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Postgrowth food systems: critique, visions, pathways

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Abstract
Sustainable food systems are essential for societies to be able to thrive within planetary boundaries. Multiple visions compete to cast light on the future of food production and consumption worldwide. However, it has become difficult for many to imagine pathways to just and sustainable food systems. To navigate this bloc, this essay explores food system sustainability from a degrowth perspective. Departing from socio-technical and socio-ecological readings of food systems' unsustainability, degrowth builds on a critique of our dominant socio-economic system that pursues growth at all costs, resulting in human exploitation and environmental destruction. Thus the purpose of this essay is to sketch visions and pathways for post-growth food systems, stimulating readers to imagine and practice food systems – and other forms of society and economy more broadly – that ensure environmental justice and a good life for all within planetary boundaries.

1. The need for food system transformation

Let me begin my intervention[1] by stressing the urgency and need for greater awareness of the magnitude of the challenge that we are facing. Human societies and economies (especially Western industrialized ones) have historically driven the so-called 'Great Acceleration,'[2] undermining various vital ecological functions on which both human and non-human life depend (Steffen et al., 2015). The so-called biophysical 'planetary boundaries' in which human civilization has safely existed are being transgressed (Rockström et al., 2009;

[1] This is the text of a keynote lecture delivered at the 15th Conference of the International Farming Systems Association (https://ifsa.boku.ac.at/), in Trapani, Italy, on 1 July 2024. The text was only lightly edited to ensure its readability and accessibility in printed form.
[2] The "term 'Great Acceleration' aims to capture the holistic, comprehensive and interlinked nature of the post-1950 changes simultaneously sweeping across the socio-economic and biophysical spheres of the Earth System, encompassing far more than climate change" (Steffen et al., 2015, p. 2).

Richardson et al., 2023). In turn, we are moving into a realm of uncertainty in which current global weather extremes give us only a glimpse. The existential threat of the climate crisis is – quite literally – unprecedented. In modern history, we have never faced concentrations of CO_2 as high as today. Nor have we seen such levels in the past 800 thousand years (Royal Society, 2020).

The climate and ecological crisis are not only caused by food systems, of course – but also by societies and economies geared towards perpetual compound growth of their material and energy throughput (that is, the energy and materials flowing through socio-economic systems). I side here with Peter Newell and Matthew Paterson who argued that the:

> *[...] origins of climate change are in the ways that the economy has been organized; the technologies, sectors, [cultural] imperatives and patterns of growth that have led to increasing CO_2 emissions. These have all been also central to the growth of the capitalist economy as a whole over the last two centuries (Newell and Paterson, 2010, p. 7).*

And there is more. Research has shown that no country presently manages to strike a balance between staying within planetary boundaries and meeting basic social needs such as safety, education, or political voice. Typically, rich countries meet many social needs while overshooting ecological boundaries; whilst other countries largely exist within ecological boundaries but fail to provide their citizens with solid social foundations (Fanning et al., 2022). This is because the prevailing capitalist economy has structural problems, particularly the one where the gains of some depend on the losses of many others (e.g., Harvey, 2014; Hickel, 2017).

Thus, the threat posed by ecological challenges and injustices necessitates a transformation of the economy, society and – as I will argue – of food systems. To be clear, I am not referring to some adjustment of incentives or a 'quick fix' of technologies, but a transformation away from an extractivist capitalist economy responsible for "[...] monumental damage and injustice through its ceaseless need for expansion, accumulation, and extraction" (Lövbrand et al., 2020, p.4).

We should want an economy – and food systems within it – that delivers:

- positive contribution to human – and non-human – flourishing, including the provision of decent livelihoods and meaningful work; and
- low material and energy throughput (O'Neill et al., 2018).

To reiterate: this entails a fundamental social and economic transformation, as it "[...] is widely recognised that we need to shift some very big cultural frames—the importance of economic growth, the dominance of fossil fuel capitalism, the hope of modernity as unending progress—to deal adequately with the climate change challenge" (Head, 2019, p. ix). It is also increasingly recognised that "[...] deep reductions in energy use and carbon emissions will not be possible within political economies that are driven by the capitalist imperatives of growth, commodification and individualization" (Wilhite, 2016, p. 2). Paraphrasing Tim Jackson (2016): we cannot change ecological limits nor human nature, but we (a generic 'we', but also we, scientists) can and do reproduce our social world – through the structures and institutions that shape and, at the same time, are shaped by our norms and imaginaries.

These, then, are the questions on which I would like to focus this essay: what food systems could contribute to forms of society and economy that prioritise the wellbeing of all and sustain the ecological basis of life? What would food systems not needing to grow to merely survive look like? And how could we get there? I will argue that the unsustainability and injustice of industrial food systems in modern capitalist societies have roots not merely in socio-technical or managerial fallacies, but also – and more importantly – in political-economic structures alongside cultural models of extractivist and exploitative capitalist development. Departing from socio-technical or socio-ecological readings of farming systems' unsustainability, I will address these issues via a degrowth approach; a movement, critique, and vision that has recently entered the debate on farming systems' sustainability and transformation. I will then conclude by suggesting new research directions.

2. Critique

Industrial food systems in modern capitalist societies are characterized, among other features, by high levels of external input; an extractive approach to the natural environment; reliance on markets; increasing financialisation; an imperative to grow, and capital accumulation (Bernstein, 2015). Despite the increasing affordability of so-called 'recommended diets' (as defined in country-specific guidelines), food systems "[...] are falling short of delivering optimal nutrition and health outcomes, environmental sustainability, and inclusion and equity for all" (Ambikapathi et al., 2022, p. 764).

Agriculture and food systems contribute substantially to the transgression of the planetary boundaries (Campbell et al., 2017). Relevant research has identified multiple negative environmental effects of these activities, such as the "[...] destruction of biodiversity and environmental service systems [...]; animal welfare issues; [and] excessive levels of waste and carbon footprints" (Jones et al., 2010, p. 96). Industrial food systems also have negative social and health-related repercussions. These include an obesity epidemic and its associated health conditions; poor quality of food (in terms of taste, and human nutrition), and limited access to food (as indicated by the increasing diffusion of food banks); the expulsion of smallholders and peasants from the land and markets; and the loss of often-diverse traditional practices and cultivars (Jones et al., 2010; Campbell et al., 2017).

Food systems are not only drivers of negative impacts; they are also vulnerable to them. Climate change is a case in point: agricultural systems are responsible for around one-third of the global greenhouse emissions fueling climate change, yet the numerous adverse consequences of climate change put pressure on water security and food production in every region of the world (Pörtner et al., 2022). Extreme weather events and disruptions, such as droughts and inland flooding, damage the land systems and infrastructure on which food systems depend. Limited water availability, poor soil properties, and the slower and less visible, yet hard-to-reverse, losses in crop and pasture suitability and productivity, are all associated with worsening climatic conditions for agriculture (Pörtner et al., 2022).

The point I would like to make is that the unsustainability and injustice inherent to industrial food systems in modern capitalist societies have roots not merely in socio-technical or managerial fallacies (Darnhofer et al., 2012), but also – and more importantly – in political-economic structures, and cultural models of extractivist and exploitative capitalist development.

To elaborate on some of these root causes, I will build on a multidimensional degrowth critique of growth-addicted economies and societies (Table 1) to help us connect the dots between these different readings of the current situation. In other words, to place food systems' unsustainability in a bigger – societal – picture.

Table 1: Critiques of growth (adapted from Schmelzer et al., 2022)

Critique	**Economic growth…**
Ecological	…destroys the ecological foundations of human life.
Socio-economic	…mismeasures human life and obstructs wellbeing and equality.
Of Capitalism	…is driven by capitalist exploitation and accumulation.
Cultural	…produces alienating ways of working, living, relating to each other.
Feminist	…is based on gendered exploitation and devalues reproduction.
Of Industrialism	…gives rise to undemocratic productive forces and techniques.
South-North	…relies on and reproduces relations of domination, extraction, and exploitation.

Degrowth deconstructs the hegemonic belief that perpetual, compound economic growth *per se*, is a good thing. By contrast, degrowth points towards a form of society and economy that aims for the wellbeing of all and sustains the ecological basis of life (Kallis et al., 2020; Schmelzer, 2022).

Working down Table 1, the ecological critique illustrates the destruction of human life relative to excessive economic growth, which has already been discussed in the previous paragraphs.

A socio-economic degrowth critique provides a useful lens to consider the alienation of consumers. A culture of chasing new-and-trending restaurants and limited-edition food products – enabling and, in some cases, being engineered for the consumer to never find satisfaction – undermines our sense of wellbeing. This perspective can also help bring into the picture the exploitation that characterizes food production ('Of Capitalism' Critique): the legal-and-illegal systems enabling the extraction of cheap nature and labour, including the undocumented farm labourers sustaining food systems; who we, too often, deliberately ignore (e.g., Perrotta, 2014). For the purpose of this essay, I will not dwell on the exacerbating problem of indebtedness afflicting farmers while disciplining them into growth maximizing practices in the capitalist food systems (Gerber, 2014).

Food systems' unsustainability and injustice are also crucially anchored in cultural models of extractivist and exploitative capitalist development (Cultural Critique, Table 1). Capitalism is dominated by cultural and institutional logics that privilege individual gains over collective benefit; privatization over sharing; efficiency over sufficiency; externalization over responsibility, and so forth (Table 2). Food systems are no exception under capitalism. In food systems that are geared towards accumulation and growth, efficiency gains are not simply saved; most likely, they are spent by companies in more production, and by consumers in more consumption – this is the well-known 'Rebound Effect' (e.g., Paul et al., 2019; Hegwood et al., 2023). Similarly, nudges towards more sustainable or healthy foodstuffs by comparison may be offset by the emergence of new types of junk food and unsustainable and/or unhealthy food practices (e.g., Grabs, 2015; Sunstein, 2017).

Table 2. Dominant logics in Capitalist and Post-capitalist systems (adapted from Feola, 2020).

Dominant logics underpinning Capitalism / Perpetual compound growth	**Dominant logics underpinning Post-capitalism / Post-growth**
Wealth	Wellbeing
Private property	Commoning
Exchange value	Use value
Accumulation and growth (limitless)	Balance (within limits)
Production	Reproduction
Efficiency	Efficiency and sufficiency
Individual	Collective
Rationality	(Multiple forms of) socio-cultural engagement
Separation	Relation
Utilitarianism	Care
Externalisation	Responsibility
Placeless-ness	Place-based-ness
Human	Human and non-human

The degrowth critique of industrialism can help us put into place issues of undemocratic governance of the food system, reflected in the corporate concentration of service supply and productions along the supply chain (Table 3). Food system unsustainability and injustices therein are not merely the consequence of poor technologies or inefficient implementation of business models, market mechanisms, or technical interventions. They are simultaneously being homogenised while land and resources are becoming ever-more-concentrated. As

Jennifer Clapp argued, "[...] concentrated firms can shape markets, shape technology and innovation agendas, and shape policy and governance frameworks" (Clapp, 2021, p. 404).

The political economy determines, among other things: who makes decisions; for which purpose, and in the interests of whom (van Oers et al., 2021). It determines whose knowledge and values count in those decisions, how benefits are distributed, and how costs are shared – if at all. In other words, corporate concentration and power undermine key goals for sustainable and socially-beneficial food systems, such as equitable livelihoods, sustainability, and broad-based participation in food system governance (Clapp, 2021).

Table 3. Corporate concentration in the agri-food supply chain (adapted from IPES-Food, 2023).

Agri-food supply chain	**Corporate concentration**
Seeds	Top six firms control 58%
Agrochemicals	Top six firms control 78%
Fertilizers	Top 10 firms control 38%
Farm machinery	Top six firms control 50%
Animal pharmaceuticals	Top six firms control 72%
Global grain traders	Four firms control 70-90%
Food and beverage processors	Top 10 firms make 34% of sales earned by top 100 firms
Retailers	Top 10 firms control 11% of consumer spending

The degrowth critique also points to the unpaid and undervalued reproductive work that is necessary to sustain a capitalist industrial food system (Feminist Critique, Table 1). The model of a conventional family farm, "[...] typically shows a heterosexual couple and their nuclear family following traditional masculine and feminine roles in the family, the household, and

the farm" (Raj and Feola, 2024, p. 1). Said model , "[...] links masculinity to leadership in food production, commercial operations, and machinery usage while assigning femininity to subordinate roles in the fields and sales, manual labour, and responsibility over unpaid reproduction work such as housekeeping, cooking, and childcare duties" (Raj and Feola, 2024, p. 1). In turn, this affects underrepresentation of, discrimination against, and exclusion of female-identifying and queer people. Such discrimination extends to difficulties in obtaining credits, loans, job opportunities, and selling produce in local markets, all stemming from non-conformity to conventional gender and identity roles in agriculture (Leslie, 2019).

The degrowth critique also highlights problematic North-South relations and their role in growth-oriented economies (South-North critique, Table 1). For example, claims about the productivity and efficiency of European agricultural production will most often omit that such productivity, to an extent, comes at the expense of cheap labour, land, and resources elsewhere in the world; as the Dutch organic farmer and PhD graduate Meino Smit insightfully showed:

> *[...] production per hectare in the Netherlands is now higher than it used to be […] In relation to only the direct land use of Dutch agriculture, this is certainly the case [but] […] In part, the indirect land use of Dutch agriculture in fact leads to a loss of agricultural land elsewhere in the world (Smit, 2018, p. 11, own translation).*

Smit's research shows that the pursuit of sustainable food production is often achieved by powerful economic actors, often based in the North, outsourcing local activities to countries in the South with poor (or poorly-implemented) labour and environmental legislation; in turn, displacing the social and ecological costs by using cheap labour and fossil-fuels there. In addition, those aforementioned actors also shift social and ecological costs through adopting supposedly 'smart' technologies in the North; thus increasing the demand for the damaging extraction of scarce resources (e.g., rare Earth minerals) necessary to fuel these technologies elsewhere.

3. Vision

It is difficult to envision postgrowth food systems – as it is generally challenging to envision something that does not yet exist – but we are not fully in-the-dark. We have quantitative models to test degrowth principles in food and land systems. A simulation model developed by Leon Bodirsky, David Chen, and colleagues, for example, showed:

> *[...] that a structural, qualitative food system transformation can achieve a steady-state food system economy that is net GHG[3]-neutral by 2100 while improving nutritional outcomes. This sustainable transformation reduces material throughput via a convergence towards a needs-based food system, is enabled by a more equitable income distribution, and includes efficient resource allocation through the pricing of GHG emissions as a complementary strategy (Bodirsky et al., 2021, p. 341).*

Regarding interventions leading to such a transformation of the food system, the research showed that:

> *[r]esource-intensive and highly polluting industries, such as the livestock industry, would need to be downscaled along with a reduced consumption of animal protein. Other sub-sectors such as horticulture should in contrast even be expanded due to their role in preventing malnutrition and chronic diseases. Furthermore, farmers need to adopt low-polluting management practices, and supply chains must shift towards low-polluting source materials (Bodirsky et al., 2021, p. 344).*

Importantly, the authors noted that "[t]his diet change is not a mere reduction of consumption, but a qualitative change that can be even considered an improvement with respect to the satisfaction of human needs, given the improved nutritional composition of the dietary shift" (Bodirsky et al., 2021, p. 344).

[3] Greenhouse gas.

Meino Smit (2018), whom I cited earlier, went further: he argued that Dutch agriculture is unsustainable (in energetic balance terms), estimating that bringing Dutch agriculture within sustainable 'energetic' boundaries would entail food systems that:

1. Produce primarily, if not only, for the national population.Involve production only in cold greenhouses.
2. Reduce transport flows; hence, involve very little export-and-import of necessary resources for production and resulting foodstuffs, with production and consumption intended for local/regional ends (wherein transport systems should require little energy, such as transport by rail and water).
3. Increase carbon sequestration in agricultural land through utilising more organic matter and less tillage in agricultural processes.
4. Take hand power as the starting point for providing energy; therefore, employing four times as much labour than at present.
5. Use as little fossil fuels and electronics as possible.
6. Reuse all raw materials.
7. Reuse all organic matter, meaning all residual streams of organic matter must be collected separately for use as fertilizer.
8. Involve stockpiling water in winter for use in summer.
9. Focus research goals on the development of energy and resource-saving technology, rather than labour-saving technology.

Juan Infante Amate and Manuel González de Molina reached similar conclusions in their investigation of Spanish agriculture (e.g., 2013).

Post-growth food systems can also be envisioned by examining the practices experimented with alternative food networks; something that the International Farming System Association (2009) community has successfully demonstrated. The overall global food system harbours an often-underappreciated diversity: a multitude of agroecological farms; food collectives; community-supported agriculture schemes; farmer's markets; and food sharing initiatives – alongside many other types of grassroots, community-based and cooperative initiatives and

social enterprises involving millions of people worldwide, who are already developing alternative and civic food systems (Goodman et al., 2012; Renting et al., 2012).

Empirical studies show that these initiatives can promote productive agroecological farming practices; create meaningful jobs; produce healthy food; de-commodify food and resources; and build communities. This is because they are embedded in place: ecologically, socially, and culturally. And because they are often managed in horizontal, deeply-democratic manners, prioritizing social and environmental well-being and food sovereignty over profit-making (e.g., Levkoe, 2006; Forssell and Lankoski, 2015; Poulsen, 2017; Rosol, 2020; Raj et al., 2024; Rossi et al., 2024; Smessaert and Feola, 2024).

Despite many setbacks and compromises, many of these initiatives function according to logics that are contradictory to the dominating industrial capitalist food systems (Table 2, right-hand column). However, not all agrifood initiatives tackle all the logics that appear in Table 2, and the realization of those logics is often imperfect and tentative. They may not be large – nor able or willing to 'scale up' – but these alternatives certainly question many of the deep seated, taken-for-granted logics of industrial capitalism at the root of their unsustainable and unjust food systems.

In other words, through their guiding logics, such initiatives show the horizon of a fundamentally alternative paradigm for food systems, which Steven McGreevy and colleagues (2022) synthesised into five principles: sufficiency, regeneration, distribution, commons, and care. While the list of principles and their contours can, of course, be discussed, the existence of alternatives operating here-and-now for a fundamentally different food system can be considered a compass that indicates a direction, if not a specific arrival point, of transformation.

4. Pathways

Food systems' complexity defies any 'silver-bullet' solution (Leeuwis et al., 2021). Therefore, I prefer to think of transformation as a process emerging from attempts to produce change through different types of interventions as operated by different agents in various spaces.

The challenge, then, is how to seek resonance across these agents, interventions, and spaces. In this section, I suggest three pathways towards meeting this challenge.

Pathway 1: Evolutionary Policy Approach

Transformative change can be conceptualised as the double movement of decline and phase-out of unsustainable systems, and the emergence and consolidation of sustainable ones (Figure 1). The evolutionary policy approach (loosely inspired by van den Bergh and Kallis, 2009; Jessop, 2010; Leeuwis et al., 2021) (i) leverages variation of agri-food practices, (ii) supports the retention and transmission of alternatives, and (iii) deliberately guides their selection, including the phasing-out of unsustainable and unjust agri-food practices.

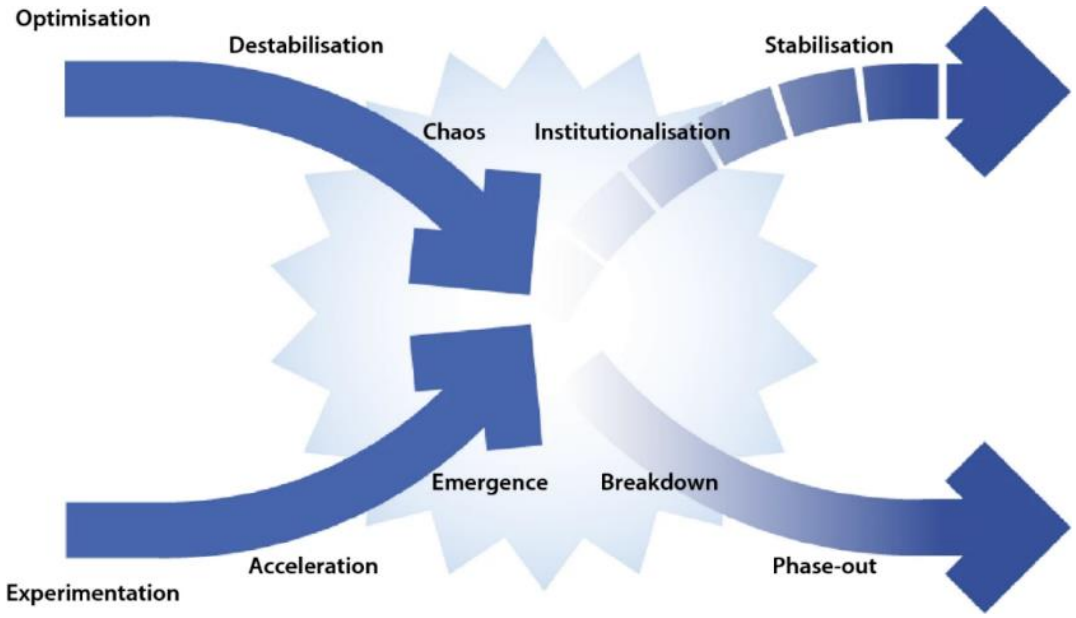

Figure 1. The X-curve portraying the interaction of patterns of build-up and breakdown.
(Source: Hebinck et al., 2022)

When applied to transformation, the approach can thus help to navigate through this double movement. *Leveraging variation* in the food system involves creating spaces and resources for experimentation and accelerating alternatives to the industrial capitalist food system. *Supporting retention and transmission* of those alternatives involves fostering the consolidation of alternatives, but also facilitating learning, replication, and diffusion of

alternatives across geographies. *Selection* involves deliberately phasing out unsustainable and unjust farming, processing, distribution, and consumption practices. The phase-out should be implemented according to principles of distributive, recognition, procedural justice, and restorative justice, as we argued in a paper led by Annika Lonkila and Jani Lukkarinen (Lonkila et al., 2024). While there is always the risk of capture by vested interests – as we discussed in another paper led by Laura van Oers (van Oers et al., 2021) – I would argue that, if pursued through policy and other social change strategies across contexts, and at different levels – and provided the post-growth compass is firm – this evolutionary approach has some potential to inform policy coherence and achieve resonance.

Pathway 2: Synergies in Political Strategies

A second way to think about seeking resonance hinges on the synergies among political strategies. Conventional thought about degrowth transformation has crystallized in three interlinked and mutually-reinforcing strategies (Kallis et al., 2020).

First, prefiguration can be seen in a myriad of concrete – actually existing – alternatives around land or food, such as: commoning; food collectives; food sharing; community-supported agriculture, and the like. These prefigurations change the food system locally and socialize people to alternative values, while also building community and proving on-the-ground that constructing alternatives is challenging but possible.

Second, counterhegemonic mobilization involves resisting the logics and practices of the capitalist growth economy, as well as the exploitation, harm, and damage it creates. Consider the protests against free trade agreements, GMOs, or around safeguarding access to land or food sovereignty. This strategy also involves creating new common senses and parallel institutions of power for transforming the capitalist system alongside broader societal structures.

Third, non-reformist reforms "[...] aim to undermine the prevailing political, economic, social order, construct an essentially different one, and build democratic power toward emancipatory horizons. They seek to redistribute power and reconstitute who governs and how" (Akbar, 2023, p. 2507). For example, if land reforms did not involve expropriation but

rather redistribution, structural changes to subsidy schemes, and measures that contrast land concentration; they could shift power relations and create openings for further change (Guerrero Lara, 2024).

Different actors – such as food and agroecology movements, farmers, community-based collectives, researchers, policy-makers, and social entrepreneurs – may primarily adopt one strategy. Yet it helps to conceive strategies from a more systemic perspective. Leonie Guerrero-Lara (2024), for example, showed that the German community-supported agriculture (CSA) network, which primarily engages with the building of alternatives, also participates in counterhegemonic mobilizations (such as the 'Wir haben es satt' movement) and advocacy at different administrative levels. Thus, it is crucial to appreciate the role of these connections in fostering the resonance I referred to earlier.

Pathway 3: Social Movement Coalitions

Finally, a third way to think about seeking resonance hinges on social movement coalitions. There is an untapped potential for alliances across food, environmental, and degrowth movements. In many ways, agroecology – as promoted through the La Via Campesina movement and in other alternatives – could serve as models of post-growth farming systems (e.g., Nelson and Edwards, 2020; Bozsogi, 2023; Tilzey, 2024). However, the strategic alliance between such grassroots movements is far from established.

In a study led by Julia Spanier and Leonie Guerrero-Lara (Spanier, Guerrero Lara, and Feola, 2024), for example, we examined the potential for a coalition between degrowth and the CSA movements in Germany. There, we found that the current absence of a coalition can be explained by two factors, in addition to a lack of knowledge about degrowth.

First, ideological and strategic differences are expressed in contrasting diagnoses of the problem: CSA focuses on the concrete issue of the loss of smallholder agriculture, while degrowth proposes a broader – and in the eyes of many CSA members, more abstract – critique of socioeconomic structures. We also identified different prognostic framings: CSA is not explicitly anti-capitalist, while degrowth is. As well as different action repertoires: CSA

operates through the strengthening of alternatives, resistance, and advocacy, while degrowth primarily elaborates discourses and imaginaries.

Second, the lack of a coalition between degrowth and CSA in Germany can be related to a lack of conducive factors for coalition building, due to contrasting forms of internal organization (CSA is highly organized, whereas the degrowth movement is more fluid), scarce resources (for both movements), and the limited mobilisation of existing social ties between the movements.

At the same time, we identified several openings for a future coalition. One, critiques of growth pressures in the food system speak to framings in both movements. Two, the action repertoires of the two movements can be complementary: the CSA movement largely focuses on practice-driven social change, while degrowth mainly pursues discourse-driven change. Three, individuals who are engaged in both movements, or in other networks or movements that are closely related to degrowth and CSA, could act as 'bridge builders'.

The point is that coalition building, for how difficult it is, may be a much-needed and promising third pathway to seek resonance among transformative interventions in the food system.

5. Conclusions

In this essay, I departed from socio-technical and socio-ecological readings of farming systems' unsustainability. I proposed a degrowth critique and vision that speaks to a school of thought that is gaining ground in sustainability debates; and that has also recently entered the debate on farming systems' sustainability and transformation (e.g., Nelson and Edwards, 2020; McGreevy et al., 2022; Bozsogi, 2023; Guerrero Lara et al., 2023; Tilzey, 2024).

The International Farming System Association community has done a wealth of research to inform farming systems' transformation. Building on an emerging research agenda on degrowth and food systems (Guerrero Lara et al., 2023), I want to conclude with a set of

research directions that can hopefully spark discussions and reflections in connection with the four research themes outlined below.[4]

Regarding this 15th Conference of the Farming System Association's first theme, 'transition pathways', the perspective I propose in this essay calls for more engagement with critical theories of social change, beyond socio-technical and socio-ecological approaches. For example, the food regime scholarship (e.g., Bernstein, 2015) and post-capitalist approaches in the community economies tradition (e.g., Rosol, 2020; Vincent and Feola, 2020) can push the understanding of change reaching *beyond* the industrial capitalist food regime (Guerrero Lara et al., 2023).

Regarding the second theme, 'capacity development', the degrowth perspective calls for sensitivity to the emancipatory potential of knowledge and knowledge systems, with critical pedagogies shifting power relations and supporting the subaltern in the food system. It also calls for openings to non-Western epistemologies which can inform the rethinking of relations with food, land, water, and each other in the food system (Moragues-Faus and Marsden, 2017).

Regarding the third theme, 'approaches to local development', important questions revolve around the notions of local and community in rural contexts. This refers to structurally extractive urban-rural relations, but also to social and political divides between the city and the countryside (Spanier and Feola, 2022; Guerrero Lara et al., 2023).

Finally, regarding the fourth theme, 'rethinking and reconfiguring food systems', the degrowth perspective foregrounds the political economy of food systems and the politics that are required for regime change (Guerrero Lara et al., 2023). It also calls for awareness of ever-present sources of conflict, pushback, and resistance (i.e., discord) (Patterson et al., 2024). Farming systems can only be changed from within. Therefore, we should not overestimate "[...] the potential for consensus, the capacity to steer and control processes of change, the

[4] These were the four themes of the 15th Conference of the International Farming Systems Association where this paper was initially presented.

absence of decisive friction or conflict, the ability to optimize policy action, and the adequacy of additive actions without also dismantling unsustainable elements" (Patterson et al., 2024; see also Bärnthaler, 2024). Frameworks to deal with discord as an inherent part of transformation, rather than as a nuisance to be smoothed out, are needed. To conclude, unsustainability and injustice of industrial food systems in modern capitalist societies have roots not merely in socio-technical or managerial fallacies, but also – and more importantly – in political-economic structures and cultural models of extractivist and exploitative capitalist development. Starting from a critique of our dominant socio-economic system which pursues growth at all costs, causing human exploitation and environmental destruction, I sketched visions and pathways for post-growth food systems. As such, this essay provides some food for thought to imagine and practice food systems – and, more broadly, forms of society and economy – that ensure environmental justice and a good life for all within planetary boundaries.

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