:599–626. <https://doi.org/10.1146/annurev-environ-102014-021340>
- Loorbach D, Wittmayer J, Avelino F et al (2020) Transformative innovation and translocal diffusion. *Environ Innov Soc Transit* 35:251–260. <https://doi.org/10.1016/j.eist.2020.01.009>
- Lubarda B (2020) Beyond ecofascism? Far-right ecologism (FRE) as a framework for future inquiries. *Environ Values*. <https://doi.org/10.3197/096327120x15752810323922>
- Mak G (2007) Wie Gott verschwand aus Jorwerd. Der Untergang eines Dorfes in Europa. btb Verlag, Munich, pp 1–320
- Mamonova N, Franquesa J (2020) Right-wing populism in rural Europe. Introduction to the special issue. *Sociol Rural* 60:702–709. <https://doi.org/10.1111/soru.12306>
- Manteuffel A (2014) Urban agriculture and urban transformation. In: Degrowth conference Leipzig 2014, pp 1–5
- Mastini R, Kallis G, Hickel J (2021) A green new deal without growth? *Ecol Econ* 179:106832. <https://doi.org/10.1016/j.ecolecon.2020.106832>
- McGreevy SR, Rupperecht CDD, Niles D et al (2022) Sustainable agrifood systems for a post-growth world. *Nat Sustain*. <https://doi.org/10.1038/s41893-022-00933-5>
- McMichael P (2006) Global development and the corporate food regime. *Res Rural Sociol Dev* 11:265–299. [https://doi.org/10.1016/S1057-1922\(05\)11010-5](https://doi.org/10.1016/S1057-1922(05)11010-5)
- McMichael P (2013) Value-chain agriculture and debt relations: contradictory outcomes. *Third World Q* 34:671–690
- Menton M, Larrea C, Latorre S et al (2020) Environmental justice and the SDGs: from synergies to gaps and contradictions. *Sustain Sci* 15:1621–1636. <https://doi.org/10.1007/s11625-020-00789-8>
- Muraca B (2013) Décroissance: a project for a radical transformation of society. *Environ Values* 22:147–169. <https://doi.org/10.3197/096327113X13581561725112>
- Muraca B, Döring R (2018) From (strong) Sustainability to Degrowth. A philosophical and historical reconstruction. In: Caradonna J (ed) *Routledge Handbook of the History of Sustainability*. Routledge, Oxon/New York, pp 339–362
- Nelson A, Edwards F (eds) (2021) Food for degrowth. Routledge, New York
- Nelson A, Schneider F (eds) (2019) Housing for degrowth. Principles, models, challenges and opportunities, 1st edn. Routledge, New York
- Newell P (2020) Towards a global political economy of transitions: a comment on the transitions research agenda. *Environ Innov Soc Transit* 34:344–345. <https://doi.org/10.1016/j.eist.2019.10.007>
- Nicholls W (2009) Place, networks, space: theorising the geographies of social movements. *Trans Inst Br Geogr* 34:78–93. <https://doi.org/10.1111/j.1475-5661.2009.00331.x>
- Nightingale AJ, Eriksen S, Taylor M et al (2020) Beyond technical fixes: climate solutions and the great derangement. *Clim Dev* 12:343–352. <https://doi.org/10.1080/17565529.2019.1624495>
- Öz Ö, Aksoy Z (2019) Challenges of building alternatives: the experience of a consumer food co-operative in Istanbul. *Food Cult Soc* 22:299–315. <https://doi.org/10.1080/15528014.2019.1596529>
- Pelling M (2011) Adaptation to climate change: from resilience to transformation. Routledge, London
- Pohl C, Wieding J, Baptista BG (2014) Stirring paper: food for the future? In: Degrowth conference Leipzig 2014, pp 1–3
- Prieto LP, Domínguez-Serrano M (2017) An ecofeminist analysis of degrowth: the Spanish case. *Fem Stud* 35:223–242. <https://doi.org/10.1515/fs-2017-0027>
- Pungas L (2021) Caring dachas: food self-provisioning in Eastern Europe through the lens of care. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, New York, pp 59–74
- Radu I, Parent É, Snowboy G et al (2021) Degrowth, decolonisation and food sovereignty in the Cree Nation of Chisasibi. In: Nelson A, Edwards F (eds) Food for degrowth. Routledge, London, pp 173–185
- Rivera-Ferre MG, Constance DH, Renard MC (2014) Convergence and divergence in alternative agrifood movements. In: Mooney PH, Tanaka K, Ciciurkaite G (eds) *Alternative agrifood movements: patterns of convergence and divergence*. Emerald Group Publishing Limited, Bingley, pp 313–322
- Robertson MM (2006) The nature that capital can see: science, state, and market in the commodification of ecosystem services. *Environ Plan D Soc Space* 24:367–387. <https://doi.org/10.1068/d3304>
- Rodrigues de Souza R, Seifert RE (2018) Understanding the alternative of not growing for small mature businesses. *Manag Rev* 29:333–348. <https://doi.org/10.5771/0935-9915-2018-4-333>

- Roman-Alcalá A (2017) Looking to food sovereignty movements for post-growth theory. *Ephemer Theory Polit Organ* 17:119–145
- Salzer I, Fehlinger J (2017) Ernährungssouveränität - Weder Wachsen noch Weichen, sondern gutes Essen für alle! In: Degrowth in Bewegung(en). Oekom-Verlag, pp 128–139
- Samerski S (2018) Tools for degrowth? Ivan Illich's critique of technology revisited. *J Clean Prod* 197:1637–1646. <https://doi.org/10.1016/j.jclepro.2016.10.039>
- Scheidel A, Ertör I, Demaria F (2022) Degrowth in agrarian and fisheries studies. In: Akram-Lodhi AH, Dietz K, Engels B, McKay BM (eds) *Handbook of critical agrarian studies*. Elgar, Cheltenham, pp 648–656
- Schumacher EF (1973) *Small is beautiful: economics as if people mattered*. HarperCollins, New York
- Scoones I (2016) The politics of sustainability and development. *Annu Rev Environ Resour* 41:293–319. <https://doi.org/10.1146/annurev-environ-110615-090039>
- Seyfang G, Smith A (2007) Grassroots innovations for sustainable development: towards a new research and policy agenda. *Environ Polit* 16:584–603. <https://doi.org/10.1080/09644010701419121>
- Sklair L (2019) World revolution or socialism, community by community, in the Anthropocene? *J World Syst Res* 25:297–305. <https://doi.org/10.5195/jwsr.2019.956>
- Smil V (2020) *Growth. From microorganisms to megacities*. MIT Press, Cambridge
- Snow DA, Soule SA, Kriesi H, McCammon HJ (eds) (2019) *The Wiley Blackwell companion to social movements*. Wiley, Hoboken
- Spanier J (2021) Rural futurism: assembling the future in the countryside. *ACME* 20:120–141
- Spanier J, Feola G (2022) Nurturing the post-growth city: bringing the rural back in. In: Savini F, Ferreria A, von Schönfeld KC (eds) *Post-growth planning: cities beyond the market economy*. Routledge, New York
- Stapleton SC (2019) Urgenci: international network of community supported agriculture (urgenci.net). *J Agric Food Inf* 20:196–205. <https://doi.org/10.1080/10496505.2019.1630788>
- Staud T (2015, September 10) Grüne Braune. In: Bundeszentrale für Polit. Bild. <http://www.bpb.de/politik/extremismus/rechtsextr emismus/211922/gruene-braune>
- Stirling A (2011) Pluralising progress: from integrative transitions to transformative diversity. *Environ Innov Soc Transit* 1:82–88. <https://doi.org/10.1016/j.eist.2011.03.005>
- Strenchock L (2021) Germinating degrowth? On-farm adaptation and survival in Hungarian alternative food networks. In: Nelson A, Edwards F (eds) *Food for degrowth*. Routledge, New York, pp 77–89
- Szakál D, Balázs B (2021) Co-creation for transformation: food for degrowth in Budapest Food City Lab initiatives. In: Nelson A, Edwards F (eds) *Food for degrowth*. Routledge, New York, pp 115–127
- Van Der Ploeg JD, Franco JC, Borras SM (2015) Land concentration and land grabbing in Europe: a preliminary analysis. *Can J Dev Stud* 36:147–162. <https://doi.org/10.1080/02255189.2015.1027673>
- Vivero Pol JL, Schuftan C (2016) No right to food and nutrition in the SDGs: Mistake or success? *BMJ Glob Heal* 1:1–5. <https://doi.org/10.1136/bmjgh-2016-000040>
- Voegt L (2009) Short supply chains as a criterion for sustainable food production and consumption. In: Millar K, Hobson West P, Nerlich B (eds) *Ethical futures: bioscience and food horizons*. Wageningen Academic Publishers, Wageningen, pp 428–433
- Whatmore S (2006) Materialist returns: practising cultural geography in and for a more-than-human world. *Cult Soc Crit Essays Hum Geogr* 13:600–609. <https://doi.org/10.4324/9781351160360-21>
- Yates L (2015) Rethinking prefiguration: alternatives, micropolitics and goals in social movements. *Soc Mov Stud* 14:1–21. <https://doi.org/10.1080/14742837.2013.870883>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.