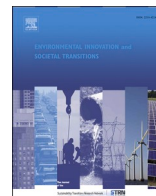


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Deepening democracy for the governance toward just transitions in agri-food systems

Julia Tschersich^{a, #}, Kristiaan P.W. Kok^{b, *, #}^a Copernicus Institute of Sustainable Development, Faculty of Geosciences, Utrecht University, Vening Meinesz building, Princetonlaan 8a, 3584 CB Utrecht, The Netherlands^b Athena Institute, VU University Amsterdam, De Boelelaan 1085, 1081HV Amsterdam, the Netherlands

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ABSTRACT

In this paper, we explore the relation between democracy and justice in governing agri-food transitions. We argue that a deeper understanding of democracy is needed to foster just transitions. First, we present a multi-dimensional understanding of justice in transitions and relate it to scholarship on democratizing transitions. Then, we argue that three paradigm shifts are required to overcome current unsustainable dynamics: (1) from expert toward pluralist understandings of knowledge; (2) from economic materialism toward post-growth strategies; and (3) from anthropocentrism toward reconnecting human-nature relationships. We explicate what these paradigm shifts entail for democratizing transitions from distributive, procedural, recognition and restorative justice perspectives. Finally, we highlight six challenges to institutionalizing deep democratic governance. These entail balancing tensions between: multiple justice dimensions, democracy and urgency, top-down and bottom-up directionalities, local and global scales, realism and idealism, and roles of incumbent scientific systems. This requires thoroughly rethinking transition studies' normative and democratic ambitions.

1. Introduction

In order to stay within planetary boundaries and combat the world's most pressing challenges such as climate change, biodiversity loss, malnutrition and social inequalities, there is an urgent need to foster transitions toward healthy and sustainable agri-food systems (Rockström et al., 2020; Willett et al., 2019). The field of transition studies offers tools and guidance for both understanding and governing long-term processes of structural systemic change¹ (see Grin et al., 2010; Köhler et al., 2019; Markard et al., 2012 for overviews of the field). Transition scholars use a wide variety of analytical frameworks and perspectives in analyzing the stasis and (transformative) dynamics in agri-food systems (El Bilali, 2020; Melchior and Newig, 2021). In that way, transition scholarship provides insights into multi-level dynamics that can result in diverse transition pathways, i.e. the scale-dynamics of novel agri-food grassroots innovations such as agri-food networks (Darrot et al., 2015), the role of consumer and producer practices in pathways of

* Corresponding author.

E-mail address: k.p.w.kok@vu.nl (K.P.W. Kok).

both authors are first authors and have contributed on equal footing to the manuscript

¹ Transition studies offers plenty of insights into the multi-level co-evolutionary dynamics of socio-technical systems through frameworks such as the Multi-Level Perspective (see Geels, 2002; Geels & Schot, 2007), the Technological Innovation Systems approach (see Bergek et al., 2008) and social practice approaches (see Shove & Walker, 2007).

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agroecology and diversified food traditions (Ely et al., 2016; Spaargaren et al., 2013), and the role of agency and values in food transitions (Rosin et al., 2017; Vivero-Pol, 2017). Yet, governing highly complex systems like agri-food systems is challenging as complex systems exhibit non-linear, co-evolutionary and multi-level dynamics (Rotmans and Loorbach, 2009; Zhang et al., 2018) that lead to locked-in system states (Geels and Schot, 2007) and undesirable resilience (Oliver et al., 2018). This requires adaptive, reflexive and pluriform governance efforts that confront fundamental inequalities and redirect vested power relations that stabilize status-quo configurations (Kok, Loeber et al., 2021; Rossi et al., 2019; Sievers-Glotzbach and Tschersich, 2019; cf. Grin et al., 2010).

In that light, transition scholarship points to the need to explore justice dimensions of large-scale transformation processes (e.g., Köhler et al., 2019; McCauley and Heffron, 2018; Williams and Doyon, 2019). While justice is a contested concept, scholars argue there are many different dimensions of social justice such as (1) distributive justice; (2) procedural justice; (3) recognition justice; and (4) restorative justice (see i.e. Fraser, 1998, 2010; Jenkins et al., 2016; Kaljonen et al., 2021; Kortetmäki, 2016; McCauley and Heffron, 2018). The concept of *just transitions* is rapidly getting traction in the field, but it “*has been tackled more explicitly in the energy transitions stream of literature*” (Köhler et al., 2019: 16, cf. Jenkins et al., 2016; McCauley and Heffron, 2018). At the same time, the broader scholarship on environmental sustainability of agri-food systems has provided ample insights on topics such as food justice, environmental justice, ecological justice, food sovereignty, and food democracy (Smaal et al., 2021; Whitfield et al., 2021; Pickering et al., 2020; Celermajer et al., 2021; Moragues-Faus, 2017; Loo, 2014; Allen, 2010). It is argued that synergies between these developments could be further explored and that the role of *justice in agri-food transitions* deserves explicit attention (Hebinck, Klerkx et al., 2021; Tribaldos and Kortetmäki, 2021; 2022; Kaljonen et al., 2021).

A second and related point of departure in this paper concerns the need to strengthen the role of democracy in, and efforts of democratizing governance of, sustainability transitions. Calls for democratizing transition governance have emerged in last decades (e.g., Chilvers and Longhurst, 2016; Hendriks, 2009), which does not only involve democratization of the state as an institution (cf. Pickering et al., 2022), but also entails enacting transitions through multi-actor co-production in research and innovation (e.g., Norström et al., 2020; Fazey et al., 2018; Lang et al., 2012; Stirling, 2008) or efforts of deliberative policy making (e.g., Hendriks and Grin, 2007; Hajer, 2003). In light of the comprehensive nature of changes required for just agri-food transitions and widespread political apathy, rethinking democracy is essential in order to meaningfully engage various groups in these processes of transition. As Pickering et al. (2022: 10) stress in a review on the relation between democracy and sustainable transformation, democratization is important as “*deepening the quality of democracy across all scales of governance is likely to foster sustainability transformations*”, especially as this might “*help to counterbalance the powerful forces that pose roadblocks to sustainability, including neoliberal and extractive states and unregulated markets*”. Democracy as a concept is strongly entangled with conceptualizations of justice, but mostly framed within a ‘procedural’ dimension of justice that is different from, and can be in contrast to other (outcome-oriented) forms of social justice (e.g. distributive, recognition or restorative justice dimensions). As we will argue in our paper, more deeply exploring the highly political nature of ‘democratizing’ transformative processes (see e.g., Turnhout et al., 2020; Chilvers and Kearnes, 2020; Kok, Gjefsen et al., 2021) can provide a rich and dynamic picture of the interdependencies between multiple dimensions of justice, which in turn could provide guidance on how governance efforts could further contribute to just transitions.

In this paper, we therefore set out to more deeply explore the relation between democracy and justice in the governance of transitions in agri-food systems and argue that a deeper understanding of democracy might help to foster just transitions. As an analytical focal point for advancing our argument we build on transformation studies in recognizing that fundamental transformations toward sustainability require addressing deep leverage points; points of intervention where (small) alterations can initiate comprehensive change processes throughout the system (Abson et al., 2017; Meadows, 1999). Hence, building on Sievers-Glotzbach and Tschersich (2019), we argue that three paradigm shifts in governance efforts are required to overcome current unsustainable dynamics: (1) from expert toward pluralist understandings of knowledge; (2) from economic materialism toward post-growth strategies; and (3) from anthropocentrism toward reconnecting human-nature relationships. Confronting these paradigms entails a thorough rethinking of transition studies’ normative and democratic ambitions. Throughout our analysis we will therefore explicitly link and reflect upon the relation between democratization and justice from the perspective of these paradigm shifts. In this way, we aim for mutual enrichment of the debates around justice and democracy and derive concrete implications for transition governance efforts.

Our paper is structured as follows: In Section 2, building on the wider literature on justice in transitions (e.g., Fraser, 2007; Jenkins et al., 2016; McCauley and Heffron, 2018), we elaborate on the multi-dimensional concept of justice in sustainability transitions by highlighting four dimensions of justice (procedural, distributive, recognition, restorative). In Section 3, we build on insights from political science and *Science and Technology Studies (STS)* to deepen our understanding of democracy and efforts to democratize transition governance. In Section 4, we bring together these insights and relate a deepened understanding of democracy with a multi-dimensional perspective on justice in agri-food transitions. We reflect upon these insights from the perspective of the three paradigm shifts. In our discussion in Section 5, we present six challenges for institutionalization of deep democratic efforts for just agri-food transitions and we point to directions for future research.

2. Justice in transitions

The concept of ‘just transition’ originates from the labor and environmental justice movements’ call to consider the economic and employment effects of environmental regulation. The concept was later taken up by climate activists (Stevis and Felli, 2020) and debates on environmental and ecological justice (Pickering, 2019; Schlosberg, 2013; Walker, 2009). Within the field of transition studies, however, it has so far mainly been discussed in the literature on climate and energy transitions (Heffron and McCauley, 2018; Jenkins et al., 2018;). It is argued that further exploring just transitions in agri-food systems is needed (Hebinck, Klerkx et al., 2021; Whitfield et al., 2021; Kaljonen et al., 2021).

While just transition as a concept remains contested with diverging understandings across these fields (Stevs and Felli, 2020), it is widely acknowledged that just transitions need to be multidimensional and need to reach beyond distributional manners to include social and cultural values and contextual factors of decision making. While acknowledging that other conceptions exist, we consider the following four dimensions of justice highlighted in different combinations in the justice and transition literature: distributive, procedural, recognition and restorative justice² (see i.e. Fraser, 1998, 2010; Jenkins et al., 2016; Kaljonen et al., 2020; Kortetmäki, 2016; McCauley and Heffron, 2018). These dimensions embrace that a broad understanding of justice requires reaching beyond mere considerations of distributive justice, and needs to include a participatory and representational dimension as well. Hence this considers both procedural and substantive or outcome-oriented levels of justice (Fraser, 1998; Kortetmäki, 2016). Especially the procedural and recognition dimension highlight the who and how of justice, and therefore allow to critically review politics of framing and issue-setting (Kortetmäki, 2016). Moreover, recognition and restorative justice emphasize the relational nature of justice and put a special emphasis on non-humans (see McCauley and Heffron, 2018; Kaljonen et al., 2021). While the dimensions of justice are conceptually and analytically separate, they are intertwined and overlap in practice (Kortetmäki, 2016).

Distributive justice refers to the fair allocation of material and immaterial harms and benefits but also associated responsibilities of transitions (see Jenkins et al., 2016; Kortetmäki, 2016; Walker, 2009). It highlights the outcome and therefore economic and material dimensions of justice, and helps to assess how benefits and inequalities are distributed. Distributive justice requires to consider the diversity of contexts and (the intersectionality of) identities to ensure distributive justice on a global level, and identify where the most vulnerable and affected communities are and how they can be accounted for (Jenkins et al., 2016; McCauley and Heffron, 2018). With regard to just agri-food transitions, this dimension emphasizes the distribution of risks and benefits associated with large scale changes in the agri-food system, in particular the distribution of access to and security of healthy and nutritious food, land, income, employment, ecosystem services etc. (Tribaldos and Kortetmäki, 2021; Whitfield et al., 2021). Due to the complex, global interlinkages of agri-food systems and their potential effects on future generations, just distribution also requires to consider perspectives and prospects of such ‘distant voices’, unable to directly participate in governance processes of agri-food transitions (Tribaldos and Kortetmäki, 2021; Whitfield et al., 2021). Distributional justice has a rights-based dimension as the rights to food and be free from hunger are recognized under international law (Whitfield et al., 2021).

However, as emphasized by Loo (2014), food justice needs to reach beyond a distributional perspective to also include participation and just representation. These aspects are highlighted in *procedural or representation justice*, which focus on participatory parity, hence the ability of (affected) stakeholders to participate equally and in a non-discriminatory way in decision-making. It should provide equal opportunities for different groups, especially those most affected and vulnerable, to participate and be heard in decision-making (Kortetmäki, 2016). This also includes the right of people to define their own agri-food systems. Hence, institutions from the local to global level are needed that do not restrict, but rather allow for and support communities in working toward self-determined agri-food systems on the ground, as emphasized also in food sovereignty (Patel, 2009). Therefore, procedural justice entails political and participatory aspects of justice, such as appropriate procedural rules and institutions (Jenkins et al., 2016; Kortetmäki, 2016) that can ensure a meaningful participation and inclusion of affected people and communities. Moreover, possibilities for representing non-humans in processes of decision-making should be considered (e.g., Eckersley, 2017; Brown, 2018; Celermajer et al., 2021). Participatory justice points to issues of power, as typical forms of participatory injustice are misrepresentation, misframing or injustice in processes of frame-setting (Fraser, 2010).

Recognition justice entails the fair consideration and respect for different views or values (Fraser, 2010; Jenkins et al., 2016; Kortetmäki, 2016), based on complete and equal political rights (Schlosberg, 2013). Misrecognition would then entail cultural domination, non-recognition or ignorance, and disrespect or disregard (Fraser, 2010; Jenkins et al., 2016; Kortetmäki, 2016). This dimension calls to acknowledge divergent perspectives in social, cultural, ethnic, racial and gender differences (Fraser, 1998; Jenkins et al., 2016; Schlosberg, 2013). Claims for recognition justice can be evaluated with regards to two criteria: the effects of recognition between groups and within groups; hence recognition of one group may not impede equality of other groups (Kortetmäki, 2016). A neglect of recognition justice can lead to the dismissal of important (Indigenous) perspectives or arguments in transition governance and international negotiations (Celermajer et al., 2021; Kortetmäki, 2016). For instance, the UN Food Systems Summit (UNFSS) 2021 has been critiqued by various stakeholders for excluding already marginalized voices, and instead being captured by corporate interests and narratives (Canfield, Anderson et al., 2021). This also relates to challenges in securing procedural justice in design and implementation of the UNFSS, for instance regarding a lack of transparency on the decision-making process (Egermann et al., *forthcoming in this special issue*).

Moreover, *restorative justice* has been identified as a particularly important dimension of justice, as it can highlight the need to compensate for harms done not only to individuals or communities but also the environment (Dorsey, 2009; Fox et al., 2016) and the climate (Bernstein, 2016; Posner and Sunstein, 2008). While originally construed as a way to compensate for job losses associated with transitions from fossil to renewable energy (McCauley and Heffron, 2018), it is now more broadly understood, with the aim to repair past damages and redress historical injustices (Whitfield et al., 2021) and to identify where prevention is needed to avoid future harms and account for unforeseen harms throughout processes of transitions (McCauley and Heffron, 2018). This includes not only material reparations for social or environmental damages, but it also has a relational focus on restoring trust and social cohesion after

² Well established is a three-dimensional view of justice including distributive, recognition and representational justice (Fraser, 1998, 2010; Jenkins et al., 2016; Kortetmäki, 2016). Additionally, we argue that it is essential to consider restorative justice, highlighted for instance by McCauley and Heffron (2018), Timmermann (2020) or Kaljonen et al. (2021). Other dimensions have been proposed as well, for instance contributive justice (Timmermann, 2020), historical justice (Whitfield et al., 2021) or cosmopolitan justice (Kaljonen et al., 2021).

wrongdoings have occurred (Kaljonen et al., 2021; Timmermann, 2020). This is also the case when just distribution cannot be achieved in a satisfactory manner in current transition processes due to “the highly differentiated exposure and vulnerability of affected actors” (Kaljonen et al., 2021: 479). For instance, the effects of climate change on agri-food systems have diverse effects across regions and will most strongly affect already vulnerable communities in the Global South (FAO, 2016; FAO et al. 2018). In the context of agri-food transitions, restorative justice could potentially provide an entry point to strengthen decolonial and post-development perspectives in the environmental justice discourse, for instance by allowing for a critique of equal distribution of harms and benefits based on Western understandings of progress, addressing (racial, gender etc.) injustices embedded in current institutions or accounting for past dispossessions (see Álvarez and Coolsaet, 2020; Escobar, 2015). Linking social processes of remediation to environmental restoration (McCauley and Heffron, 2018) can spur just transitions due to improved relations and enhanced trust among actors by rectifying past injustices.

While having distinctly different foci, different dimensions of justice are strongly interlinked. To ensure fair democratic governance processes, distributive, recognition and restorative justice must also be assured. Meaningful participation of stakeholders requires respecting minimum human and participation rights such as free speech and the recognition of various voices and cultural realities to be effective and just. Additionally, for instance, the respective means with regard to time and financial resources are needed, otherwise less privileged groups are often excluded from (time-consuming) processes of decision-making. Conceptions of democracy are incorporated most evidently within the procedural justice dimension. However, as we will argue throughout this paper, better understanding the complex interrelations between democratization and multiple dimensions of justice might help to provide avenues for transition governance. Before further exploring the relation between justice and democracy in agri-food transitions, let us first develop a more detailed understanding on the role of democracy in the governance of transitions.

3. Democratization of transition governance

In this section, we set out to deepen our understanding of efforts to democratize transition governance by first reiterating some key characteristics of transition governance approaches, after which we more thoroughly explore different ways of ‘doing democracy’ in sustainability transitions.

In efforts to combat incumbencies (e.g., Stirling, 2019) and undesirable resilience (e.g., Oliver et al., 2018) of unsustainable and locked-in socio-technical systems (e.g., Geels and Schot, 2007), and to help foster transformative innovations and sustainability transitions, various governance approaches³ that bridge the gap between knowledge and action (cf. van Kerkhoff and Lebel, 2006) have emerged in recent decades (see overviews by Grin et al., 2010; Köhler et al., 2019; Scoones et al., 2020). While different in scope, focus and underlying philosophy, these approaches share deep commonalities in embracing normative directionalities toward sustainable transformation, focusing on stimulating experimentation, including societal stakeholders in research, innovation and policy making while fostering deliberation, learning and reflection among participating actors. Approaches include for instance Transition Management (Rotmans and Loorbach, 2009); Strategic Niche Management (Kemp et al., 1998); adaptive governance (Folke et al., 2005); reflexive governance (Voß and Bornemann, 2011); deliberative policy making (Hajer, 2003); transdisciplinarity (Lang et al., 2012) and the pathways approach (Leach et al., 2010). They are applied in a wide variety of spaces and contexts, such as Transition Arenas (Loorbach, 2007), (Urban) Living Labs (Hossain et al., 2019; Bulkeley et al., 2016), Real-World Laboratories (McCrorry et al., 2020) and socio-technical experiments (see Sengers et al., 2019). Serving as guiding principles rather than blueprints, transition and transformation scholars argue that pluralities of enabling, structural and systemic governance approaches need to be fostered and creatively combined in order to effectively act upon different scales and leverage points to foster sustainable transformation across a wide variety of societal systems (Abson et al., 2017; Scoones et al., 2020; Sievers-Glotzbach and Tschersich, 2019).

There are several arguments for deploying more deliberative and inclusive approaches (see Schmidt et al., 2020 for a recent overview). First, there is a substantive argument stressing that *outcomes* of multi-stakeholder processes are more effective in catalyzing transformations (Norström et al., 2020) and in diffusing “innovations that better meet local needs” (Reed, 2008: 2427). Second, these approaches help foster social learning, trust and reflexivity among participating actors (e.g. Chilvers, 2013; Lang et al., 2012; van Mierlo and Beers, 2020). Third, co-produced knowledge, innovations and policies might help create social acceptance and provide legitimacy to process outcomes (e.g., Stirling, 2008). Fourth and related, there is a normative argument: inclusive governance of (socio-technical) innovations and the potentialities for transformation they bring along strongly echo calls to “democratiz[e] the governance of intent” (Owen et al., 2012: 754) in line with the turn toward the democratization of science in STS (see e.g. Jasanoff, 2003; Latour, 2004; Nowotny, 2003; Reed, 2008).

The normative and democratic foundations of governing innovation and transitions move far beyond traditional understandings of liberal democracies (Wironen et al., 2019; Eckersley, 2017; cf. Brown, 2009; Latour, 2004). Rather than viewing democracy merely as an output or moment (e.g. elections), democracy can be seen as a complex and multilayered concept. Pickering et al. (2022: 2) define democracy as “a form of political system (or polity), institution or practice where people collectively govern themselves, either through direct participation or (typically elected) representation in decision-making”. Brown (2009) stresses that democratic processes involve multiple modes of being *represented*, including not only (different) forms of authorization through which knowledge or power of representatives becomes legitimate and accepted by those who are represented, or ensuring (in)formal accountability of governments and institutions, but also representation through direct participation of citizens in decision-making processes with a focus on meaningful and reflexive

³ As governance arrangements we understand the “ensemble of rules, processes, and instruments that structure the interactions between public and/or private entities to reali[z]e collective goals” (Termeer et al., 2011: 161).

deliberation (cf. Dryzek, 2002; Jasanoff, 2003). As Brown argues (2009: 237), modes of democratic representation exist in many shapes and degrees and require different types of facilitating institutions.

In their work on sustainable innovations, Smith and Stirling consider democratic processes to evolve around (power dynamics in) social relations and they conceptualize democracy as “*access by the least powerful to the capacities for challenging power*”, which comes to the fore especially when negotiating the directionalities of (transformative) innovations (Smith and Stirling 2018: 74; cf. Stirling, 2014). As such, democratization of socio-technical transitions often evolves around processes of participation and deliberation of citizens, publics or other societal stakeholders in transition experiments and spaces such as transformative labs to reflect upon, co-create or implement transformative (social) innovations (Kok, Gjefsen, et al., 2021; de Hoop, 2020; Wironen et al., 2019; Chilvers and Longhurst, 2016). Importantly, deliberative democratization is considered key to legitimizing transition governance and the radical changes it aspires to bring along (e.g., Wironen et al., 2019; Dryzek and Pickering, 2017). At the same time, scholars also stress that tensions can arise between transition governance approaches and institutions of (traditional) representative democracy. As transition efforts often involve decision-making through emerging (public-private) networks where not all voices are equally represented and public accountabilities of innovations are not always warranted (cf. Genus and Stirling, 2018), the democratic legitimacy of (large-scale, publicly funded) interventions deserves attention (Hendriks, 2009; De Geus et al., 2022).

In addition, the degrees to which representative liberal democratic systems and institutions themselves then need to be re- or transformed to facilitate sustainable transformation is a matter of debate (see Eckersley, 2020; Pickering et al., 2022). Proponents of *Environmental Democracy* mainly seek to reform liberal democracy by strengthening its core norms and institutions, in particular by increasing transparency and accountability of policymakers, enhancing environmental rights and values, and strengthening participation of diverse affected communities. Approaches such as *Ecological Democracy*, on the other hand, pose a more radical critique, i.e. by asserting that core assumptions such as its anthropocentric values, the short timespans of electoral cycles, the scale of the nation state or limited means of representation are insufficient to account both for democratic and ecological concerns in light of trans-national environmental challenges (see Eckersley, 2020; Pickering et al., 2020; 2022).

As such, considering different *degrees of democratization* allows for different pathways for making transition governance more democratic, and raises the question of what forms of democratic institutions and procedures are required to enhance just transitions. At the same time, considering democracy as efforts to empower the *least powerful to challenge power* (cf. Smith and Stirling, 2018) also illustrates why democratization is such a tricky endeavor (see e.g. Turnhout et al., 2020). For instance, stakeholders can be ‘participating’ in transition experiments (*empowering*) but with a lack of accountabilities and meaningful deliberation this might effectively lead to oppression (*disempowering*). And what if citizens are asked to authorize the (outcomes of) transformative processes (and granting these processes legitimacy), but their perspectives and knowledge were not resembled in their design or outcomes? Such political trade-offs between elements of democratic representation beg for rethinking how democratization of transition governance can contribute to distributive, procedural, recognition and restorative justice in agri-food systems.

4. Three paradigm shifts for democratizing just agri-food transitions

Achieving agri-food transitions requires a fundamental reorganization of socio-ecological systems, challenging their underlying intents or paradigms as central levers of change (Abson et al., 2017; Göpel, 2016). In proposing a framework for a social-ecological transformation based on a comprehensive literature review and synthesis of transformation and transition research, Sievers-Glotzbach and Tschersich (2019) highlighted three incumbent paradigms⁴ that need to be overcome in order to achieve fundamental transformation processes toward sustainability. These are the ‘expert knowledge and specialization’ paradigm, the ‘materialistic culture and growth’ paradigm and the ‘control and autonomy of humans over nature’ paradigm. In the following, we will briefly present these paradigms and argue that three respective paradigm shifts are required for just agri-food transitions: (1) From expert toward pluralist understandings of knowledge; (2) from economic materialism toward post-growth strategies; and (3) from anthropocentrism toward reconnecting human-nature relationships. In a second step, we explore what democratic implications can be derived from each of these paradigm shifts for a deepening of democracy in the governance of agri-food transitions from the perspective of the four dimensions of justice.

4.1. From expert toward pluralist understandings of knowledge

The ‘*expert knowledge and specialization*’ paradigm highlights underlying beliefs about right forms of knowledge creation and use that shape our scientific and socio-political systems. It is argued that a strong authority and legitimacy is attributed to scientific expertise that is implicitly considered as the most relevant type of knowledge (see Cornell et al., 2013; Goldman et al., 2018). Moreover, there is a dominance of Western standards and their scientific institutions (especially from the natural sciences) in shaping norms of knowledge creation and evaluation, at the expense of more marginalized types of knowledge such as tacit, traditional and Indigenous knowledge. In addition, scientific systems are driven by the assumption that specialization is required to solve complex societal problems (Becker, 2010; Göpel, 2016; Norgaard, 2004). In agri-food systems, this is evidenced by the strong reliance on technological and scientific knowledge at the expense of more integrated agroecological perspectives, for instance regarding breeding or cultivation methods, in multilateral negotiations around the International Seed Treaty (see Sievers-Glotzbach, Euler, et al., 2020), or during the

⁴ The three paradigms were mainly derived from the Ecological Economics, Sustainability Ethics and transformation literatures (see Sievers-Glotzbach & Tschersich, 2019).

multi-stakeholder process at the UNFSS (see [Canfield, Duncan et al., 2021](#)). This tendency is further enhanced by technological change toward digital-based farming and genome-editing ([Clapp and Purugganan, 2020](#)). Yet, evidence from (transdisciplinary) sustainability science suggests that more integrative approaches including various disciplines and societal actors are required for fostering sustainability transformations ([Abson et al., 2017](#); [Lang et al., 2012](#); [Scholz, 2020](#)). Addressing the complexity of agri-food transitions in particular hence calls for a *fundamental paradigm shift beyond scientific expertise to incorporate pluralist understandings of knowledge*, in order to co-create solutions that are well adapted to local realities and that are both scientifically sound and socially robust ([Mauser et al., 2013](#); [Thompson and Scoones, 2009](#); [Turnhout et al., 2020](#)). This requires governance approaches that embrace pluralities of knowledge (beyond technical expertise) and allow these perspectives to interrogate the incumbencies in current governance systems. That does not imply the abandonment of technical expertise, but rather requires creatively combining different knowledges and values, such as diversities of (agroecological) farmers' knowledges, local and citizen perspectives, as well as more deeply engaging with non-Western and Indigenous perspectives⁵ (see [Jacobi et al., 2020](#); [Lam, Hinz, et al., 2020](#); [Sovacool and Hess, 2017](#)).

Democratic implications of justice analysis: In light of a multidimensional understanding of justice, a shift from expert toward pluralist understandings of knowledge has several implications for the governance of agri-food transitions. A democratization of transitions needs to address procedural justice, hence it raises questions as to whose voices, values, interests and perspectives are included, and what processes should be used so that all voices are heard and included in a just manner ([Hendriks, 2009](#); [Turnhout et al., 2020](#)). While the importance of participation and democracy is highlighted in the transition literature ([Chilvers et al., 2018](#); [Hendriks, 2009](#)), transition management approaches in practice often privilege technical or practical expertise and innovation potential, rather than democratic inclusion or representation (cf. [Hendriks, 2009](#); [De Geus et al., 2022](#)). Moreover, participation can be conceived as problematic as it can slow down or even hinder transitions. This perception of inclusivity as a potential barrier reflects the authority attributed to scientific expertise, which is perceived as being more effective in bringing about change processes ([Hendriks, 2009](#); [Goldman et al., 2018](#)). At the same time, processes of co-production in transitions are highly political and can reproduce incumbent power relationships when these are not explicitly addressed ([Pereira et al., 2020](#); [Stirling, 2015](#); [Turnhout et al., 2020](#)). For instance, problem-setting, initiation and definition of scope for participation tend to be dominated by elite actors, such as governments, large NGOs or scientists. Elite actors often contribute from their professional roles and therefore possess more time and resources than other (marginalized) actors, and thereby their arguments are more likely to be considered as valid and important ([Turnhout et al., 2020](#); [Frantzeskaki and Rok, 2018](#)). In a study on labs for agri-food system transformation, [Kok, Gjeffen et al. \(2021\)](#) highlight that 'doing inclusion' brings along the challenge to consider which actors are to be included as themselves through direct deliberation and who can be speak on behalf of 'larger groups'. Hence recognition justice is important as it highlights political differences such as positions, interests, values and beliefs between participants, or ideas of what it means to be recognized. Transitions therefore should act to empower the marginalized ([Ott and Kiteme, 2016](#)), and directly confront power asymmetries, inequality and exclusion ([Pereira et al., 2020](#)). To ensure empowering transition processes, inputs to knowledge co-creation and assessment processes should be broadened by including a diversity of perspectives, methods and knowledges, and outputs to decision-making and policy should be opened up to highlight marginalized perspectives and explore hidden and alternative pathways, rather than closing down contestation and conflicts prematurely ([Leach et al., 2010](#); [Montana, 2017](#); [Stirling, 2015](#)). In co-creating a framework to assess agri-food systems sustainability, [Jacobi et al. \(2020\)](#) show that the transdisciplinary process of co-creating knowledge between researchers and practitioners from the Global North and South in Kenya and Bolivia led to a more comprehensive interpretation of "sustainable food systems". They highlight the importance to include social-economic dimensions such as "implementation of the right to food" and "reduction of poverty and inequality", and argue this might "*help to avoid trade-offs between conflicting policy objectives*" ([Jacobi et al., 2020: 9](#)).

A deliberative take on democracy can encourage the consideration of multiple values and forms of knowledge, including the representation of nature and environmental rights ([Dryzek, 2002](#); [Eckersley, 2020](#); [Smith, 2003](#)). Moreover, it can provide space for communities to discuss issues and formulate their own solutions ([Fung and Wright, 2001](#); [Smith, 2003](#)). Considering pluralist perspectives and knowledges helps to enhance experiential and social learning to derive solutions that are adapted to diverse local landscapes, environmental conditions and cultural realities, such as food preferences or local traditions ([Cunningham et al., 2013](#); [IPES-Food, 2016](#); [Mukhovi et al., 2020](#)). In light of restorative justice, this can prevent the further loss of traditional knowledge and lifestyles and potentially contribute to restoring declining agrobiodiversity ([FAO, 2019](#)). For this purpose, it is essential to protect and enhance deliberate, inclusive spaces across various levels of governance, for instance by strengthening the UN Committee on World Food Security in light of the (threat of) corporate capture of global food governance, and enhancing the institutionalization of (human) rights-based approaches to agri-food systems (transformation) ([McKeon, 2021](#); [HLPE, 2020](#)). As indicated above, this deep form of engagement emphasized in the paradigm shift from expert to pluralist understandings of knowledge requires that actors have the means, with regard to time and (financial) resources, to meaningfully engage in participatory processes. Unequal resources otherwise reinforce existing power relations and affect possibilities for democratic engagement. Hence, this requires distributive justice and inherently links the first paradigm to a needed paradigm shift from growth and materialism toward post-growth strategies.

4.2. From economic materialism toward post-growth strategies

The '*materialistic culture and growth*' paradigm highlights that the assumption that perpetual economic growth is needed to raise

⁵ Indigenous and local knowledge can be defined as the "*cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment*" ([Berkes, 2018: 8](#)).

social welfare is dominant in societal and political discourses (Buch-Hansen, 2018; Escobar, 2015; Göpel, 2016; Jackson, 2011; van den Bergh, 2011). Yet, this assumption and the resulting growth dynamics are a major driver of massive environmental degradation, growing societal inequalities and negative impacts on wellbeing (Easterlin et al., 2010; Escobar, 2015; Jackson, 2011; Kallis et al., 2012; van den Bergh, 2011; van den Bergh and Kallis, 2012). In agri-food systems, this is reflected in the tendency to focus on productivity and increasing yields to tackle food insecurity (rather than for instance redistribution or food sovereignty), evidenced for instance by strategies around ‘sustainable intensification’ (Cunningham et al., 2013; Jackson et al., 2021; Thompson and Scoones, 2009). This has come at high costs for ecological sustainability, fails to address and even aggravates social inequity, as well as injustices and power inequalities (Clapp, 2021; Duffield, 2018; Emmerson et al., 2016). Perspectives that are critiquing this focus on growth as a core policy objective, such as de-growth and a-growth, are gaining prominence in transition studies (van den Bergh and Kallis, 2012; Vandeventer et al., 2019) and in work on the circular economy (e.g., Bauwens, 2021). Since growth dynamics are deeply embedded in socio-economic systems’ structures and intent, a growth-critical perspective requires fundamentally rethinking and ‘unmaking’ those (capitalist) structures that perpetuate unsustainable and unjust systems dynamics (Feola et al., 2021; Vandeventer et al., 2019). This requires destabilizing incumbent growth-driven industrial farming practices (see van Oers et al., 2021), also by redirecting systemic power relations that stabilize incumbent dynamics (cf. Avelino and Rotmans, 2009; Kok, Loeber, et al., 2021). It also entails exploring underlying functional and structural couplings (e.g. Schot and Kanger, 2018) that stabilize multi-system incumbencies and exist between agri-food systems, energy systems, the wider bioeconomy and mission-oriented innovation systems (Hebinck, Klerkx et al., 2021) in efforts to move toward post-growth strategies.

Democratic implications of justice analysis: A paradigm shift from economic materialism toward post-growth strategies, from a distributive justice lens, requires the ‘unmaking’ of the current institutional structures that have contributed to immense inequalities in the distribution of food resources, including seeds, land and water and that enable and reinforce pathways of enclosure and commodification (Clapp, 2021; Thompson and Scoones, 2009; Timmermann and Robaey, 2016; Tschersich, 2021). Instead, as emphasized in calls for food sovereignty, fair distribution, control and access to food resources and means of production, including seeds, land, knowledge and technologies are needed (Chappell et al., 2013; Edelman, 2014; Patel, 2009). For instance, Food and Seed Commons are discussed as anti-hegemonic, deeply democratic and empowering alternatives to the dominant neoliberal paradigm (see Sievers-Glotzbach, Tschersich, et al., 2020; Vivero-Pol, 2019). Distribution has implications for participation, as inequality in resources impacts capabilities to meaningfully engage in processes of decision-making and as it influences whose voices are more likely to be heard and accounted for (see i.e. Tribaldos and Kortetmäki, 2021). A fundamental critique and rethinking of the dynamics and structures that support market consolidation and power concentration in the food and seed sector is required, as these prevent actors excluded from powerful networks to effectively defend their positions (Clapp, 2021; IPES-Food, 2016). This includes the recognition of the rights of individuals and communities to fair participation in determining their own food and agricultural policies (Edelman, 2014; Patel, 2009; Via Campesina, 1996), and hence underlines the need to strengthen a rights-based perspective in agri-food transition governance, in particular the right to food, the rights of peasant and farmers’ rights (Claeys, 2014; Haugen, 2014).

In linking the first two paradigm shifts, a democratization entails recognizing different ways of understanding progress and imagining post-growth futures, including post-capitalist and post-development perspectives from the Global South such as *Buen Vivir* (Beling et al., 2018; Escobar, 2015). Moreover, to contribute to restorative justice, it will be essential to challenge the narrative that increasing productivity through the breeding of high-yielding varieties and their cultivation under highly intensive, industrialized conditions with the use external agro-chemical inputs is the panacea for achieving food and nutrition security (Cunningham et al., 2013; Thompson and Scoones, 2009). Approaches such as agroecology could help to re-embed agricultural cultivation in ecological systems to enhance their resilience and avoid future damages (Anderson et al., 2019; Gliessman, 2016). At the same time, a restorative perspective turns the gaze toward restoring environmental degradation caused by current industrialized agriculture, and restoring health and wellbeing for those communities most affected by incumbent economic agri-food dynamics. This includes supporting affected communities in tackling the double burden of obesity and malnutrition through changing dietary patterns (e.g., Popkin and Reardon, 2018), especially given the historically limited attention given to food environments in low- and middle-income countries (Turner et al., 2018). Importantly, Davis et al. (2022) warn that agri-food system transformation efforts should not omit to distribute the benefits to, and mitigate the burdens for small-scale producers and livelihoods of the rural poor.

4.3. From anthropocentrism toward reconnecting human-nature relationships

The ‘control and autonomy of humans over nature’ paradigm articulates a disconnection of humans from nature, for instance visible in the intense exploitation of non-renewable resources (‘biospheric disconnection’) or the spatial and temporal disconnections between (food) production and consumption, which reduce the perception of impacts of humans’ actions on ecosystems (Dorninger et al., 2017; Seppelt and Cumming, 2016). These tendencies are enhanced by processes of globalization, technological development and urbanization. In science and technology, nature is often perceived as a passive object of control and domination shaped by humans as autonomous actors (Becker, 2010; Becker et al., 2005). This dualistic depiction of humans and nature is deeply embedded in the system’s intent and has negative impacts on ecological functions (Görg et al., 2017). Accordingly, reconnecting people and nature is seen as a powerful sustainability intervention (Abson et al., 2017; Riechers et al., 2021; Sievers-Glotzbach and Tschersich, 2019). Agri-food systems in particular are highly complex systems that comprise material, ecological, geological and socio-economic dimensions at different spatial scales and levels of aggregation. It is in these systems that the fundamental entanglement of the ‘natural’ and ‘human’ worlds (or rather: the debunking of their ontological *Modernist* separation, see e.g., Latour, 2004) becomes particularly manifest (see also Bennett, 2010; de la Cadena, 2010; Tsing, 2012). Transition scholars increasingly include non-humans (such as animals, materialities and ecologies) in studying (the politics of) agri-food transitions (e.g. Contesse et al., 2021; Pigford et al., 2018;

Rosin et al., 2017; Vermunt et al., 2020), and in developing ecocentrist understandings of human-nature relationships (e.g., Huntjens, 2021). In order to overcome incumbent unsustainable system dynamics, a paradigm shift from anthropocentrism toward reconnecting human-nature relationships is hence required.

Democratic implications of justice analysis: In light of a multidimensional understanding of justice, reconnecting to nature has several implications for the governance of agri-food transitions. In terms of procedural justice, it requires ensuring that non-humans and nature are meaningfully represented in democratic governance of transitions (e.g., Eckersley, 2017), for instance by ensuring that in deliberative and co-creative (policy-making) processes there are representatives of ‘nature’ (Celermajer et al., 2021; Brown, 2018). While non-humans would not be able to participate in ‘citizen panels’ or reflexively deliberate with other stakeholders, Brown (2018: 35) for instance argues that “*just because non-humans cannot assess representative claims does not mean that they have no rights or do not deserve moral consideration*”. He argues that animal rights groups, governmental institutions or political parties could be authorized by voters to represent non-humans and speak on their behalf. In a recent contribution on agri-food Living Labs, Gamache et al. (2020) conclude that transition experimentation should also actively seek ways to include non-humans as part of their collectives, rather than as objects of experimentation. Second, recognition justice implies acknowledging the importance of nature and embracing its different intrinsic values and ecosystem services (or: ‘contributions of nature’, see Kadykalo et al., 2019) that are affected by the dynamics of incumbent (agri-food) systems (see Borie and Hulme, 2015). This could be institutionalized in formal arrangements for instance by granting legal rights to non-humans, such as the Whanganui river in Aotearoa [New Zealand] that is recognized as a living entity with its own legal rights and whereby (human) river guardians represent the river’s interests (see Argyrou and Hummels, 2019). Important too is recognizing that ecologies play a crucial role in driving agri-food transition dynamics, which might help to develop business models that contribute to nature conservation (for instance in dairy farming in the Netherlands, see Vermunt et al., 2020). Third, notions of restorative justice then emphasize the need for transition governance efforts to actively restore (ex-post) the (historical) damages done to the natural world during the Anthropocene (see Whitfield et al., 2021). Agri-food transition governance efforts could more actively draw on the resilience and adaptive capacity of nature and ecosystems by fostering nature-based solutions in urban agriculture (Artmann and Sartison, 2018) or agroecology (e.g., Anderson et al., 2019). Considering distributive justice, reconnecting human-nature relations along food system dimensions (production, consumption, retail, processing) points to the need to redesign and support sustainable supply chains and food environments. Another promising avenue is redesigning animal husbandry systems through multi-stakeholder reflexive design processes that put ecological sustainability and animal welfare at the center (Elzen and Bos, 2019).

As a consequence, agri-food policies should move beyond (elite) socio-economic interests, framings and discourses. Tools such as a sustainability compass that helps explicate and reflexively navigate food system outcomes of policy processes could help connect societal goals on health, equity, economy and the environment (Hebinck, Zurek et al., 2021). Importantly, fragmented academic and policy siloes on agri-food and the environment should be connected through *integrated food policies* (see also Candel and Pereira, 2017; Parsons and Hawkes, 2018; den Boer et al., 2021; De Schutter et al., 2020) in order to foster just transitions that reconnect human-nature relationships.

5. Discussion: Institutionalizing deep democratic governance of just transitions

We have argued that *doing* just agri-food transitions requires three paradigm shifts in transition governance efforts. Institutionalizing these efforts, however, is not straightforward. We present six concrete challenges in transition governance that our take on democracy and justice brings along. In particular, we illustrate the *balancing acts* involved in governing just agri-food transitions and point to avenues for future research.

5.1. Which justice? Balancing multiple dimensions of justice

Throughout our analysis, we have highlighted the various interlinkages between different dimensions of justice, as well as different interpretations of democratizing agri-food transition governance. For instance, enacting procedural justice requires equitable distribution of resources (time, financial, material), while recognition of rights and values and enacting restorative justice depends on the consideration of various voices, including local knowledge or non-human interests, in institutionalized procedures. Hence, there are potential synergies between justice dimensions. Yet, a multidimensional consideration of justice in the governance of agri-food transitions will likely also result in tensions and conflicts between these dimensions. For instance, what if transitions toward sustainable aquaculture (contributing to *restoring* global fish stocks) threaten capture fisheries culturally preferred and important for food and nutrition security in the Global South, thereby impairing *recognition* and *distribution justice* (Belton and Thilsted, 2014)?

At the same time, a deeper understanding of democratization also illuminates the different tensions that can exist *within* efforts to contribute to procedural justice. For instance, mere participation of stakeholders does not yet warrant their meaningful deliberation, nor does it imply that their inclusion leads to authorization of governance efforts (see for instance Musch and von Streit, 2020, cf. Cooke and Kothari, 2001). While there are valuable methodologies for designing transformative spaces and meaningfully bringing together different (both powerful and marginalized) actors in transition efforts (Pereira et al., 2018), participation of stakeholders in research, innovation and governance remains a highly political exercise subject to power imbalances (e.g., Turnhout et al., 2020; Kok, Gjeffen, et al., 2021). As such, it would be valuable to further explore how multi-actor efforts could be cognizant of and reflexive toward the balancing acts that are required to find synergies and mitigate trade-offs between dimensions of justice, especially in light of democratization ambitions.

5.2. Paradox? Balancing democratization and urgency

Second, there is a (perceived) challenge in balancing democratization of transition governance with the urgency that is involved in bringing along large-scale transformations (Skjølsvold and Coenen, 2021). The challenge at hand is that democratization requires resources, and involves time- and energy-consuming efforts in bringing together different (societal) actors around transformative agendas (see e.g., Stirling, 2008; Jasanoff, 2018; Skjølsvold and Coenen, 2021). Democratization could slow down urgently needed sustainability transformations, especially when various actor groups disagree on directions for (policy) pathways or object to specific interventions (such as a meat tax). On the other hand, a well-established insight in transdisciplinary research is that knowledge, policies and innovations that are co-produced in deliberative processes could have more societal support, enhance self-determination, lead to shared responsibilities on innovation process and outcomes, and might better address the needs of the involved stakeholders (e.g., Norström et al., 2020; Schmidt et al., 2020; Stilgoe et al., 2013; Lang et al., 2012). Furthermore, (trans)local food networks and grassroots initiatives that embrace deliberative democratic endeavors could also put forward progressive and transformative pathways (e.g., for sustainable (urban) food policies; Moragues-Faus and Sonnino, 2019). Considering this paradox, Skjølsvold and Coenen (2021: 3, building on Shove and Walker, 2007) argue that “*there is a need for more nuanced debates both about inclusivity and temporality in transitions, as well as work that do[es] not take shared social realities for granted, but actively works to produce them around specific issues*”. Further exploring how balancing and linking efforts of democratization and urgency can be promoted through transition governance might help better foster distributive, recognition and restorative justice and help unravel whether these should - and perhaps, could only - be achieved when procedural justice is also accounted for.

5.3. Governance directionalities: Beyond bottom-up and top-down

Democratizing the governance of agri-food transitions, we argued, requires finding ways to represent interests and voices beyond the experts, beyond the powerful and beyond the humans. Stimulating such broad deliberation and participation through grassroots initiatives or transition experiments raises the question on whose behalf transition governance is instigated, and who or what is accountable for the way transition processes unfold. In essence, another challenge thus refers to efforts of combining ‘bottom-up’ deliberative and ‘traditional’ representational conceptions of democracy in agri-food transitions. This is further complicated by the multi-level governance dynamics involved in coordinating transition efforts (from neighborhood councils and national parliaments to supranational organizations (e.g., the EU) and global international negotiations and institutions (such as FAO and WHO)). Considering the institutional architecture of environmental governance, Dryzek and Pickering (2017: 358) argue that the “*most promising avenue here would involve transcending the centralization/polycentricity binary*”. Schlaile et al. (2017: 7) stress that combining top-down and bottom-up approaches in transition governance also “*requires engagement with issues of directionality (what future do we want?), legitimacy (why do we want this future, who defines it?), and responsibility (transformation by and for whom?)*”. Transition scholars have pointed out that *Mission-oriented (Agricultural) Innovation Systems* and *Transformative Innovation Policies* might provide pathways forward in setting such directionalities to address societal challenges beyond traditional economic-growth focused innovation policies (Hekkert et al., 2020; Klerkx and Begemann, 2020; Schot and Steinmueller, 2018). At the same time, the role of (sectoral) policy mixes and integrated food policies remains crucial (e.g., Candel and Pereira, 2017; Kivimaa and Kern, 2016; Rogge and Reichardt, 2016). Addressing these questions hence begs reflection from transition scholarship on the role of the (liberal) state regarding setting in motion (or hindering) transitions, as well as rethinking and redesigning liberal democracies, topics relatively underexplored in the field. Yet, these are highly relevant from a justice perspective, as “*who the state serves and which interests it seeks to protect is vital to assessing the prospects of more radical and progressive interventions imagined in much transitions scholarship*” (Johnstone and Newell, 2018: 78).

5.4. Translocality: Localized interventions and global dynamics

Translocal and cross-scale dynamics in transitions are increasingly gaining attention in transition studies (e.g., Avelino et al., 2020; Coenen et al., 2012; Loorbach et al., 2020; Raven et al., 2012), and in the context of agri-food systems (e.g., Hebinck, Klerkx et al., 2021; Moragues-Faus and Sonnino, 2019; Oliver et al., 2018). The notion of scale raises several important issues for just transitions.

First, literature on transdisciplinary research and innovation emphasizes the need to better understand wider societal impacts of (often localized) projects and interventions (e.g., Schneider et al., 2019; Lux et al., 2019; Pel et al., 2020). Yet, the relation between local transition experiments, systemic (in)justice(s) and the wider political economy requires more attention (e.g., Pereira et al., 2018). Enabling just agri-food transitions will then require both local and globally coordinated policy interventions aimed at democratizing agri-food markets and their governance, in particular dismantling global market and power concentration, which have been identified as major causes of lock-in to the current industrial agricultural system (IPES-Food, 2016; McKeon, 2021). Second, connecting local interventions to global transitions is challenging in agri-food governance as interventions should, ideally, mitigate the translocal dynamics of globalized injustices at play. For instance, how should local initiatives grapple with the global destruction of ecosystems (requiring global coordination toward restorative justice)? Third, it points to translocal dynamics and trade-offs in justice across spaces and scales (see also Boillat et al., 2020; Hebinck, Klerkx et al., 2021). What if an intervention contributes to just transitional dynamics in one particular context, but leads to injustices across transnational scales? For instance: innovations to digitalize agriculture (see Klerkx et al., 2019 for a review) in one country might contribute to transnational dynamics (mobilities of workers or economic effects) negatively impacting agricultural work(ers) in other parts of the world.

Thus, agri-food transition governance should consider and anticipate the effects of interventions on both local and translocal

dimensions of justice. This requires further exploration of who (which governments, organizations, industries) should be (made and held) accountable for the translocal dynamics of (in)justice. That relates to unraveling through which mechanisms localized interventions can contribute to large-scale systemic transformations, and how to design deeply democratic global institutions to facilitate (local) transition processes (see e.g., Lam, Martín-Lopez et al., 2020; Sievers-Glotzbach and Tschersich, 2019).

5.5. How just and democratic? Combining idealism with realism

An important normative challenge refers to the degrees in which just transition dynamics can be instigated by governance efforts: is it sufficient if transition governance efforts make agri-food systems a ‘little bit’ more just? We see a challenge in combining both idealism and realism in considering just and democratic dimensions in transition governance.

First, while the importance of less tangible societal impacts (small wins, built capacities) is gaining traction in transition (evaluation) frameworks (e.g., Termeer and Dewulf, 2019; Wolfram, 2016), there is still room to explore how to account for ‘just outcomes’ of transition processes, especially as issues of social justice could otherwise remain below-the-radar (Köhler et al., 2019). Related is the challenge that small advancements toward just transitions that do not challenge underlying system structures might strengthen the system’s adaptive capacity by easing internal tensions and providing legitimacy, which can prevent more fundamental transformations (see Ingram, 2015; Sievers-Glotzbach and Tschersich, 2019; Smith, 2007). Therefore, transition processes need to be reflective of potentially reinforcing structural injustices, and aim to challenge and ‘unmake’ these incumbencies. In the context of short-term focus, effectiveness-orientation (Musch and von Streit, 2020) and *projectification* (Torrens and von Wirth, 2021) of sustainability science and policy, this raises the question of how we can realize *just* transitions in a manageable way? And, subsequently, how can the ‘*just*’ nature and outcomes of short-term projects and governance programs be meaningfully evaluated and accounted for?

Second, democratization should lead to realistic benefits and values for included (marginalized or vulnerable) stakeholders. As reflected upon by Celermajer et al. (2021), for those communities suffering from dehumanization (often with limited or no access to food, water, safety or human dignity) participating in (time-consuming) projects to co-create pathways to just and sustainable development could understandably not be a primary focus. As a consequence, there is a major responsibility for those designing and implementing transition processes to account for the needs of involved stakeholders, and to ensure that these deliver just outcomes especially for marginalized communities. This adds to the need to find ways of creatively combining idealism with practical realism in transition governance, while being attentive to how incumbent injustices might shape the potential to participate in the democratization of agri-food transition governance, and how they might influence outcomes.

5.6. The role of scientists: Within or outside incumbent scientific systems?

Finally, the authors of this paper are well aware that as researchers from the Global North, we are part of the same scientific system that has contributed to the formation of incumbent agri-food systems. As we have emphasized, just transitions will entail rethinking processes of knowledge generation and giving voice to currently marginalized perspectives and voices. Hence this requires to partially disempower (Western) scientists in favor of a strengthened engagement and consideration of various practitioners as well as scholars from the Global South. This can enhance the inclusion of decolonial perspectives and helps reaching beyond disciplinary research toward transdisciplinary research endeavors. Active engagement in transdisciplinarity requires fostering and developing different values, competences, roles and priorities for researchers and other agri-food system actors (Ingram et al., 2020, cf. Wittmayer and Schäpke, 2014). In addition, scientific systems should foster values like empathy, listening, collaborative cultures and academic self-care (Sellberg et al., 2021; Wiek et al., 2011). Scholars, however, have indicated that incumbent scientific systems often do not sufficiently support collaborative and transdisciplinary efforts required for (agri-food) transitions (e.g., Fazey et al., 2018; 2020; Kok et al., 2019). For instance, funding structures currently facilitate fragmented agri-food research and innovation across silos and disciplines (den Boer et al., 2021), and scientific systems pressure to publish in specialized academic journals that prioritize disciplinary (scientific) knowledge, language and discourses. If researchers are to meaningfully engage with just transitions in agri-food systems, it thus requires turning the gaze to how (global) scientific systems themselves are organized and linked to agri-food systems, for instance by valuing both scientific and traditional agroecological knowledge on equal footing in publications and policy recommendations (including through co-authorships with practitioners), and reforming (scientific) institutions to support such processes. Transition scholarship should hence address systemic power imbalances and strive for just scientific systems (see Lahsen and Turnhout, 2021), that in turn might contribute to more just and democratic sustainability transitions in agri-food systems.

6. Conclusion

In this paper we aimed to contribute to the debate on how transition governance efforts could be democratized in order to facilitate just transitions in agri-food systems. Our main contributions, we contend, are a further clarification of how democratization of transition governance might pave the way for enacting just transitions in agri-food systems, and an elaboration on several key challenges democratization brings along for *institutionalizing* just transition governance efforts.

We first contended that democratizing the governance of agri-food transition is inherently grounded in and related to the four interrelated dimensions of distributive, procedural, recognition and restorative justice. We argued that three paradigm shifts are required for achieving just agri-food transitions: (1) from expert toward pluralist understandings of knowledge; (2) from economic materialism toward post-growth strategies; and (3) from anthropocentrism toward reconnecting human-nature relationships. We explored what these entail for the democratization of transition governance in agri-food systems from the perspective of justice.

Enhancing democracy in transition governance hence requires to institutionalize meaningful participation of a wide variety of voices and perspectives; to move beyond incumbent market and power consolidation in the agri-food sector; and better representing nature, for instance in integrated transition policies that connect policy silos on agri-food, economy and the environment. Connecting the three paradigm shifts necessitates reaching beyond governance through single interventions or experiments toward more integrated efforts that fundamentally rethink and overcome underlying structures, power relations, as well as belief and knowledge systems that perpetuate incumbent injustices.

Yet, we argued, institutionalizing deeply democratic transition governance brings along six different challenges in: (1) balancing (trade-offs between) multiple dimensions of justice; (2) combining democratization efforts with urgencies implied by transition ambitions; (3) moving beyond the bottom-up and top-down dichotomy in setting governance directionalities; (4) navigating the translocal dynamics involved in bringing about just transitions, in particular between local interventions and global dynamics of injustice; (5) finding creative ways to combine realist and idealist demands for just transition governance; and finally, (6) rethinking the role of scientists and scientific systems in how they can best contribute to just transitions.

We believe this requires policymakers and practitioners to find synergies within, and between, the abovementioned balancing acts, and to mitigate trade-offs and dynamics of injustice that might emerge through interventions. Importantly, our work also stresses the many ambiguities involved in the relation between democratization and just transitions, which means that ‘democracy’ or ‘democratization’ alone is not the panacea for ensuring just or sustainable transformations. In that light, our work could help to explicate and navigate the abovementioned challenges in democratically governing just transitions. Furthermore, though our contribution focused explicitly on agri-food systems, we also believe that the general points raised in our discussion could inform ongoing work on governing just transitions in other socio-technical systems, such as energy, health and mobility.

We are well aware that our conceptual contribution leaves many questions unanswered, for instance regarding empirical details on context-specific dynamics of globally interconnected, but highly diverse agri-food systems, and also regarding epistemological and normative perspectives raised. We hope that others will see our contribution as an explicit invitation to further engage on this important topic, in efforts to bring along urgently needed transitions toward sustainable, healthy and just agri-food systems.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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