



# Easier said than defined? Conceptualising justice in food system transitions

Annemarieke de Bruin<sup>1</sup> · Imke J.M. de Boer<sup>1</sup> · Niels R. Faber<sup>2</sup> · Gjalt de Jong<sup>2</sup> · Katrien J.A.M. Termeer<sup>3</sup> · Evelien M. de Olde<sup>1</sup>

Accepted: 19 June 2023 / Published online: 27 June 2023  
© The Author(s) 2023

## Abstract

The transition towards sustainable and just food systems is ongoing, illustrated by an increasing number of initiatives that try to address unsustainable practices and social injustices. Insights are needed into what a just transition entails in order to critically engage with plural and potentially conflicting justice conceptualisations. Researchers play an active role in food system transitions, but it is unclear which conceptualisations and principles of justice they enact when writing about food system initiatives. To fill this gap this paper investigates: Which conceptualisations of justice emerge from the literature related to food system initiatives and which principles of justice do authors use? We developed an initial framework for which we drew on political philosophy literature. We then undertook an extensive review of the food system transitions literature using this framework and were able to identify a range of recognition, distributive, and procedural justice conceptualisations and associated principles of justice. Recognised as subjects of justice were those with a particular role in the food system, people who are marginalised, Indigenous communities, those with experiences of negative consequences of the food system, future generations, and nonhumans. The identified conceptualisations and the developed framework can be used by those involved in food system initiatives to reflect on how they conceptualise justice. We challenge them to be more explicit about who they do and do not recognise as subjects of justice and which principles of justice they use. Such clarity is needed to reflexively enact a just transition towards sustainable and just food systems.

**Keywords** Just transition · Food system · Justice · Principles of justice · Environmental sustainability · Agriculture

## Introduction

The transition towards sustainable and just food systems is underway, illustrated by an increasing number of initiatives that try to address unsustainable practices and social injustices. These initiatives differ in how they frame food, engage with food politics, and how radically they want to

change the global neoliberal economy and corporate food regime (Holt-Giménez and Shattuck 2011; Alkon 2014). In contrast to initiatives rooted in food security and market-based utilitarian assumptions about food, food justice and food sovereignty movements centre collective rights and social justice (Constance 2022). Many such initiatives aim to contribute to food justice defined by Gottlieb and Joshi

---

✉ Annemarieke de Bruin  
annemarieke.debruin@wur.nl

Imke J.M. de Boer  
imke.deboer@wur.nl

Niels R. Faber  
n.r.faber@rug.nl

Gjalt de Jong  
g.de.jong@rug.nl

Katrien J.A.M. Termeer  
katrien.termeer@wur.nl

Evelien M. de Olde  
evelien.deolde@wur.nl

<sup>1</sup> Animal Production Systems group, Wageningen University & Research, De Elst 1, Wageningen 6708WD, the Netherlands

<sup>2</sup> Centre for Sustainable Entrepreneurship, University of Groningen, University Campus Fryslân, Wirdumerdijk 34, Leeuwarden 8911CE, the Netherlands

<sup>3</sup> Public Administration and Policy group, Wageningen University & Research, Hollandseweg 1, Wageningen 6706KN, the Netherlands

as “ensuring that the benefits and risks of where, what and how food is grown and produced, transported and distributed, and accessed and eaten are shared fairly” (Gottlieb and Joshi 2013, p.6). However, ideal sets of principles associated with food sovereignty and food justice are translated into practice in real life (Patel 2009; Cadieux and Slocum 2015). Initiatives are often restricted by the neoliberal economy that shapes the global food system and frames food as a commodity (Holt-Giménez and Shattuck 2011; Agyeman and McEntee 2014; Coulson and Milbourne 2021; Jackson et al. 2021). Food justice can then mainly be concerned with offering market-based solutions focussed on consumer choice and individual responsibility without addressing underlying causes of social inequalities (Holt-Giménez and Shattuck 2011; Agyeman and McEntee 2014; Jackson et al. 2021). There is a risk that initiatives reproduce unjust outcomes such as poverty and income inequality (FAO et al. 2021) and/or procedural injustices such as the concentrated power in the agri-food sector (IPES-Food 2017), or create new injustices (Hebinck et al. 2021; Zurek et al. 2021).

In the context of food and agricultural systems justice is a malleable concept (Bedore 2010) as it can be interpreted in many ways. What is considered fair or just depends on people’s underlying values, normative ideals, and priorities (Coulson and Milbourne 2021). For example, what a fair distribution and fair decision-making process is and which principles of justice are relevant to assess outcomes or processes depends on who is asked. Western political philosophers developed different theories to describe ideal conceptualisations of justice and associated principles of justice to debate whether a situation or claim is (un)just. These include egalitarian, rights-based, and desert-based theories and associated principles (Miller 2017). In food system transitions researchers play an active role through their involvement in, analysis of, and writing about food system initiatives (Allen 2008; Whitfield et al. 2021). In their work they consciously or unconsciously include and exclude certain justice conceptualisations, which influences how situations or claims are debated. Words are used such as justice, fairness, and equity, but what is meant by these is not always clear and always up for debate. It seems to be easier said than defined. Authors have called for more clarity about what is meant by just, fair, or equitable whilst recognising the politics at play as the food system transition unfolds (Meadowcroft 2009, 2011; Leach et al. 2020; Hebinck et al. 2021). The aim of this paper is to operationalise justice in the context of food system transitions that are enacted in real life, building on existing work from political philosophy, politics of justice in food and agricultural systems, and the work on justice in sustainability transitions. We specifically draw on the concepts of ‘just transitions’ and the ‘justice multiple’.

Concepts and frameworks exist to help recognise and debate conceptualisations of justice. The concept of ‘just transitions’ was developed in the energy and climate contexts (Newell and Mulvaney 2013; Heffron and McCauley 2018). It is rooted in socio-technical transitions literature and the multi-level perspective on transitions (Geels and Schot 2007), whilst recognising the politics of the transition process itself (Meadowcroft 2009), and the environmental justice implications of transitions (Schlosberg 2007a). It considers distributive justice of costs and benefits of the transition, specifically recognising those who are or will be most negatively affected by the transition, and the procedural justice of decision-making during the transition. The few papers that have so far applied a ‘just transitions’ lens to food system transitions recognise that the costs and benefits of the transition process itself are not equally distributed across actors within the food system and across time and space (Hastings et al. 2021; Kaljonen et al. 2021; Tribaldos and Kortetmäki 2022). The concept of the ‘justice multiple’ developed by Coulson and Milbourne (2021) brings together several strands of food justice literature. It calls for the recognition of plural, multi-scalar, temporal and more-than human conceptualisations of justice in food systems.

However, what both the just transition and justice multiple concepts lack is clarity about which principles of justice are relevant. Principles of justice are critical as they are used to assess whether certain situations or claims are (un)just. They are the operationalisation of conceptualisations of justice. Tribaldos and Kortetmäki (2021) do refer to principles in relation to what they consider an ideal conceptualisation of a just food system transition. However, this creates the challenge of having to translate such ideal principles into practice in real life. The risk is that not all principles are adopted and existing injustices are reproduced or new injustices are created (Patel 2009; Cadieux and Slocum 2015; Hebinck et al. 2021). Other authors have analysed conceptualisations of justice in practice with a subset of actors, for example as used by activists (Coulson and Milbourne 2021), the media (Moragues-Faus 2017), or by farmers (Puupponen et al. 2022). As yet, no analysis has been done of the conceptualisations and principles of justice used by researchers when writing about food system initiatives. This is an important gap in the literature when recognising the active role played by researchers in food system transitions.

This paper therefore investigates: Which conceptualisations of justice emerge from the literature related to food system initiatives and which principles of justice do authors use? This allows us to understand how authors play a role in shaping (just) transitions of food systems towards a just and sustainable future. We developed an initial framework for which we drew on political philosophy to further define the three justice perspectives that are part of the ‘just

transitions' concept (Newell and Mulvaney 2013) and are central to justice conceptualisations in food politics (Coulson and Milbourne 2021), namely recognition, distributive and procedural justice. We then undertook an extensive review of the food system transitions literature using this framework. This analysis serves two functions. Analytically, the identified conceptualisations and associated principles can support current and future initiatives to debate the justice implications of their transition process. Normatively, it widens the debate about justice in food system transitions and challenges researchers to be more explicit about which conceptualisations and principles they use.

In the next section, we ground our conceptual framework in political philosophy of recognition, distributive, and procedural justice and their interrelations in food system transitions. After that we describe the methods used and present the conceptualisations of justice and associated principles that emerged from the literature in the results section. The discussion then reflects on the multiple ways in which the framework and emerging conceptualisations can support reflexivity and relates the emerging conceptualisations to wider debates on marginalisation of people, life worlds, and non-Western and Indigenous conceptualisations of justice. The paper concludes with a call for inclusive and reflexive just transitions towards sustainable and just food systems.

## Conceptual grounding

In this section we draw on political philosophy to further define the three justice perspectives, namely recognition, distributive, and procedural justice, and their interrelations. We then present our framework to analyse conceptualisations of justice and associated principles of justice.

### Recognition justice

The first perspective is recognition justice. It raises the question: Who is recognised as subjects of justice to whom others have an obligation (Stumpf et al. 2015; Miller 2017)? It is concerned with treating those who are considered part of the moral community equally and respectfully. Whether deliberate or not, misrecognition or a lack of recognition of individuals or groups is an injustice in and of itself (Schlosberg 2007a). It harms people's identity and hinders, or even harms, people's relationship with themselves. As a consequence of certain framings of problems and solutions people can be rendered invisible (Coulson and Milbourne 2021). Where Western philosophers initially considered humans to be the main subjects of justice, recent work has argued that the moral community should be extended to include nonhumans. Nussbaum (2007) has argued that we have an obligation towards individual sentient animals

and their capabilities and George (1992) argued that not only animals, but also plants should be recognised as part of the moral community in sustainable agriculture as they also have welfare interests. From Schlosberg's perspective (2007b), which underpins environmental justice literature, humans have an obligation towards the flourishing of ecosystems when we recognise our interdependence. Multi-species justice then argues that humans have an obligation to nonhumans as humans interrelate and affect nonhuman dignity (Fulfer 2013). In this justice perspective nonhumans include not only individual animals, plants, or ecosystems, but "species, microbiomes, ecosystems, oceans, and rivers - and the interrelations among and across them" (Celermajer et al. 2021, p. 127).

In addition to humans and nonhumans as subjects of justice we also need to consider the spatial-temporal nature of justice (Coulson and Milbourne 2021). People have an obligation to humans and nonhumans who live here and now as well as to those who occupy a different location in space or a different position in time. The acknowledgement of an obligation towards people elsewhere is also referred to as cosmopolitan justice or intragenerational justice opposed to intergenerational justice to refer to future generations (Stumpf et al. 2015; Miller 2017; Kaljonen et al. 2021). However, the temporal dimension of justice relates not only to the future. It also concerns itself with the past. Historic injustices and the misrecognition or lack of recognition of these injustices continue to influence opportunities of certain communities today (Whitfield et al. 2021). Restorative justice calls for the recognition of these historic injustices and how they have affected and continue to affect communities (Heffron and McCauley 2018; Kaljonen et al. 2021).

### Distributive justice

The second perspective, distributive justice, is concerned with 'just' distributions of goods, burdens, services, and non-material aspects of life (Miller 2013). In food systems it for example relates to the distribution of food security (Loo 2014), negative environmental impacts of the food system, or the distribution of labour related injustices such as worker exploitation (Glennie and Alkon 2018). Gottlieb and Joshi (2013) characterised food justice mainly as a distributive issue. Unequal, but more importantly disproportionate concentrations of costs and benefits to certain people and geographic areas have been a key part of environmental justice analyses since the beginning (Agyeman et al. 2016). While inequality can be a source of injustice, it is important to recognise that not all unequally distributed goods and services are matters of justice. Some aspects related to the food system, such as different soil types and locations of water bodies, are concentrated in certain geographic areas.

As these distributions are not caused by a human agent they do not constitute a matter of justice (Miller 2013). They can however become part of a situation that is a matter of justice when people for example treat these resources unfairly and/or distribute resulting costs and benefits unfairly. Miller (2013) defines a situation as a matter of justice when actions or inactions of an agent, which can be an individual or an institution, result in the agent not fulfilling their obligation towards those within the situation. The obligation is to give everyone, who is recognised as a subject of justice, their due (Miller 2017). This is not only in relation to new distributions and those that result from the transition process (Newell and Mulvaney 2013). It also relates to historic distributions of costs and benefits (Whitfield et al. 2021). Restorative justice argues that historic unjust distributions of costs and benefits need to be accounted for and/or compensated (Kaljonen et al. 2021; Tschersich and Kok 2022).

### Procedural justice

The third perspective is procedural justice which relates to who is or ought to be included or excluded in decision-making processes, how power is distributed amongst stakeholders, and how decision-making happens and can be critiqued (Loo 2014; Coulson and Milbourne 2021; Whitfield et al. 2021). Food system examples of procedural injustice are the large concentrations of power in a small number of agri-food actors (IPES-Food 2017) or the role played by vested interests in developing agricultural and food policies (Lang and Barling 2012). This perspective is included in environmental justice and the just transitions framework, but in comparison to distributive justice Loo (2014) found that this perspective was less developed in the context of food justice. It is mentioned in more theoretical papers on food system transitions (Kaljonen et al. 2021; Tribaldos and Kortetmäki 2022), but is yet to be further problematised and developed. One contribution to this is the work of Tschersich and Kok (2022) who explore the political nature of democratising food system transitions.

In terms of who ought to be included, because they are often excluded from decision-making processes in food system transitions, theoretical papers refer to people, communities, or countries who are marginalised due to their race, gender, class, income level, migrant status, or role in the food system (Biermann et al. 2012; Loo 2014; Glennie and Alkon 2018). Certain framings of problems and solutions can have this effect as well. For example, farm workers in conventional agriculture have been rendered invisible by alternative food networks (Coulson and Milbourne 2021). Similarly, powerful actors consider certain knowledges and understandings as having less or no legitimacy in decision-making and are therefore ignored (Biermann et al. 2012;

Tschersich and Kok 2022). This marginalisation interconnects with people's access to decision-making processes and is mediated by their ability and capacity to participate (Biermann et al. 2012; Loo 2014; Tschersich and Kok 2022). Loo (2014) showed how distributive and procedural injustices faced by farm workers and marginalised communities were a result of underlying participatory disparities. With less resources to participate it is more difficult to gain access to and understanding of the information on which decisions are based. This, in turn, makes it harder for marginalised communities to hold decision-makers to account (Biermann et al. 2012).

Participation is a key part of procedural justice, but unequal power dynamics mean that participation alone is not enough to ensure stakeholders have a voice and can influence the procedural outcome (Turnhout et al. 2020). The food system can be considered a relational lock-in in which powerful actors try to keep the system in its current state (van Mierlo and Beers 2020). However, power dynamics are not set in stone and less powerful actors can be empowered to take control of decisions through inclusive governance arrangements and participatory policy-making (Jasanoff 2018; Termeer et al. 2018; Coulson and Milbourne 2021). Despite this, the risk remains that those who are powerful and able to participate easily co-opt and/or de-politicise participatory processes (Coulson and Milbourne 2021).

### Interrelations between the three perspectives

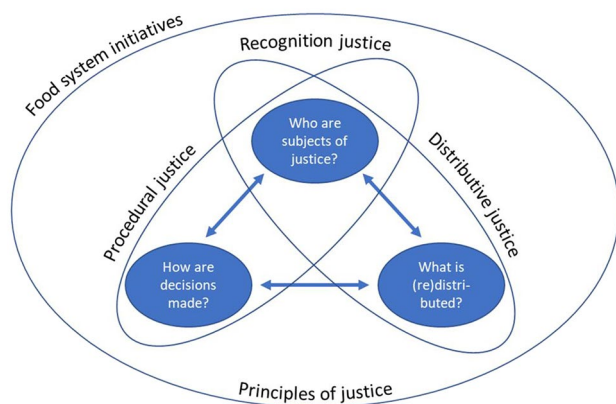
As already alluded to in the previous sections, recognition justice is part of both distributive and procedural justice. In addition, those experiencing distributive injustices tend to have little influence in decision-making processes. Environmental justice recognises spatial concentrations of costs and benefits and their interlinkages with people's concentrations of power, oppression, and/or marginalisation (Schlosberg 2007a; Agyeman et al. 2016). Those most affected by food system transitions are likely to be those with least power to influence decision-making processes (Newell and Mulvaney 2013). However, a fair process does not necessarily result in fair outcomes. Miller (2013) points out that distributive, outcome-based theoretical conceptualisations of justice say little about the processes by which such distributions should come to be. Similarly, process-based theoretical conceptualisations of justice are concerned with decision-making processes, but give little attention to the resulting outcomes. It is important in a just transition to not only look at distributive and procedural justice issues as separate matters of justice, but also as interrelated matters of justice.

How can we then analyse in what way those involved in food system transitions conceptualise justice? We developed

a framework which is visualised in Fig. 1. The just transitions concept offered a starting point with the three perspectives of recognition, distributive, and procedural justice. Based on the political philosophy literature we identified analytical questions for each perspective. Related to recognition justice: Who are recognised as subjects of justice? Related to distributive justice: What is (re)distributed between whom? And related to procedural justice: How are decisions made and who is involved? With these questions we recognise that at the heart of all three justice perspectives are those considered to be the subjects of justice. That said, whilst acknowledging that procedural and distributive justice conceptualisations interrelate through recognising certain subjects of justice, we do not see a separate type of justice conceptualisation related to the type of decision-making process and what is (re)distributed. What is (re)distributed can be influenced by the decision-making process and vice versa, but we consider that this is always mediated through who is involved or affected by processes or distributions. In addition to the three justice perspectives, we also explicitly recognise principles of justice. We do this because whether recognition, distributive, and/or procedural implications of food system initiatives are considered (un)just depends on the principles of justice used by those analysing the initiatives. This is further explored in the next section.

### Principles of justice and contextual justice conceptualisations

As mentioned in the introduction different people will consider different implications of initiatives just. It depends on people's priorities, influenced by their framing of food as either a commodity, right, or common good (Jackson et al. 2021) as well as their underlying values and normative ideals. In political philosophy different theories have developed principles of justice. Miller (2013) summarises that



**Fig. 1** Our framework to analyse conceptualisations of justice, the interactions between them, and the principles of justice that are used to describe and discuss implications of food system initiatives

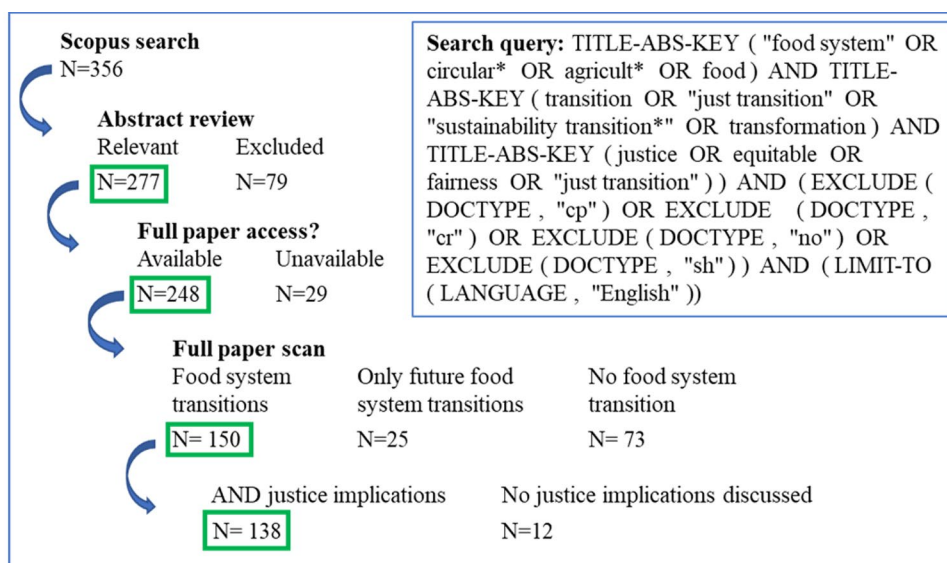
principles can be based on equality (e.g. everyone should have equal access to good food), need or rights (e.g. due to health reasons some people should have more access to good food) or merit or desert (e.g. those who work harder should have more access to good food). Western philosophers including Ronald Dworkin, Elizabeth Anderson and John Rawls developed equality principles; John Rawls, Amartya Sen, and Martha Nussbaum are some of the philosophers who theorised right-based principles; and John Locke, David Miller, Julian Lamont, and Wojciech Sadurski are some who developed desert-based principles. The applicability of such principles of justice can be viewed in two ways: universalism and contextualism (Miller 2013). Universalism views that certain principles of justice are universally applicable, independent of context. For example egalitarianism holds that the principle of equality is relevant in all contexts. Food framed as a human right is an example of being universally applicable to all people. Contextualism suggests that in certain contexts certain principles of justice are relevant whereas others are not. Here we reframe this as a justice conceptualisation: that in certain conceptualisations certain principles of justice are relevant. Miller (2013) argues that there is limited variation of contexts and that certain “principles are systematically related to contexts of application” (Miller 2013, p. 62). In this paper we adopt a contextualised approach to principles of justice, which means our analysis can reveal the limited variation of justice conceptualisations and associated principles of justice as used by authors in papers describing food system initiatives.

### Methods

To analyse emerging conceptualisations of justice in the food system transitions literature we undertook an extensive literature review. A search was carried out in Scopus on 19 May 2021 for papers that covered justice related issues of food system transitions (Fig. 2). Search terms related to food and agriculture and the more recent work on circular food systems (“food system”, food, agri\* and circular\*), justice (justice, equitable, fairness, “just transition”), and transitions (transition, transformations, “sustainability transition\*”, “just transition”). We choose to do this search in Scopus as this search engine extensively covers social science and food system related journals and publishers. To facilitate data analysis we excluded publications in other languages than English.

The search resulted in 356 papers. Fig. 2 visualises the process to select relevant references. First, we reviewed abstracts to assess whether papers seemed to discuss food system transitions and justice implications. A total of 277 references were left. Of these, 29 papers were unavailable,

**Fig. 2** The search query used in Scopus on the 19<sup>th</sup> of May 2021 and the number of publications which were included and excluded in each step of the literature selection



leaving 248 full papers to be scanned. The scan aimed to see if the references actually discussed food system transitions and justice implications. An important inclusion criterion was that the references described actual justice implications of past or ongoing initiatives and not only an ideal future vision of what ought to happen in food system transitions to make them just and sustainable. Papers that only debated the current or historic food system without reference to an actual food system initiative were excluded, as were papers that only discussed non-food-related transitions. Of the 248 references, 150 papers discussed food system transitions. Another 25 references only described future visions of food system transitions and were therefore also excluded from further analysis. Finally, of the 150 references 12 papers did not actually discuss justice implications of initiatives, resulting in 138 relevant publications. The full list is available in the [supplementary information](#).

The 138 relevant references published between 1992 and 2021 mainly include journal articles, but also a small number of books and book chapters. The increasing number of publications since 2017 indicates this is a developing body of literature. When looking at the geographic spread of the publications, 85% of the papers were written by first authors based at institutions in North America (mainly the USA) and in European countries (predominantly Belgium, France, and Italy). Articles were published in a wide range of journals with the highest occurrence in the journals *Sustainability* (13), *Agriculture and Human Values* (10), *Geoforum* (6) and *Journal of Rural Studies* (5).

We then analysed the publications using our framework as described in Fig. 1. This helped us to identify which (1) recognition, (2) distributive, and (3) procedural justice conceptualisations and (4) principles of justice authors used to describe and discuss justice implications of food system

initiatives. In the first analytical coding step, text relevant to each of these four elements was colour coded within Adobe Acrobat Reader. We focused on the parts of the papers in which authors defined what they meant by justice and the parts in which they discussed justice implications, whether in the results, discussion, or conclusion sections. In the second analytical coding step, these colour coded pieces of text were coded in more detail. We recorded emerging themes for each of the four elements and their presence in papers in MS Excel. This second coding step resulted in a saturation of emerging themes when no new conceptualisations or principles of justice were identified in additional papers.

## Results

In this section we first provide an overview of the types of initiatives described in the publications. We then present the recognition, distributive, and procedural conceptualisations of justice and associated principles of justice and their interrelations that emerged from the analysis of the food system transitions literature. In the last part we describe the justice discourses that underpinned the conceptualisations of justice.

### Food system initiatives described in the publications

The actual food system initiatives described and discussed in the papers took place across the world and ranged in scale from the very local, in terms of small-scale urban gardens, to city wide food policy councils, and from regional alternative food networks to efforts to change global UN-level processes. The publications framed these initiatives

as reformist, progressive, or radical (Holt-Giménez and Shattuck 2011). The fast majority were framed as part of food justice or food sovereignty movements that aimed to counter the corporate food regime at different scales. Several authors were critical of the radical nature of initiatives and the differences between the ideal and what happened in practice, for example with organic agriculture (Darnhofer 2014), agroforestry (Ollinaho and Kröger 2021) and food sovereignty (Hopma and Woods 2014). They found that initiatives had ignored certain principles or that initiatives had been co-opted by the corporate food regime.

The publications all included reflections on the justice implications of initiatives, but it was not always clear whose perspectives were included. Some authors referred to interviews with participants (Aptekar and Myers 2020; Belda-Miquel et al. 2020; Nicol and Taherzadeh 2020), but also interpreted these findings in light of their own perspectives. As these are academic publications, authors placed their reflections in context of theoretical perspectives they had selected from the wider literature. Therefore, we consider the conceptualisations of justice as described in the following sections as those of the authors of the publications.

### Recognition conceptualisations of justice

Just food system transitions start with identifying who we recognise as subjects of justice. The review identified six different groups of humans and nonhumans (see Table 1). The related principle of justice was respect for the voices and agency of these groups. The first group is categorised as food system actors or *people with a particular role in the food system*. This included producers (Darnhofer 2014; Belda-Miquel et al. 2020; Ollinaho and Kröger 2021), those in the processing industry (Zimmerer et al. 2020), migrant workers across the food system (Dale 2020; Zimmerer et al. 2020), and consumers (Smith and Patterson 2018; Bui et al. 2019). Papers described how these food system actors played a role in making the food system more just or how they continued to experience injustices. Few authors

recognised all farmers, including what Dale described as “so-called ‘conventional farmers’” (Dale 2020, p. 644) and the costs they will have to carry in the transition. A second group brings together *people who are marginalised* within the food system due to gender, race, and/or income. Papers described how women specifically experienced injustices in the food system, but were also agents of change (Huyer 2016; Zhang 2020; Trevilla Espinal et al. 2021). Papers also discussed injustices faced by people who experienced racism and/or discrimination within the food system, specifically people of colour (Aptekar and Myers 2020). Another marginalised group recognised by the papers were people with limited access to resources and food, partly due to having little income (Grote et al. 2021; Zollet et al. 2021). In contrast, Hale et al. (2021) argued that it was white, male, conservative identities that were unrecognised in food system transitions and who should be recognised as subjects of justice.

A third group recognised as subjects of justice are *Indigenous communities* (Zimmerer 2015; Pimbert 2017; Beamer et al. 2021; Trevilla Espinal et al. 2021), often in relation to food sovereignty or the lack thereof. A fourth group are *people with experiences of negative consequences of the food system*, who carry the costs or burdens of the food system. This included communities and people in certain geographic areas who suffered, for example, from the consequences of eutrophication (Kjellén 2018; Petoskey et al. 2021). It is important to acknowledge that these four groups often intersect with each other. People’s role in the food system and their intersectional sources of marginalisation intersect and Indigenous communities and marginalised communities also (have) experience(d) disproportionate negative consequences of the food system (Kjellén 2018).

Two other groups identified in the review are *future generations* and *nonhumans*. Papers recognised the obligation of current generations towards future generations as subjects of justice (Kalfagianni 2015; Beamer et al. 2021; Zollet et al. 2021). Nonhumans that were considered subjects of justice included farm animals and biodiversity, as well as natural resources such as land and water (Kjellén 2018; Clay et al. 2020). Papers discussed the rights of nature (Zimmerer 2015) and the implications of initiatives on for example animal welfare (Darnhofer 2014). The review shows that a wide range of subjects of justice are recognised by the papers.

Additionally, some papers reflected on which types of knowledges needed to be better recognised as part of decision-making processes, including traditional, experiential, and Indigenous knowledges. This was defined as cognitive justice and is specifically relevant in relation to procedural justice (Meek and Tarlau 2016; Pimbert 2017). Interestingly, those who (will) carry the costs of the transition, a

**Table 1** Subjects of justice identified in conceptualisations of justice in the food system transitions literature

Subjects of justice
People with a particular role in the food system (producers, those in the processing industry, migrant workers across the food system, and consumers)
People who are marginalised (due to their gender, race, and/or income, and those with limited access to resources)
Indigenous communities
Those with experiences of negative consequences of the food system
Future generations
Nonhumans (farm animals, biodiversity, and natural resources such as land and water)

group specifically recognised in the work on just transitions (Newell and Mulvaney 2013; Heffron and McCauley 2018), were rarely mentioned. The papers mainly focussed on the justice implications of initiatives for those groups who have suffered or still suffer injustices within the food system. Next, we present the conceptualisations of justice in which distributive justice issues played a role.

## Distributive conceptualisations of justice

As explained before distributive conceptualisations of justice can be described by what is (re)distributed between those who are considered to have an obligation towards subjects of justice. Table 2 presents the distributive conceptualisations of justice that emerged from the literature and their associated justice principles. One conceptualisation

frames food as a universal human right and therefore equal to all, albeit contextualised to local food cultures. As Routledge et al. (2018, p. 81) defined it: “People at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life”. Other distributive issues the review identified related to food affordability, viable livelihoods of food producers, good working conditions, health and wellbeing, negative environmental impacts of the food system, availability of natural resources to produce food, and the capacity to participate in the transition. These were (re)distributed between actors across the food system, between people with privilege who had access to resources and marginalised people with less or no access, between humans and nonhumans, or between current and future generations. Some papers recognised how historic

**Table 2** Overview of conceptualisations of justice and associated principles of justice that emerged from the food system transitions literature in which distributive justice played a role

What is (re)distributed?	Between whom?	Principles of justice	Literature examples
Food security in terms of food accessibility	<ul style="list-style-type: none"> <li>• Universal principle</li> </ul>	<ul style="list-style-type: none"> <li>• Equality with contextual application to recognise different food cultures</li> </ul>	Routledge et al. 2018
Food security in terms of food affordability	<ul style="list-style-type: none"> <li>• From people with privilege to marginalised people (who are food insecure)</li> </ul>	<ul style="list-style-type: none"> <li>• Solidarity</li> </ul>	Andrée et al. 2017; Belda-Miquel et al. 2020
Viable livelihoods in terms of <ul style="list-style-type: none"> <li>• Resource ownership - including land</li> <li>• Opportunity to engage in agriculture</li> <li>• Opportunity to market produce in urban areas for local farmers</li> </ul>	<ul style="list-style-type: none"> <li>• From people with privilege to marginalised people (who do not own or have access to resources)</li> <li>• From consumers to producers (incl. small-scale producers)</li> <li>• From producers to nonhumans</li> </ul>	<ul style="list-style-type: none"> <li>• Equality of opportunity</li> <li>• Principle of contribution</li> <li>• Solidarity through shared costs and shared risks</li> </ul>	Rossi 2017; Bui et al. 2019; Nicol and Taherzadeh 2020; Noll 2020
Good working conditions	<ul style="list-style-type: none"> <li>• From other food system actors to food system workers</li> <li>• From people with privilege to marginalised people (e.g. with migration background)</li> </ul>	<ul style="list-style-type: none"> <li>• Equality</li> <li>• Respect</li> <li>• Recognition</li> <li>• Legality</li> </ul>	Dale 2020; Zimmerer et al. 2020
Health and wellbeing in terms of <ul style="list-style-type: none"> <li>• Reduction of negative environmental impacts</li> <li>• Environmental quality of natural resources</li> <li>• Opportunity to behave naturally</li> </ul>	<ul style="list-style-type: none"> <li>• From producers to nonhumans (inc. farm animals, wildlife, soil, and water)</li> <li>• From producers to consumers</li> </ul>	<ul style="list-style-type: none"> <li>• Solidarity</li> <li>• Conviviality</li> <li>• Respect</li> <li>• Principle of contribution</li> <li>• Principle of need</li> <li>• Principle of compensation</li> </ul>	Dumont et al. 2018; Calisto Friant et al. 2020; Clay et al. 2020; Dale 2020; Beamer et al. 2021; Dumont et al. 2021; Hale et al. 2021
Negative environmental impacts of the food system in terms of <ul style="list-style-type: none"> <li>• Benefits received due to spatial and/or temporal externalising of negative impacts</li> <li>• Costs associated with addressing or compensating negative environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>• From those who benefitted from the food system to those who experienced costs and burdens</li> <li>• From countries/polluters that exported externalities to those that suffered from those externalities</li> <li>• From future generations to present generations</li> </ul>	<ul style="list-style-type: none"> <li>• Principle of compensation</li> <li>• Principle of polluter pays</li> <li>• Targeted universalism: “the first and greatest benefits of a circular economy go to those who have been most negatively impacted by the extractive nature of our current economy” (Petoskey et al. 2021, p. 15)</li> </ul>	Kjellén 2018; Stringer et al. 2020; Petoskey et al. 2021
Availability of natural resources to produce food	<ul style="list-style-type: none"> <li>• From present generations to future generations</li> </ul>	<ul style="list-style-type: none"> <li>• Sufficiency</li> </ul>	Calisto Friant et al. 2020
Capacity to participate in the transition in terms of <ul style="list-style-type: none"> <li>• Access to training opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• From trainers to current and new food producers</li> </ul>	<ul style="list-style-type: none"> <li>• Equality of opportunity</li> </ul>	Aptekar and Myers 2020; Nicol and Taherzadeh 2020; Rowan and Casey 2021



injustices reverberated into the current day. For example, historic unequal distributions of land are part of the reason why land was inaccessible to new entrants (Nicol and Taherzadeh 2020). In terms of principles of justice, Table 2 shows that papers included egalitarian, rights-based, and desert-based principles.

Although presented separately, initiatives often held more than one of these distributive conceptualisations as activities affected other distributions directly or indirectly. For example, Rossi (2017) describes initiatives that worked with farmers to develop more viable livelihoods through risk sharing and increased food prices that offered farmers higher levels of income. In that case the costs and risks of production were redistributed between producers and consumers. Consumers who were willing to pay the increased prices followed the desert-based principle of contribution, recognising the contributions made by the producers, and the principle of solidarity through sharing costs and risks with the farmers. However, the increase in price then had a knock-on effect on food affordability, especially for consumers with low incomes. Some initiatives consciously made an effort to redistribute food affordability based on the principle of solidarity between consumers who could afford to pay more and consumers with low income through subsidising food purchases (Zollet et al. 2021). Others, however, resulted in worse food affordability for people on low income (Lamine et al. 2019). This shows how distributive conceptualisations and principles of justice can complement or conflict with each other.

### Procedural conceptualisations of justice

In comparison to distributive implications of food system initiatives, fewer papers discussed procedural implications. The review resulted in three procedural justice conceptualisations that were all centred around the idea of participation in decision-making processes (Table 3). The first was that of *food democracy*, especially deliberative democracy

(Clark et al. 2021; Sanderson Bellamy et al. 2021). Examples of inclusive governance arrangements that were set up to enable food democracy were food policy councils (Lacy 2000), food hubs that linked producers with consumers (Bui et al. 2019), and cooperatives that brought producers together to support collective action (Levkoe 2011). Such arrangements allowed for more participation of a diverse set of stakeholders based on the principle of equal opportunity to influence decision-making. The second conceptualisation is interconnected with democracy: *food citizenship*. This conceptualisation emphasised a more active role of consumers in the food system through shared responsibility (Rossi 2017; Lamine et al. 2019). A third conceptualisation was that of *food sovereignty* (Meek and Tarlau 2016; Dale 2020; Zollet et al. 2021). In this conceptualisation the aim of participation was the empowerment of people and their autonomy through democratic processes. Authors referred to the principles associated with the social movement of Food Sovereignty (La Via Campesina 1996), specifically in relation to Indigenous communities and alternative food system networks at local or regional scale (Pimbert 2017; Belda-Miquel et al. 2020). They discussed the redistribution of power to those who grow and consume local food (Smith and Patterson 2018) and the concept of subsidiarity in which decisions are taken at as local a scale as relevant to what is discussed (Anderson et al. 2019). In terms of principles of justice, Table 3 shows that papers included egalitarian and rights-based principles. Authors did not use desert-based principles in relation to procedural justice.

In these conceptualisations the subjects of justice were the groups described in Table 1 except for future generations and nonhumans. These two groups were recognised by authors as affected by decision-making processes, but were not framed as actual participants. Authors recognised that participation of people in decision-making processes, as well as the power they had to influence decisions, was mediated by the capacity of people to participate in the first place. Access to funding (Canfield et al. 2021), time

**Table 3** Overview of conceptualisations of justice and associated principles of justice that emerged from the food system transitions literature in which procedural justice played a role

How are decisions made?	With whom?	Principles of justice	Literature examples
Food democracy	Food system actors	<ul style="list-style-type: none"> <li>• Equal opportunity to participate</li> <li>• Accountability</li> <li>• Transparency</li> <li>• Legitimacy</li> </ul>	Lacy 2000; Bui et al. 2019; Aptekar and Myers 2020; Clark et al. 2021; Sanderson Bellamy et al. 2021
Food citizenship	Consumers	<ul style="list-style-type: none"> <li>• Equal opportunity to participate</li> <li>• Accountability</li> <li>• Transparency</li> <li>• Legitimacy</li> </ul>	Lacy 2000; Rossi 2017; Bui et al. 2019; Lamine et al. 2019
Food sovereignty	Local or regional food system networks and/or Indigenous communities	<ul style="list-style-type: none"> <li>• Equal opportunity to participate</li> <li>• Autonomy</li> <li>• Accountability</li> <li>• Transparency</li> <li>• Legitimacy</li> </ul>	Hopma and Woods 2014; Meek and Tarlau 2016; Dale 2020; Zhang 2020; Zollet et al. 2021

(Belda-Miquel et al. 2020), and knowledge (Huyer 2016) affected this ability, as did the physicality of the meetings (Prové et al. 2019). Aptekar and Myers (2020) pointed out that within the democratically designed processes of initiatives they analysed more affluent people had more influence than others. Opposite to these subjects of justice authors framed for example the private large-scale agri-food sector, corporations, multinationals, retailers and academics as powerful actors or power-holders (Kalfagianni 2015; Dale 2020; Leach et al. 2020; Clark et al. 2021). To be powerful meant that these actors could convene decision-making processes and set the agenda (Clark et al. 2021). However, initiatives worked on empowering marginalised communities to reduce their dependencies on powerful actors, for example in relation to seeds, marketing, innovations, and food imports (Koc and Dahlberg 1999; Gomiero 2018; Grote et al. 2021). There were examples in which farmers renegotiated contracts (Bui et al. 2019) and increased their autonomy (Dumont et al. 2021). On a more critical note, Bui et al. (2019) did discuss that empowerment at local level did not lead to systemic changes elsewhere and others reflected how innovations created new dependencies (Grote et al. 2021; Herrero et al. 2021).

Underpinning the three procedural justice conceptualisations were the principles of accountability, transparency, and legitimacy. Accountability referred to the obligation powerful actors had to those who are marginalised (Pimbert 2017; Smith and Patterson 2018). Processes were put in place through which people with experiences of negative environmental impacts were able to counteract decisions that led to these negative impacts (Belda-Miquel et al. 2020). It also referred to accountability of producers towards consumers through the use of certification (Hale et al. 2021). Transparency plays a key role in enabling accountability, but is also a principle of justice in its own right. In the conceptualisations it referred to openness about finances, invited experts, and included knowledge. People had a right to know who funded particular initiatives and how experts were chosen that were brought into decision-making (Lacy 2000; Canfield et al. 2021). It also referred to trust building between consumers and producers through direct conversations with each other (Kurland and Aleci 2015). The last principle was that of legitimacy. Food policy councils were set up to help the transition and decision-making processes gain legitimacy by involving local actors from across the food system (Prové et al. 2019). Powerful actors gained legitimacy within the transition when they were seen to be doing something good (Zimmerer 2015) or when they used concepts behind which they could hide (Ollinaho and Kröger 2021). Less powerful actors gained legitimacy by participating in formal processes or because they had a history of activism (Clark et al. 2021). Legitimacy of different knowledges was

also part of the conceptualisations. People tried to regain control over what knowledges were considered legitimate (Pimbert 2017). These three principles form the basis for procedural justice in food system transitions.

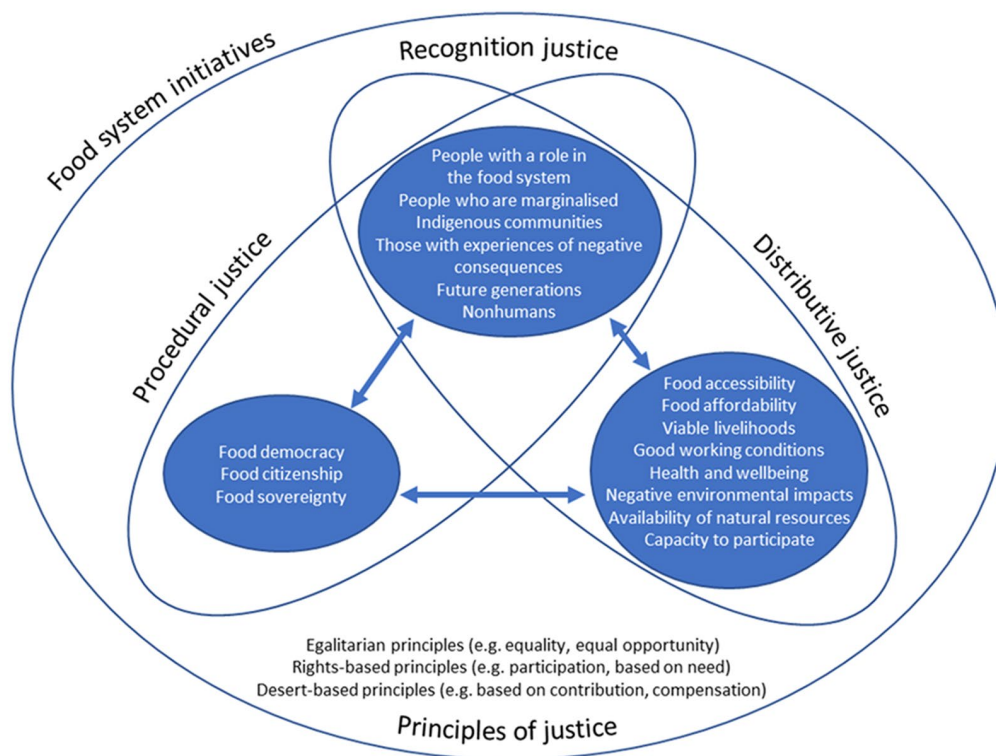
### Interrelations between conceptualisations of justice

In Fig. 3 we visualise the results within the framework we presented earlier (Fig. 1). It shows the variation of justice conceptualisations and associated principles of justice that have emerged from the review. The analysis confirms how the three justice perspectives strongly interrelate through the recognition of the six groups of subjects of justice and that a range of principles of justice are relevant to the discussion of justice implications of food system initiatives. What has also become apparent through the analysis is that initiatives often held plural and at times conflicting justice conceptualisations.

An example of tension between different distributive justice conceptualisations were initiatives working on viable livelihoods for producers whilst recognising that their work negatively impacted food affordability for marginalised people (Rossi 2017; Lamine et al. 2019; Zollet et al. 2021). Another example were initiatives working on food democracy based on the principle of equal opportunity to participate whilst participation was impeded by the unequal capacities to participate in the transition (Prové et al. 2019; Aptekar and Myers 2020; Belda-Miquel et al. 2020; Canfield et al. 2021). Authors also recognised temporal interrelations between justice conceptualisations. Over time unintended consequences affected other conceptualisations. An example that illustrates this was how urban gentrification happened as a result of community gardens that had been set up to improve food accessibility and affordability for marginalised communities living in poorer neighbourhoods (Aptekar and Myers 2020; Kato 2020; Noll 2020). As a result of this gentrification new people with more privilege joined the community gardens which led to marginalised communities having more difficulty to participate in decision-making processes of the community gardens as these new people had greater capacity to participate. These examples illustrate the messiness of justice conceptualisations when enacted in real life and in a changing (demographic) context.

### Underpinning justice discourses

Looking at the conceptualisations of justice that have emerged from the review, there was no clear difference between the conceptualisations used by initiatives aligned with more reformist, progressive, or more radical food movements. Almost all papers, whether their first authors



**Fig. 3** Justice conceptualisations and associated principles of justice used within the food systems literature to describe and discuss implications of food system initiatives visualised within our framework

were based in Europe and North America or not, used what is come to be known as Western philosophical theories of justice. In the few cases that papers referred to philosophical roots of principles or theories of justice they mainly referred to Western philosophers including John Rawls (Kalfagianni 2015; Fisher et al. 2019), Nancy Fraser (Moragues-Faus 2020; Zhang 2020), Amartya Sen (Belda-Miquel et al. 2020), or Martha Nussbaum (Popke et al. 2016; Belda-Miquel et al. 2020). An even smaller number of papers referred to Indigenous justice discourses including Sumak Kawsay or Buen Vivir (Romano and Coral 2020), Ubuntu, Ecological Swaraj, and the Buddhist middle path (Calisto Friant et al. 2020). There were no clear changes in conceptualisations over time as food justice and food sovereignty were already present in the earlier works in the 1990's and 2000's and continued to be the roots of more recent publications. However, as already mentioned, it was noticeable that more recent work was more critical of some of the justice implications of initiatives involved in organic agriculture, agroforestry, or food sovereignty.

## Discussion

To understand how authors play a role in shaping (just) transitions of food systems towards a just and sustainable future, this paper investigated which conceptualisations of justice emerged from the food system transitions literature. From this review it is clear this is a developing body of literature, which underscores the need to ensure authors are clear about how they conceptualise justice. We developed an initial framework to analyse the literature (Fig. 1). We then undertook an extensive review using this framework and were able to identify a variation of recognition, distributive, and procedural justice conceptualisations and associated principles of justice (Fig. 3). Here, we first discuss the conceptualisations and principles of justice that have emerged and point out how the framework can build reflexive capacity in food system transitions. We then reflect on the methodological limitations and on the marginalisation of certain voices and life worlds, including non-Western philosophies and nonhumans. We end the discussion with a critical reflection on the radical nature of initiatives and justice conceptualisations.

A just transition towards a just and sustainable food system is a relational endeavour in which the conceptualisations of justice influence and are influenced by what is

enacted in real life. The range of conceptualisations of justice that have emerged from the analysis shows that justice is indeed a malleable concept within food system initiatives (Bedore 2010). Central to our framework are three main perspectives to look at justice: recognition, distribution, and process. As pointed out in the introduction and conceptual grounding section, these relate to other conceptualisations of justice used in the wider literature, including restorative justice, historic justice, inter- and intragenerational justice, and multi-species justice. These other conceptualisations of justice also emerged in our analysis as authors recognised marginalised communities, people who experience(d) negative consequences of the food system, future generations, and nonhumans. Conceptualisations included the implications for those who were or will be most affected by the transition in line with the concept of a just transition (Newell and Mulvaney 2013) although authors rarely recognised them as such. Reflecting on the results from a ‘justice multiple’ perspective (Coulson and Milbourne 2021), we found that authors used plural and more-than-human conceptualisations. As for multi-scalar, the conceptualisations that emerged did not necessarily refer to systemic or structural injustices. This is likely the result of looking at justice conceptualisations that emerged through food system initiatives that often addressed specific injustices or focussed on subsets of people. Several authors placed justice implications of initiatives in relation to systemic injustices, but most conceptualisations were specifically relevant to the scale and context of initiatives. What might have also influenced this is that initiatives are unable to enact justice conceptualisations that centre collective rights and social justice within a larger food system context that frames food as a commodity (Holt-Giménez and Shattuck 2011; Agyeman and McEntee 2014; Jackson et al. 2021; Constance 2022). Temporality was included through the recognition of future generations and those with past negative experiences. Importantly, the principles of justice added more detail to the conceptualisations. They showed that for some conceptualisations authors used the same or very similar principles. For others different principles were relevant that seemed to conflict with each other depending on context and who was asked. For example, the distributive ‘viable livelihoods’ conceptualisation includes rights-based and desert-based principles which result in potentially conflicting justice outcomes. Miller (2013) argued in favour of contextualism instead of universalism when applying principles of justice. The range of conceptualisations and associated principles shows that contextualism is important due to the diverse nature of food system initiatives.

To ensure initiatives recognise and address conflicting conceptualisations, a reflexive mode of working is critical (DuPuis and Goodman 2005). Our framework can be

used by those involved in food system transitions for analytical and normative purposes. Analytically, they can use the initial framework (Fig. 1) to analyse their own justice conceptualisations and principles of justice and/or they can use the elaborated framework in Tables 1, 2 and 3; Fig. 3 to reflect on which of the conceptualisations and principles of justice that emerged from the literature are relevant in their own food system context. These analyses will help us gain insight into which conceptualisations we consciously or unconsciously use and enact in real life. Normatively, the framework can be used to widen the debate about justice in food system transitions to consider whether subjects of justice, decision-making processes, distributions, or principles of justice are unrecognised. This can also bring to the fore where we ourselves, or where different people involved in food system initiatives, hold plural and maybe conflicting conceptualisations. Another way to use the framework is to help understand how initiatives contribute to a just transition towards sustainable and just food systems. This can be done by identifying potential or actual implications of food system initiatives when reflecting on how an initiative might affect the six groups of subjects of justice in terms of recognition, procedural and/or distributive justice. These are examples of ways in which the framework as presented in this paper can help build reflexive capacity in food system transitions.

Reflecting on the method used to select relevant literature, the search in Scopus introduced a bias towards the journals and publishers that are indexed by this search engine. Mongeon and Paul-Hus (2016) found that these are mainly journals and publishers in North America and Europe. An analysis of the relevant papers showed that the majority of first authors were based in North America and Europe further emphasising a bias towards Western philosophical epistemologies. Our own background as white scholars based in institutions in Western Europe brings its own bias to this research. We do consider the search terms used to be inclusive of non-Western conceptualisations of justice but our personal backgrounds, upbringing, experiences of (in)justice, and expertise in food system transitions will have influenced the boundaries of our research and the analysis done. As this review was not set up as a systematic review, this bias does not undermine the resulting conceptualisations of justice, but it does highlight that due to our own biases and methodological limitations, it is likely we have not covered justice conceptualisations used by authors who published in other outlets or in languages other than English.

Reflecting on the results we identify two aspects of justice that the framework does not directly capture. First, our framework only partly captured the responsibility and/or obligation of actors to respond to injustices. We did include in the distributive justice tables between whom things were

(re)distributed and identified accountability as a means to identify obligation in procedural justice. However, the notion of obligation is not separately mentioned in the framework. To unpack the difference between who ought to address an injustice and who is addressing it Kortetmäki and Huttunen (2022) have identified different roles and responsibilities for actors in just transitions. Second, although power underpins all the results in terms of access to and control over resources and/or processes, it remains an elusive dimension of justice in our framework. Leach et al. (2020) offer a useful overview of different conceptualisation of power in relation to several food politics approaches. What our results show is the power researchers have. When writing about the justice implications of initiatives they enact their own conceptualisations by including and excluding certain voices and life worlds within the research on transitions. Glennie and Alkon reflected that “exclusionary whiteness within the [food justice] movement itself” is often overlooked by academics and activists (Glennie and Alkon 2018, p. 7). It is important to recognise that marginalisation is deeply interconnected with unequal power dynamics between food system actors (Kaljonen et al. 2021). In practice unequal power dynamics can be addressed through inclusive governance by giving voice to marginalised people (Termeer et al. 2018). Svarstad and Benjaminson (2020) call for marginalised people and groups to be asked about how they perceive justice. They introduce the idea of ‘senses of justice’ to help researchers recognise the diversity of experiences, perceptions, and justice conceptualisations within marginalised communities. This challenges researchers to not see marginalised groups as homogeneous and to be aware how we include their voices and life worlds when writing about justice implications.

This interconnects with the result that the justice conceptualisations that emerged were mostly based on Western philosophical theories of justice. Sovacool et al. identified that across the world and within academic writing on energy justice “Western theorists and anthropocentric concepts have tended to dominate the discourse on jurisprudence” (Sovacool et al. 2017, p. 678). The limited number of publications that referred to Indigenous justice discourses highlights that this for now is also true for the food system transitions literature. We do want to question whether the labels of Western and non-Western are helpful. Principles such as equality, solidarity and sufficiency are included in, and might even be a result of, Indigenous conceptualisations of justice. Having said that, our ontological assumptions about relationships between entities such as humans and nonhumans also influences who we consider subjects of justice and how we conceptualise justice (Stumpf et al. 2015). It is important to recognise that the justice discourse rooted in Western philosophy makes distinctions between

nature and humans, the material and spiritual. Celermajer et al. (2021) point out that Indigenous multispecies justice conceptualisations challenge these normative framings of justice. They emphasise interconnections between humans, nonhumans, and material and spiritual worlds. For a just and sustainable transition of the food system it is critical that researchers recognise non-Western and Indigenous conceptualisations of justice.

Despite the mainly Western philosophical roots, the results show that nonhumans are considered subjects of justice in a number of distributive justice conceptualisations, especially in the distribution of health and wellbeing of farm animals and inanimate entities of land and water. Papers recognised how nonhumans influenced and were influenced by the food system initiatives, but in procedural conceptualisations nonhumans did not play a large role. Recent work on animal welfare, and in particular positive welfare states, is helping to reframe farm animals from being a commodity to animals with intrinsic values and emotions (Webb et al. 2019; Kremer et al. 2021; Vigors et al. 2021). Taking this a step further, nonhumans can be legally recognised and granted the rights of a person, as was for example done with a river in New Zealand (Kramm 2020). The work on more-than-human participation has developed practical ways to include nonhumans in decision-making processes (Bastian et al. 2017; Dyke et al. 2018). We join the call for further exploration of engagement with nonhumans in just transitions of food systems (Kaljonen et al. 2021; Tribaldos and Kortetmäki 2022; Tschersich and Kok 2022), but extend this to also challenge researchers to engage nonhumans within their research.

The initiatives described in the relevant publications differed in how radically they wanted to change the global neoliberal economy and corporate food regime. Some were reformist in nature and considered the neoliberal economy best placed to address injustices caused by the corporate food regime (Holt-Giménez and Shattuck 2011). These initiatives often framed food as a commodity and focussed on distributive justice issues related to food insecurity (Constance 2022). Agyeman and McEntee (2014) critique initiatives that focus on market-based solutions as these assume people can buy themselves out of food insecurity. These initiatives defined injustices often in relation to the environmental unsustainability of food production without recognising or addressing the causes that created the exploitation of natural resources and people in the first place (Lang and Barling 2012; Schlosberg and Coles 2016; Teh et al. 2019). They did not address underlying power structures and causes of social inequalities (Leach et al. 2020; Jackson et al. 2021). More radical initiatives were rooted in food justice or food sovereignty movements that challenge the corporate food regime (Holt-Giménez and Shattuck 2011). Food

justice initiatives were particularly concerned with injustices related to ethnicity, age, gender, disability, and class (Agyeman and McEntee 2014; Alkon 2014; Glennie and Alkon 2018). Initiatives rooted in food sovereignty created alternative food regimes based on democracy, decentralisation, autonomy of decision-making, and the right to produce (La Via Campesina 1996; Nyéléni 2007; McMichael 2009). Food was framed as a human right or even as a common good (Jackson et al. 2021) and initiatives prioritised critical engagement with the underlying causes of injustices (Agyeman and McEntee 2014; Loo 2014). The increasing number of initiatives rooted in food justice and food sovereignty described in the relevant publications shows that a food system transition towards a just and sustainable food system is ongoing.

Taking this a step further, we can also reflect on the radical nature of conceptualisations of justice. Distributive justice issues seemed to be easier said and conceptualised than procedural injustices that caused or contributed to these injustices. Agyeman and McEntee (2014) argue that justice conceptualisations need to move beyond distributive outcomes to understand the processes that brought about injustices in the first place, including the power dynamics leading to marginalisation (Leach et al. 2020). In theory, the ideal sets of principles of food sovereignty (La Via Campesina 1996; Nyéléni 2007), organic agriculture (Luttikholt 2007) and agroecology (HLPE 2019) include radical justice conceptualisations. However, the review included initiatives that had been co-opted by the corporate food regime, which reduced the radical nature of those initiatives. Alkon (2014) points out that less radical initiatives are not necessarily a cause for concern as exciting and creative things happen when initiatives try to work on food justice and food sovereignty within a neoliberal context. However, Patel (2009) and Cadieux and Slocum (2015) see this as a risk. What this review suggests is that the most radical we can do is to consciously place the six groups that need to be recognised at the heart of our justice conceptualisations and to not shy away from initiatives that address procedural injustices.

## Conclusion

Through our research we want to contribute to a just transition of food systems as researchers, but we need to recognise our privilege as academics. We consider our perspective on food system transitions as dynamic in nature, informed by the research we do, the people and nonhumans we engage with, and the students we work with. We understand justice and just transitions to be relational ontologies in which human and nonhuman entanglements make up the food system (Schlosberg et al. 2019). We consider human and

nonhumans as subjects and agents of justice and want to facilitate and contribute to the debate on conceptualisations of justice in food system initiatives. Allen (2008) encourages academics to help students critically reflect on the current food system and to engage with food politics and the politics of the food system transition. These are at the core of our teaching and supervision in which we also specifically support students to undertake research within their local environment to amplify the voices of their communities.

To conclude, if we want to achieve sustainable and just food systems through a just transition, it is critical that we do so reflexively through engaging with our own underlying values, normative ideals, and priorities as well as with the underlying causes of social inequalities. And that we do so inclusively, through recognising those who should be recognised as subjects of justice: those with a particular role in the food system including producers and consumers, people who are marginalised, Indigenous communities, those with experiences of negative consequences of the food system, future generations, and nonhumans. The framework presented in this paper can play an important role to help bring more clarity to food system initiatives and researchers about how they conceptualise justice. We challenge them to be more explicit about who they do and do not recognise as subjects of justice and which principles of justice they use. Such clarity will support a reflexive and inclusive debate about how food system initiatives contribute(d) to a just transition towards sustainable and just food systems.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s10460-023-10482-y>.

**Acknowledgements** The authors wish to acknowledge the funders of the ‘Circular Agriculture in North-Netherlands: Daring scenarios and Interlinked Transformation’ (CAN-DO-IT) project of which this paper is a part.

**Authors Contribution** All authors contributed to the study conception and design. The literature search and data analysis were performed by Annemarieke de Bruin. The first draft of the manuscript was written by Annemarieke de Bruin. All authors commented on previous versions of the manuscript and read and approved the final manuscript.

**Funding** This article is part of the project ‘Circular Agriculture in North-Netherlands: Daring scenarios and Interlinked Transformation’ (CAN-DO-IT). This work was supported by the Dutch Research Council (NWO) Green III program (Grant number GROEN.2019.001) with co-financing from the Dutch Ministry of Agriculture, Nature, and Food Quality; Rabobank; Agrifirm Noord-West Europa; and Meststoffen Nederland.

## Declarations

**Competing interests** The authors have no competing interests to declare that are relevant to the content of this article.

**Ethics approval and consent to participate** The literature review required no ethical approval nor consent.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

- Agyeman, J., and J. McEntee. 2014. Moving the field of Food Justice Forward through the Lens of Urban Political Ecology. *Geography Compass* 8 (3): 211–220.
- Agyeman, J., D. Schlosberg, L. Craven, and C. Matthews. 2016. Trends and directions in Environmental Justice: from inequity to Everyday Life, Community, and just sustainabilities. *Annual Review of Environment and Resources* 41 (1): 321–340.
- Alkon, A. H. 2014. Food Justice and the challenge to Neoliberalism. *Gastronomica* 14 (2): 27–40.
- Allen, P. 2008. Mining for justice in the food system: perceptions, practices, and possibilities. *Agriculture and Human Values* 25 (2): 157–161.
- Anderson, C. R., J. Bruil, M. J. Chappell, C. Kiss, and M. P. Pimbert. 2019. From transition to domains of transformation: getting to sustainable and just food systems through agroecology. *Sustainability* 11 (19): 5272.
- Andr e, P., P. Ballamingie, S. Piazza, and S. Jarosiewicz. 2017. Can community-based initiatives address the conundrum of improving household food access while supporting local smallholder farmer livelihoods? In *Nourishing Communities*, eds. I. Knezevic, A. Blay-Palmer, C. Levkoe, P. Mount, and E. Nelson, 77–94. Cham, Switzerland: Springer.
- Aptekar, S., and J. S. Myers. 2020. The tale of two community gardens: green aesthetics versus food justice in the big apple. *Agriculture and Human Values* 37 (3): 779–792.
- Bastian, M., O. Jones, N. Moore, and E. Roe, eds. 2017. *Participatory research in more-than-human worlds*. 1st ed. New York, NY: Routledge.
- Beamer, K., A. Tuma, A. Thorenz, S. Boldoczki, K. Kotubetey, K. Kukea-Shultz, and K. Elkington. 2021. Reflections on sustainability concepts: Aloha  aina and the circular economy. *Sustainability* 13 (5): 1–16.
- Bedore, M. 2010. Just urban Food Systems: a New Direction for Food Access and Urban Social Justice. *Geography Compass* 4 (9): 1418–1432.
- Belda-Miquel, S., V. Pellicer-Sifres, and A. Boni. 2020. Exploring the contribution of grassroots innovations to justice: using the capability approach to normatively address bottom-up sustainable transitions practices. *Sustainability* 12 (9): 3617.
- Biermann, F., K. Abbott, S. Andresen, K. B ackstrand, S. Bernstein, M. M. Betsill, H. Bulkeley, B. Cashore, J. Clapp, C. Folke, A. Gupta, J. Gupta, P. M. Haas, A. Jordan, N. Kanie, T. Kluv ankov a-Oravsk a, L. Lebel, D. Liverman, J. Meadowcroft, ...R. Zondervan. 2012. Transforming governance and institutions for global sustainability: key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability* 4 (1): 51–60.
- Bui, S., I. Costa, O. De Schutter, T. Dedeurwaerdere, M. Hudon, and M. Feyereisen. 2019. Systemic ethics and inclusive governance: two key prerequisites for sustainability transitions of agri-food systems. *Agriculture and Human Values* 36 (2): 277–288.
- Cadieux, K. V., and R. Slocum. 2015. What does it mean to do food justice? *Journal of Political Ecology* 22 (1): 1–26.
- Calisto Friant, M., W. J. V. Vermeulen, and R. Salomone. 2020. A typology of circular economy discourses: navigating the diverse visions of a contested paradigm. *Resources, Conservation and Recycling* 161.
- Canfield, M., M. D. Anderson, and P. McMichael. 2021. UN Food Systems Summit 2021: Dismantling Democracy and Resetting Corporate Control of Food Systems. *Frontiers in Sustainable Food Systems* 5.
- Celermajer, D., D. Schlosberg, L. Rickards, M. Stewart-Harawira, M. Thaler, P. Tschakert, B. Verlie, and C. Winter. 2021. Multispecies justice: theories, challenges, and a research agenda for environmental politics. *Environmental Politics* 30 (1–2): 119–140.
- Clark, J. K., K. Lowitt, C. Z. Levkoe, and P. Andr e. 2021. The power to convene: making sense of the power of food movement organizations in governance processes in the Global North. *Agriculture and Human Values* 38 (1): 175–191.
- Clay, N., T. Garnett, and J. Lorimer. 2020. Dairy intensification: drivers, impacts and alternatives. *Ambio* 49 (1): 35–48.
- Constance, D. H. 2022. The doctors of agrifood studies. *Agriculture and Human Values* 40 (1): 31–43.
- Coulson, H., and P. Milbourne. 2021. Food justice for all?: searching for the ‘justice multiple’ in UK food movements. *Agriculture and Human Values* 38 (1): 43–58.
- Dale, B. 2020. Alliances for agroecology: from climate change to food system change. *Agroecology and Sustainable Food Systems* 44 (5): 629–652.
- Darnhofer, I. 2014. Contributing to a transition to sustainability of Agri-Food Systems: potentials and pitfalls for Organic Farming. In *Organic Farming, Prototype for sustainable agricultures*, eds. S. Bellon, and S. Penvern, 439–452. Dordrecht, Netherlands: Springer.
- Dumont, B., J. C. J. Groot, and M. Tichit. 2018. Review: Make ruminants green again - how can sustainable intensification and agroecology converge for a better future? *Animal* 12(s2): S210–S219.
- Dumont, A. M., A. C. Wartenberg, and P. V. Baret. 2021. Bridging the gap between the agroecological ideal and its implementation into practice. A review. *Agronomy for Sustainable Development* 41(32).
- DuPuis, E. M., and D. Goodman. 2005. Should we go ‘home’ to eat?: toward a reflexive politics of localism. *Journal of Rural Studies* 21 (3): 359–371.
- Dyke, A., H. Geoghegan, and A. de Bruin. 2018. Towards a More-Than-Human Approach to Tree Health. In *The human dimensions of forest and Tree Health*, eds. J. Urquhart, M. Marzano, and C. Potter, 445–470. Palgrave Macmillan.
- FAO, IFAD, UNICEF, WFP, and WHO. 2021. *The state of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all*. Rome, Italy: FAO.
- Fisher, E., J. Hellin, H. Greatrex, and N. Jensen. 2019. Index insurance and climate risk management: addressing social equity. *Development Policy Review* 37 (5): 581–602.
- Fulfer, K. 2013. The Capabilities Approach to Justice and the Flourishing of Nonsentient Life. *Ethics and the Environment* 18 (1): 19.
- Geels, F. W., and J. Schot. 2007. Typology of sociotechnical transition pathways. *Research Policy* 36 (3): 399–417.
- George, K. P. 1992. Sustainability and the moral community. *Agriculture and Human Values* 9 (4): 48–57.

- Glennie, C., and A. H. Alkon. 2018. Food justice: cultivating the field. *Environmental Research Letters* 13 (7): 073003.
- Gomiero, T. 2018. Agriculture and degrowth: state of the art and assessment of organic and biotech-based agriculture from a degrowth perspective. *Journal of Cleaner Production* 197: 1823–1839.
- Gottlieb, R., and A. Joshi. 2013. *Food justice*. Cambridge, MA: The MIT Press.
- Grote, U., A. Fasse, T. T. Nguyen, and O. Erenstein. 2021. Food Security and the Dynamics of Wheat and Maize Value Chains in Africa and Asia. *Frontiers in Sustainable Food Systems* 4.
- Hale, J., M. Schipanski, and M. Carolan. 2021. Just wheat transitions?: working toward constructive structural changes in wheat production. *Local Environment* 26 (1): 43–59.
- Hastings, Z., M. Wong, and T. Ticktin. 2021. Who gets to adopt? Contested values constrain just Transitions to Agroforestry. *Frontiers in Sustainable Food Systems* 5.
- Hebinck, A., L. Klerkx, B. Elzen, K. P. W. Kok, B. König, K. Schiller, J. Tschersich, and B. van Mierlo, and T. von Wirth. 2021. Beyond food for thought – Directing sustainability transitions research to address fundamental change in agri-food systems. *Environmental Innovation and Societal Transitions* 41: 81–85.
- Heffron, R. J., and D. McCauley. 2018. What is the ‘Just transition’? *Geoforum* 88: 74–77.
- Herrero, M., P. K. Thornton, D. Mason-D’Croz, J. Palmer, B. L. Bodirsky, P. Pradhan, C. B. Barrett, T. G. Benton, A. Hall, I. Pikaar, S. A. Wood, and J. Rockström. 2021. Articulating the effect of food systems innovation on the Sustainable Development Goals. *The Lancet Planetary Health* 5 (1): e50–e62.
- HLPE. 2019. *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the high level panel of experts on Food Security and Nutrition of the Committee on World Food Security*. Rome: FAO.
- Holt-Giménez, E., and A. Shattuck. 2011. Food crises, food regimes and food movements: rumblings of reform or tides of transformation? *The Journal of Peasant Studies* 38 (1): 109–144.
- Hopma, J., and M. Woods. 2014. Political geographies of ‘food security’ and ‘food sovereignty’. *Geography Compass* 8 (11): 773–784.
- Huyer, S. 2016. Closing the gender gap in Agriculture. *Gender Technology and Development* 20 (2): 105–116.
- IPES-Food. 2017. *Too big to feed: exploring the impacts of mega-mergers, consolidation and concentration of power in the agri-food sector*. IPES-Food.
- Jackson, P., M. G. Rivera Ferre, J. Candel, A. Davies, C. Derani, H. de Vries, V. Dragović-Uzelac, A. H. Hoel, L. Holm, E. Mathijs, P. Morone, M. Penker, R. Śpiwak, K. Termeer, and J. Thøgersen. 2021. Food as a commodity, human right or common good. *Nature Food* 2 (3): 132–134.
- Jasanoff, S. 2018. Just transitions: a humble approach to global energy futures. *Energy Research and Social Science* 35: 11–14.
- Kalfagianni, A. 2015. ‘Just food’. The normative obligations of private agrifood governance. *Global Environmental Change* 31: 174–186.
- Kaljonen, M., T. Kortetmäki, T. Tribaldos, S. Huttunen, K. Karttunen, R. S. Maluf, J. Niemi, M. Saarinen, J. Salminen, M. Vaalavuo, and L. Valsta. 2021. Justice in transitions: widening considerations of justice in dietary transition. *Environmental Innovation and Societal Transitions* 40: 474–485.
- Kato, Y. 2020. Gardening in Times of Urban Transitions: Emergence of Entrepreneurial Cultivation in Post-Katrina New Orleans. *City and Community* 19 (4): 987–1010.
- Kjellén, M. 2018. Wastewater governance and the local, regional and global environments. *Water Alternatives* 11 (2): 219–237.
- Koc, M., and K. A. Dahlberg. 1999. The restructuring of food systems: Trends, research, and policy issues. *Agriculture and Human Values* 16 (2): 109–116.
- Kortetmäki, T., and S. Huttunen. 2022. Responsibilities for just transition to low-carbon societies: a role-based framework. *Environmental Politics* 32 (2): 249–270.
- Kramm, M. 2020. When a river becomes a person. *Journal of Human Development and Capabilities* 21 (4): 307–319.
- Kremer, L., J. D. Bus, L. E. Webb, E. A. M. Bokkers, B. Engel, J. T. N. van der Werf, S. K. Schnabel, and C. G. van Reenen. 2021. Housing and personality effects on judgement and attention biases in dairy cows. *Scientific Reports* 11 (1): 1–18.
- Kurland, N. B., and L. S. Aleci. 2015. From civic institution to community place: the meaning of the public market in modern America. *Agriculture and Human Values* 32 (3): 505–521.
- La Via Campesina. 1996. *The right to produce and access to land. La Via Campesina Declaration on food sovereignty presented at the World Food Summit*. Rome.
- Lacy, W. B. 2000. Empowering communities through public work, science, and local food systems: revisiting democracy and globalization. *Rural Sociology* 65 (1): 3–26.
- Lamine, C., L. Garçon, and G. Brunori. 2019. Territorial agrifood systems: a Franco-Italian contribution to the debates over alternative food networks in rural areas. *Journal of Rural Studies* 68: 159–170.
- Lang, T., and D. Barling. 2012. Food security and food sustainability: reformulating the debate. *The Geographical Journal* 178 (4): 313–326.
- Leach, M., N. Nisbett, L. Cabral, J. Harris, N. Hossain, and J. Thompson. 2020. Food politics and development. *World Development* 134.
- Levkoe, C. Z. 2011. Towards a transformative food politics. *Local Environment* 16 (7): 687–705.
- Loo, C. 2014. Towards a more participative definition of Food Justice. *Journal of Agricultural and Environmental Ethics* 27 (5): 787–809.
- Luttikholt, L. W. M. 2007. Principles of organic agriculture as formulated by the International Federation of Organic Agriculture movements. *Netherlands Journal of Agricultural Science* 54 (4): 347–360.
- McMichael, P. 2009. A food regime genealogy. *The Journal of Peasant Studies* 36 (1): 139–169.
- Meadowcroft, J. 2009. What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy Sciences* 42: 323–340.
- Meadowcroft, J. 2011. Engaging with the politics of sustainability transitions. *Environmental Innovation and Societal Transitions* 1 (1): 70–75.
- Meek, D., and R. Tarlau. 2016. Critical food systems education (CFSE): educating for food sovereignty. *Agroecology and Sustainable Food Systems* 40 (3): 237–260.
- Miller, D. 2013. *Justice for earthlings: essays in political philosophy*. Cambridge, UK: Cambridge University Press.
- Miller, D. 2017. Justice. In *The Stanford Encyclopedia of Philosophy (Fall 2017 edition)*, ed. E. N. Zalta. Metaphysics Research Lab, Stanford University. <https://plato.stanford.edu/archives/fall2017/entries/justice/> Accessed 1 June 2021.
- Mongeon, P., and A. Paul-Hus. 2016. The journal coverage of web of Science and Scopus: a comparative analysis. *Scientometrics* 106 (1): 213–228.
- Moragues-Faus, A. 2017. Problematising justice definitions in public food security debates: towards global and participative food justice. *Geoforum* 84: 95–106.
- Moragues-Faus, A. 2020. Towards a critical governance framework: unveiling the political and justice dimensions of urban food partnerships. *Geographical Journal* 186 (1): 73–86.



- Newell, P., and D. Mulvaney. 2013. The political economy of the 'just transition'. *The Geographical Journal* 179 (2): 132–140.
- Nicol, P., and A. Taherzadeh. 2020. Working co-operatively for sustainable and just food system transformation. *Sustainability* 12 (7): 1–18.
- Noll, S. 2020. Growing resistance to Systems of Oppression: An Exploration of the Transformative Power of Urban Agriculture. *Open Philosophy* 3 (1): 566–577.
- Nussbaum, M. C. 2007. *Frontiers of justice: disability, nationality, species membership*. The Tanner Lectures on human values. Harvard University Press, Belknap Press.
- Nyéleni. 2007. *Nyéleni Declaration*. Sélingué, Mali: Forum for Food Sovereignty. <https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf> Accessed 14 October 2022.
- Ollinaho, O. I., and M. Kröger. 2021. Agroforestry transitions: the good, the bad and the ugly. *Journal of Rural Studies* 82: 210–221.
- Patel, R. 2009. Food sovereignty. *The Journal of Peasant Studies* 36 (3): 663–706.
- Petoskey, J., M. Stults, E. Naples, G. Hardy, A. Quilici, C. Byerly, A. Clark, D. Newton, E. Santiago, and J. Teener. 2021. Envisioning a circular economy: the journey of one mid-sized midwestern city. *Sustainability* 13(6).
- Pimbert, M. P. 2017. Democratizing knowledge and ways of knowing for food sovereignty, agroecology and biocultural diversity. In *Food Sovereignty, Agroecology and Biocultural Diversity: constructing and contesting knowledge*, ed. M. P. Pimbert, 259–321. London, UK: Routledge.
- Popke, J., S. Curtis, and D. W. Gamble. 2016. A social justice framing of climate change discourse and policy: adaptation, resilience and vulnerability in a jamaican agricultural landscape. *Geoforum* 73: 70–80.
- Prové, C., M. P. M. de Krom, and J. Dessein. 2019. Politics of scale in urban agriculture governance: a transatlantic comparison of food policy councils. *Journal of Rural Studies* 68: 171–181.
- Puupponen, A., A. Lonkila, A. Savikurki, K. Karttunen, S. Huttunen, and A. Ott. 2022. Finnish dairy farmers' perceptions of justice in the transition to carbon-neutral farming. *Journal of Rural Studies* 90: 104–112.
- Romano, J., and B. V. Coral. 2020. Public management, private management and collective action in the Portoviejo River Basin: visions and conflicts. *Sustainability* 12 (13): 5467.
- Rossi, A. 2017. Beyond food provisioning: the transformative potential of grassroots innovation around food. *Agriculture* 7 (1): 6.
- Routledge, P., A. Cumbers, and K. D. Derickson. 2018. States of just transition: realising climate justice through and against the state. *Geoforum* 88: 78–86.
- Rowan, N. J., and O. Casey. 2021. Empower Eco multiactor HUB: a triple helix 'academia-industry-authority' approach to creating and sharing potentially disruptive tools for addressing novel and emerging new Green Deal opportunities under a United Nations Sustainable Development Goals framework. *Current Opinion in Environmental Science and Health* 21: 100254.
- Sanderson Bellamy, A., E. Furness, O. Nicol, H. Pitt, and A. Taherzadeh. 2021. Shaping more resilient and just food systems: Lessons from the COVID-19 pandemic. *Ambio* 50 (4): 782–793.
- Schlosberg, D. 2007a. *Defining Environmental Justice: theories, movements, and Nature*. Oxford, UK: Oxford University Press.
- Schlosberg, D. 2007b. Reconceiving Environmental Justice: global movements and political Theories. *Environmental Politics* 13 (3): 517–540.
- Schlosberg, D., and R. Coles, R. 2016. The new environmentalism of everyday life: sustainability, material flows and movements. *Contemporary Political Theory* 15: 160–181.
- Schlosberg, D., K. Bäckstrand, and J. Pickering. 2019. Reconciling ecological and democratic values: recent perspectives on ecological democracy. *Environmental Values* 28: 1–8.
- Smith, J., and J. Patterson. 2018. Global climate justice activism: "the new protagonists" and their projects for a just transition. In *Ecologically unequal exchange: environmental injustice in comparative and historical perspective*, eds. R. S. Frey, P. K. Gellert, and H. F. Dahms, 245–272. Cham, Switzerland: Palgrave Macmillan.
- Sovacool, B. K., M. Burke, L. Baker, C. K. Kotikalapudi, and H. Wlokas. 2017. New frontiers and conceptual frameworks for energy justice. *Energy Policy* 105: 677–691.
- Stringer, L. C., E. D. G. Fraser, D. Harris, C. Lyon, L. Pereira, C. F. M. Ward, and E. Simelton. 2020. Adaptation and development pathways for different types of farmers. *Environmental Science and Policy* 104: 174–189.
- Stumpf, K. H., S. Baumgärtner, C. U. Becker, and S. Sievers-Glotzbach. 2015. The Justice dimension of sustainability: a systematic and general conceptual Framework. *Sustainability* 7 (6): 7438–7472.
- Svarstad, H., and T. A. Benjaminsen. 2020. Reading radical environmental justice through a political ecology lens. *Geoforum* 108: 1–11.
- Teh, L. C. L., R. Caddell, E. H. Allison, E. M. Finkbeiner, J. N. Kittinger, K. Nakamura, and Y. Ota. 2019. The role of human rights in implementing socially responsible seafood. *Plos One* 14 (1): e0210241.
- Termeer, C. J. A. M., S. Drimie, J. Ingram, L. Pereira, and M. J. Whittingham. 2018. A diagnostic framework for food system governance arrangements: the case of South Africa. *NJAS - Wageningen Journal of Life Sciences* 84: 85–93.
- Trevilla Espinal, D. L., M. L. Soto Pinto, H. Morales, and E. I. J. Estrada-Lugo. 2021. Feminist agroecology: analyzing power relationships in food systems. *Agroecology and Sustainable Food Systems* 45 (7): 1029–1049.
- Tribaldos, T., and T. Kortetmäki. 2021. 22. Developing principles and criteria for just transition in food systems: a transdisciplinary endeavour. In *Justice and food security in a changing climate*, H. Schübel, eds. and I, 158–163. Wageningen, the Netherlands: Wageningen Academic Publishers: Wallimann-Helmer.
- Tribaldos, T., T. and Kortetmäki. 2022. Just transition principles and criteria for food systems and beyond. *Environmental Innovation and Societal Transitions* 43: 244–256.
- Tschersich, J., and K. P. W. Kok. 2022. Deepening democracy for the governance toward just transitions in agri-food systems. *Environmental Innovation and Societal Transitions* 43: 358–374.
- Turnhout, E., T. Metzke, C. Wyborn, N. Klenk, and E. Louder. 2020. The politics of co-production: participation, power, and transformation. *Current Opinion in Environmental Sustainability* 42: 15–21.
- van Mierlo, B., and P. J. Beers. 2020. Understanding and governing learning in sustainability transitions: a review. *Environmental Innovation and Societal Transitions* 34: 255–269.
- Vigors, B., P. Sandøe, and A. B. Lawrence. 2021. Positive Welfare in Science and Society: differences, similarities and synergies. *Frontiers in Animal Science* 2: 66.
- Webb, L. E., R. Veenhoven, J. L. Harfeld, M.B. and Jensen. 2019. What is animal happiness? *Annals of the New York Academy of Sciences* 1438 (1): 62–76.
- Whitfield, S., M. Apgar, C. Chabvuta, A. Challinor, K. Deering, A. Dougill, A. Gulzar, F. Kalaba, C. Lamanna, D. Manyonga, L. O. Naess, C. H. Quinn, T. S. Rosentock, S. M. Sallu, K. Schreckenberg, H. E. Smith, R. Smith, P. Steward, and K. Vincent. 2021. A framework for examining justice in food system transformations research. *Nature Food* 2 (6): 383–385.
- Zhang, L. 2020. From left behind to leader: gender, agency, and food sovereignty in China. *Agriculture and Human Values* 37 (4): 1111–1123.
- Zimmerer, K. S. 2015. Environmental governance through 'Speaking like an indigenous state' and respatializing resources: ethical

livelihood concepts in Bolivia as versatility or verisimilitude? *Geoforum* 64: 314–324.

- Zimmerer, K. S., Y. Jiménez-Olivencia, A. Ruiz-Ruiz, and L. Porcel-Rodríguez. 2020. Agri-food land transformations and immigrant farm workers in peri-urban areas of Spain and the Mediterranean. *Land* 9 (12): 1–19.
- Zollet, S., L. Colombo, P. De Meo, D. Marino, S. R. McGreevy, N. McKeon, and S. Tarra. 2021. Towards territorially embedded, equitable and resilient food systems? Insights from grassroots responses to COVID-19 in Italy and the city region of Rome. *Sustainability* 13 (5): 2425.
- Zurek, M., A. Hebinck, and O. Selomane. 2021. Looking across diverse food system futures: implications for climate change and the environment. *Q Open* 1 (1): qoaa001.

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

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

**Annemarieke de Bruin** is a PhD student at the Animal Production Systems group of Wageningen University & Research. Her PhD research looks through a justice lens at the ongoing transition of the food system in the North of the Netherlands. She holds an MSc in Tropical Land use and an MSc in Geographic Information Systems. Her previous research has focussed on agricultural water management, more-than-human participation, and farmer-led innovation.

**Imke de Boer** is personal Professor Livestock & Sustainable Food Systems at the Animal Production Systems group of Wageningen University & Research. She is a leading expert in analysing and designing healthy and sustainable food systems. Together with a team of farmers, scientists, and food visionaries, she won the Food Systems Visions Prize of the Rockefeller Foundation in 2021. She is currently active in the transition towards a sustainable food future in various regions in the Netherlands.

**Niels Faber** is an assistant professor at the University of Groningen (Campus Fryslân) and researcher/lecturer at Hanze University of Applied Sciences. His research focuses on the organizational aspects of sustainability and the circular economy. This translates into such themes as new forms of organization, in particular the circular economy, the ensuing transition, and assessment of the progress made. He has produced numerous academic and professional publications, and recently co-edited the book *Organizing for Sustainability* (Open Access publication at Palgrave-MacMillan).

**Gjalt de Jong** is Professor of Sustainable Entrepreneurship in a Circular Economy at the University of Groningen (Campus Fryslân). Professor de Jong builds on more than 25 years of experience in academia, business, and management. He holds a Master of Science in Economics and a PhD in Business Administration from the University of Groningen. He is the chair and head of the department Sustainable Entrepreneurship in a Circular Economy, founder-director of the Master of Science program Sustainable Entrepreneurship, founder-director of the Centre for Sustainable Entrepreneurship, and chair of the board of the Faculty's research institute. He currently serves as the special advisor for nature inclusive farming to the President of the University of Groningen and the University of the North.

**Katrien Termeer** is personal Professor of Public Administration and Policy at Wageningen University & Research and a crown-appointed member of the Social Economic Council. Her research addresses the governance of wicked problems in the interrelated fields of food, agriculture, climate, water, and energy. She developed the idea of transformational change through accumulating small wins. She is especially interested in how governance actors, constrained and enabled by historically grown institutions, make sense to transformative change and new forms of governance in day-to-day practices. She uses research findings for co-designing innovative governance arrangements and developing action strategies.

**Evelien de Olde** is assistant professor at the Animal Production System group of Wageningen University & Research. Her research focuses on 'Governance towards sustainable animal production' and covers two main themes: understanding what sustainability in animal production in different contexts is, and studying the role of governance initiatives to move towards sustainable production. De Olde is currently involved in several research projects related to the sustainability and circularity of agriculture and food systems.