



## Perceived justice of the Dutch food system transition

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### ABSTRACT

Across the world, including in the Netherlands, a transition is unfolding towards sustainable and just food systems. Despite this directionality, the risk remains that the transition process reproduces existing injustices and/or creates new ones. In transitions, perceptions of justice play a critical role as perceived injustices can create disengagement or protest, whereas perceived justice can increase people's willingness to make changes or carry costs of the transition. However, what is perceived as (un)just is context specific and defined by people through their relations within the food system. The aim of this paper is to complement current research on justice perceptions in food system transitions with insights into their situated, relational nature. In a regional case study, we ask: how do actors from across the food system perceive justice in an ongoing food system transition in the North of the Netherlands? Based on data from interviews and a workshop we analysed the food system situations that people judged as (un)just and the relationships within these situations. We identify five overarching food system situations which people perceived as (un)just: changes in production practices, food prices, the capacity to participate, and societal appreciation and critique, and the unequal distribution of power that has not changed. We call for a reflexive food system transition and conclude that attending to the situated, relational nature of justice perceptions in ongoing food system transitions helps to create awareness of, and the opportunity to support or address, existing and new (in)justices.

### 1. Introduction

Across the world, including in the Netherlands, a transition is unfolding towards sustainable and just food systems. With the aim to address injustices, initiatives contribute to changes in practices, rules, and structures of socio-technical systems that make up the food system (Bui et al., 2016; Geels, 2011; Markard et al., 2020). However, the risk remains that actors across the food system reproduce or redistribute existing injustices or create new ones as the transition unfolds (Gupta et al., 2023; Hebinck et al., 2021). A growing body of literature on just transitions emphasises the need to understand the situations in which justice implications of transitions occur, especially identifying who carry the costs and burdens of the transition process itself (Heffron and McCauley, 2018; Newell and Mulvaney, 2013; Tribaldos and Kortetmäki, 2022). These situations are context specific and defined by people through their relations within the (food system) context.

Situations that can be judged from a justice perspective include people's (in)action or (lack of) changes in practices, rules, and structures (Markard et al., 2020; Stumpf et al., 2016). For example, transition processes can overburden already vulnerable or marginalised communities or exclude these communities from decision-making processes (Blythe et al., 2018; McGowan and Antadze, 2023).

Some authors have outlined what needs to happen to make a food system transition more just (Tribaldos and Kortetmäki, 2022; Tschersich and Kok, 2022) and centre universal, abstract conceptualisations of justice. However, insights from food justice literature show that what is meant by justice is not universal but contextual because it is situated in relationships that are relative to time and place (Coulson and Milbourne, 2021; Glennie and Alkon, 2018; Moragues-Faus, 2020; Slocum et al., 2016). These relationships can be between people as well as between people and living and non-living others such as animals and soil (Celermajer et al., 2021; Winter and Schlosberg, 2023). In addition,

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these relations cross over time and space with humans and nonhumans here and now and elsewhere in the past and future (DuPuis and Goodman, 2005). A transition then (re)shapes relationships within the food system, including the beliefs and opinions held by people about the justness of (changes in) food system situations. In other words, as food system transitions unfold, people's perceptions of justice change.

It is important to understand how justice is perceived as perceptions of injustices can create disengagement or protest, whereas people's willingness to make changes or to carry the costs of a transition can be increased when they perceive changes as just (Bal et al., 2023; de Boon et al., 2023; Wijsman and Berbés-Blázquez, 2022). Although perceptions of justice have been studied in the context of food system transitions (e.g. de Boon et al., 2023; Erwin, 2022; Murphy et al., 2022; Puupponen et al., 2022), the situated, relational nature of these perceptions has been less explicit. In addition, these studies have often focussed on the justice perspectives of one group of food system actors, such as producers, and therefore not analysed interactions between the perceptions of different stakeholders. The aim of this paper is to complement current research on justice perceptions in food system transitions with insights into their situated, relational nature. We ask: how do actors from across the food system perceive justice in an ongoing food system transition in the North of the Netherlands? These actors are embedded within relations within the food system and it is through these relations that they perceive justice. By adopting an inductive, empirically driven approach to justice we are able to identify plural perceptions of justice (Wijsman and Berbés-Blázquez, 2022). We analyse two types of situated relationships. First, we identify the food system situations that people judged from a justice perspective and analyse the relationships embedded within these situations. Second, we analyse the relationship between people's different roles in the food system and how they perceived justice. We do this in the context of an ongoing regional food system transition in a case study in the North of the Netherlands. Here we conducted interviews and a workshop with actors from across the food system. The regional scale offers the opportunity to consider the multitude of initiatives and networks that make up a food system as well as the synergies between them. At the same time, this scale is small enough that it allows people to have an awareness of, and a connection with, food system changes that have taken place.

In the next section we theoretically ground our analysis of perceptions of justice in food system transitions. We then provide a description of the Dutch and regional food system context and describe the methodology. Subsequently, we present how participants perceived justice in the regional food system transition. In the discussion we reflect on the implications of our results for the ongoing food system transition and reflect on the methodological implications of our approach. We conclude with the need to move towards a reflexive Dutch food system transition.

## 2. Perceptions of justice in food system transitions

In this section we describe the theoretical concepts underpinning the analysis of perceptions of justice in food system transitions, including food system situations, theoretical justice perspectives, justice conceptualisations, and principles of justice.

When people are asked how they perceive justice in a (food system) transition they judge certain (food system) situations as just or unjust (Stumpf et al., 2016). As mentioned, these situations are context specific

and defined by people through their relations within the food system. Examples of food system situations are food affordability, working conditions in the food supply chain, or decision-making processes related to land use. These situations have justice implications for certain subjects of justice, for example for people with a low income, migrant workers, or Indigenous communities. How people judge (food system) situations depends on their relationships, experiences, and underlying norms and values (Coulson and Milbourne, 2021; Dirth et al., 2020; Wijsman and Berbés-Blázquez, 2022). In the context of a food system these relationships also connect with people's role(s) in the food system, whether only as food consumer or also as actor in other roles. In this paper we define a food system as a system in which actors are involved in producing, processing, distributing, and consuming food, and processing food waste (Ericksen, 2008) within the context of different food system environments, including the natural environment, government, finance, and education and research (Gaitán-Cremaschi et al., 2019).

Justice implications of food system transitions have been studied in the sustainability transitions and food justice literature. Three main theoretical justice perspectives underpin this literature: recognition justice (who or what is/ought to be considered as subjects of justice), distributive justice (what is/ought to be (re)distributed between whom), and procedural justice (how and by whom decisions are/ought to be made) (Coulson and Milbourne, 2021; de Bruin et al., 2023; Tribaldos and Kortetmäki, 2022; Wijsman and Berbés-Blázquez, 2022). Other justice perspectives also exist, including inter- and intra-generational justice, cosmopolitan justice, and multi-species justice (Celermajer et al., 2021; Coulson and Milbourne, 2021; Gupta et al., 2023). However, we argue that these perspectives are covered by recognition justice as they recognise specific subjects of justice: humans and/or nonhumans over time and space. For a more detailed overview of political philosophy in the context of sustainability transitions see Coulson and Milbourne (2021) and Gupta et al. (2023). Miller (2017, 2013) clarifies that justice implications only arise when a human agent, whether an individual or institution, does or does not fulfil their obligation to those recognised as subjects of justice. For example, producers can have difficulty accessing water for their crops or have low soil fertility due to unequal distributions of water bodies or soil types. These situations might be perceived as unjust; however, these should not be considered distributive injustices as those distributions are not due to a human agent. Only when human agents are involved, for example through overexploitation of soil or water bodies or by excluding certain communities from management decisions about these nonhumans, do these situations have justice implications. In those cases, human agents do not fulfil their obligation to producers, nonhumans, or communities and as a result justice implications emerge in these situations within more-than-human relations (Slocum et al., 2016).

People then judge these (food system) situations using what are called justice conceptualisations (Stumpf et al., 2016). Justice conceptualisations consist of three elements (de Bruin et al., 2023): 1) the subjects of justice (who is recognised), 2) the distributive or procedural justice implications due to action or inaction, and 3) the relevant principles of justice. De Bruin et al. (2023) found that in the food system transitions literature authors recognised six broad groups as subjects of justice: "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" (p.345). Examples of distributive justice implications they

found included food accessibility, food affordability, viable livelihoods and health and wellbeing. Procedural justice implications related to food democracy, food citizenship, and food sovereignty. De Bruin et al. (2023) also found that authors in the food system transitions literature often overlooked principles of justice when analysing justice implications in food system situations. However, these are important as they further clarify what people mean by (in)justice (de Bruin et al., 2023; Miller, 2013; Wijsman and Berbés-Blázquez, 2022). Gupta et al. (2023) argue that situations can be considered just or unjust if they are, or are not, based on six types of philosophical justice principles: equality (e.g. absolute equality or equal opportunity), proportionality (e.g. in proportion to contribution, needs, or desert), rights (e.g. having the right to be recognised, to participate, to flourish, to have autonomy), priority (e.g. prioritising the worst off first), sufficiency (e.g. everyone should have enough or at least a minimum threshold of something), or limits (e.g. limiting the allocation of something to a certain threshold) (Gupta et al., 2023; Miller, 2013, 2017; Stumpf et al., 2016). When analysing justice perceptions within the context of a food system transition, people will identify a range of food system situations and judge these situations using various and sometimes conflicting justice conceptualisations.

### 3. Methodology

Before we describe the methodology, we provide a short description of the Dutch and regional food system in 2022, the year when we did the interviews. We do this to contextualise the perceived justice of the food system transition in the North of the Netherlands. We also describe our own relationship to the regional case study.

#### 3.1. A description of the Dutch and regional food system in 2022

Geographically, the North of the Netherlands consists of the provinces of Drenthe, Groningen, and Friesland. Approximately 70 % of the land in the region is used for agriculture, mainly for livestock and crop production (Statistics Netherlands, 2024). Many producers depend on a relatively small number of agricultural input suppliers and five main purchasing companies, connected to a limited number of retailers (Distrifood, 2024; PBL, 2012), resulting in unequal power relations across supply chains. In 2022, import and export flows continue to be affected by both the recovery after corona and the war in the Ukraine (Jukema et al., 2023). Similar to the rest of the Netherlands, most food consumed in the region is not produced locally and most of what is produced in the region is exported to other countries, especially Germany, Belgium, France and the UK (Berkhout et al., 2022; Jukema et al., 2023; Tamsma et al., 2024). The food system in the North of the Netherlands is strongly linear, depending heavily on external inputs, and with large nutrient losses to the soil (Tamsma et al., 2024). At the same time however, the region is characterised by an increasing number of circular agriculture initiatives working towards a more sustainable food system (Hoogstra et al., 2024).

The linear, export-driven food system results in increasingly negative environmental effects including on water, soil, and biodiversity in the region and elsewhere. To address these environmental challenges different policy directives were implemented across Europe (Selnes, 2023). In 2018 and 2019 the Dutch Ministry of Agriculture, Nature and Food Quality (LNV) developed a new vision for the agri-food sector to address these environmental challenges and to offer a long-term perspective (LNV, 2019, 2018). Despite a number of nitrogen emission reduction measures the government had implemented over the years, the European Court of Justice in 2018 and later the State Council of the Netherlands ruled that these measures were not sufficient to safeguard protected nature areas. Selnes (2023) describes how, as a result of these rulings, many construction projects in the Netherlands were blocked and a large number of farmers lost their nitrogen emission rights. New measures were proposed by government, but then in 2019 large scale farmer protests erupted across the country, including in the North of the

Netherlands. Van der Ploeg (2020) points out that nitrogen was only used as a proxy to protest against any proposed and future measures that would restrict farmers.

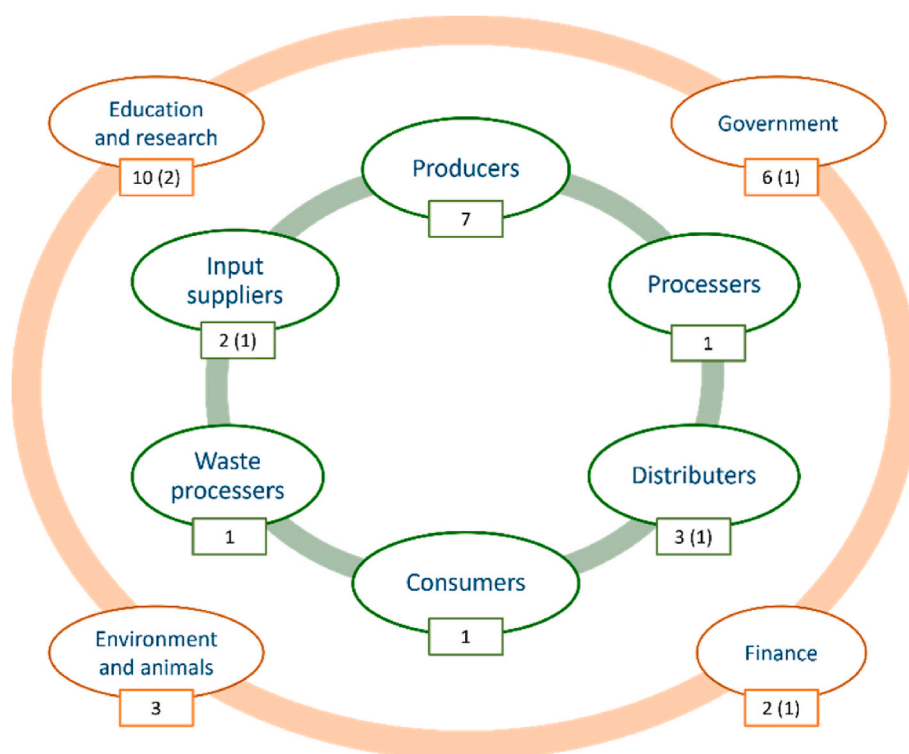
Since the 1950s, modernisation of Dutch agriculture aimed to produce food at a low cost so no one would go hungry. This modernisation has resulted in large-scale, intensive, specialised agriculture that is heavily dependent on external inputs and international commodity circuits (LNV, 2018; van der Ploeg, 2020). Van der Ploeg (2020) argues that farmers involved in this type of agriculture are strongly supported by agribusiness and farmer unions. In his analysis he describes how these farmers perceive a moral right or duty to feed the world and expand their production. They therefore do not accept restricting measures from parties outside agriculture, including government and consumers. This has also affected the food system context in 2022. That year a new Minister for Nature and Nitrogen Policy is installed and together with LNV they try to set up new negotiations with farmer unions, nature organisations, provinces, and research organisations to work together for a more sustainable future for agriculture. However, newly proposed plans are again opposed by farmers and farmer unions (Selnes, 2023). In addition, farmers are supported by an increasingly populist movement in Dutch politics, especially by the newly set up political farmer party, the Farmer-Citizen Movement (BoerBurgerBeweging) (Selnes, 2023). Van der Ploeg (2020) points out that this populist movement only addresses the relationship between producers and the state and not the unequal power relations that characterise the Dutch supply chain.

Within this larger context of the Dutch and regional food system, we, the authors, have our own relationship with the region. A research project<sup>1</sup> started in 2020 with the aim to co-develop scenarios and transition pathways towards a circular food system in the North of the Netherlands. The project was developed in response to the vision of LNV that sets out circular agriculture as the future pathway towards sustainable food production for the Netherlands (LNV, 2019, 2018). As part of the project, we set up a learning process that brought together academic and non-academic actors from across the food system. This paper draws on two parts of this learning process: a round of interviews and a workshop. Whilst circular agriculture was the focus of the project, within the research related to perceived justice in food system transitions we did not specify a particular directionality of the food system transition.

#### 3.2. Sampling and recruitment

To engage with a diversity of perspectives, we purposively sampled actors who were either personally, or via their organisation, involved in the food supply chain or related food system environments in the region (see Fig. 1). Appendix A provides a detailed overview of participants, including their food system roles and whether they participated in the interview and/or workshop. In total 28 participants were interviewed and 14 participants participated in the workshop. Seven participants participated in both. We sent invitations to participate in our learning process via email. If participation was declined (or withdrawn at a later stage) a similar food system actor was invited instead. A few participants had a specific role in the research project. Some were members of the research project team (four academic participants) and others worked for organisations that co-financed the project (two worked for two different input suppliers, two for a financial organisation, and two for a government organisation). Non-academic participants were interviewed before they joined the learning process. Verifiable verbal consent was obtained for participating in the interview and written consent for participating in the learning process.

<sup>1</sup> The 'Circular Agriculture in North-Netherlands: Daring scenarios and Interlinked Transformation' (CAN-DO-IT) project runs from 2020 to 2025.



**Fig. 1.** Overview of total number of people who participated in the interview and/or workshop categorised into their role within the supply chain (inner circle) or in food system environments (outer circle). Because some participants had more than one role in the food system, the second number indicates how many participants have a role as a secondary role. For example, three participants' main role was that of a distributor and one participant had this as a secondary role.

### 3.3. Data collection

This paper is based on data collected during online one-to-one interviews (January–May 2022) and a workshop a year later (May 2023). The standardised open-ended interview (Salmons, 2014) covered a number of topics: participants' role in the food system, how they would describe the current and future food system in the region, food system changes they were aware of and how they evaluated the food system transition in the region from a justice perspective. In this paper we focus on the part in which we asked participants: 'When thinking about changes in the food system, do you think the food system in the region is becoming more just or more unjust? I leave it to you to define justice.' The interviews lasted on average 25 minutes. Audio recordings of the interviews were transcribed in MS Word.

In the workshop we asked participants to interview each other in pairs using the same question as in the interview. This time we asked participants to analyse their own responses to make their conceptualisations of justice even more explicit. We gave participants an overview of theoretical principles of justice so that everyone had at least the same basic level of understanding. After participants interviewed each other, they analysed their own responses by filling in conceptualisation cards for each justice conceptualisation they had mentioned. These cards consisted of the three conceptualisation elements: who is recognised, what the distributive or procedural justice implications are, and which principles are relevant. We then discussed the conceptualisation cards in a plenary session and reflected on the exercise. The conceptualisation cards and reflection notes were digitised in MS Word.

### 3.4. Data analysis

We first categorised participants into participant types based on their main role in the food system. For this we analysed either their response to the first interview question or how they had introduced themselves at

the workshop. Where relevant we also identified their secondary role (Fig. 1 and Appendix A). In Atlas.ti 22 we then analysed the interview transcripts and the conceptualisation cards from the workshop following the process of thematic analysis as described by Braun and Clarke (2006).

- Step 1: we familiarised ourselves with the data.
- Step 2: we coded the interview transcripts combining deductive coding using the framework of de Bruin et al. (2023) with inductive coding. In this step we coded the three elements of a justice conceptualisation: 1) the subjects of justice, 2) the distributive or procedural justice implications, and 3) the types of principles of justice that were directly used by participants or where participants indirectly referred to certain principles of justice in their argumentation. At this stage we also coded 4) the situation that was judged by participants and 5) whether participants felt this situation was, or was becoming, more just or unjust.
- Step 3: Across the interviews we analysed the interrelations between the five elements mentioned in step 2. Based on this we identified emerging justice conceptualisations and the situations in which they occurred.
- Step 4: We grouped the emerged conceptualisations into a smaller number of themes and named these the overarching food system situations.
- Step 5: We analysed the conceptualisation cards that participants had filled in during the workshop using the codebook that emerged in the previous steps.
- Step 6: Finally, we grouped the justice conceptualisations that had emerged under each overarching food system situation and identified the types of participants who had mentioned each conceptualisation. Because the conceptualisations from the workshop came from conversations between two participants, we could not indicate the type of participant. For those, we identified whether a conceptualisation was also mentioned at the workshop.



We did the analysis in Dutch as this allowed us to remain close to the nuance of participants' responses in the interviews and workshop. This required us to translate the framework from de Bruin et al. (2023) and the six types of principles of justice described by Gupta et al. (2023) into Dutch. Once we completed the analysis, we translated the codebook into English. Analysis was mainly done by the first author to ensure consistency of analysis across the data. To create awareness of personal bias, the first author first analysed five interviews. The co-authors then reviewed the resulting codebook. After reorganising some codes, the agreed codebook was used by the first author in the analysis of the rest of the interviews. Before step 5 the updated codebook was again discussed with the co-authors. The final completed codebook in Dutch and English is available as supplementary material.

## 4. Results

In this section we present how participants perceived justice within the context of the ongoing food system transition in the North of the Netherlands. We first present the justice perceptions that emerged and then reflect on how participants' relations influenced their perceptions.

### 4.1. Justice perceptions

This section describes the justice perceptions of participants from the interviews and workshop. These findings are based on all the data, whether or not more than one person used a certain justice conceptualisation. As mentioned, our analysis revealed overarching food system situations in which participants perceived that justice implications arise. We present the perceptions of justice in relation to five overarching situations that emerged from the data: 1) changes in

production practices, 2) changes in food prices, 3) changes in the capacity to participate in the transition, 4) changes in societal appreciation and critique, and 5) power dynamics in the supply chain. Although presented separately, these five situations and related perceptions of justice interconnect.

Table 1 through 5 present the detailed justice conceptualisations related to each of the five overarching situations. In these tables the first two columns describe the food system situation that a conceptualisation relates to and whether this is a situation that remains just, remains unjust, is becoming more just, or becoming more unjust. The next three columns describe the recognition, distributive, and procedural justice implications for each situation. In the next column we identify the types of principles of justice participants used in their argumentation and how they were applied. We make the distinction between principles based on equality, proportionality, rights, priority, sufficiency, and limits (see section 2). In the last column we include the types of participants who mentioned a justice conceptualisation and whether they were mentioned during the workshop. In the text, illustrative quotes indicate the type of participant and a unique participant number that relates to Appendix A.

#### 4.1.1. Changes in production practices

The first overarching food system situation brings together justice implications related to production practices in the region (Table 1). The conceptualisations refer to the more-than-human relational context of the local and international food system, as participants judged production practices mostly in terms of the impact on nonhumans. They perceived practices that improve the health and wellbeing of nonhumans as just and intensive production practices as unjust. *'The entire direction towards a sustainable agricultural system, that I find just.'*

**Table 1**

Overview of justice conceptualisations related to the overarching situational theme 'changes in production practices'. The abbreviations stand for: producer – prod, processor – proc, distributor – dist, consumer representative – cons, waste processor – wpro, input supplier – inps, finance actor – fin, education and innovation actor – edu, environment and animals representative – env, and government actor – gov, and justice conceptualisations mentioned in the workshop – 'w'.

Food system situations related to changes in production practices	Remaining or becoming just or unjust	Who is recognised as subject of justice?	What are distributive justice implications?	What are procedural justice implications?	Types of principles of justice and their application	Mentioned by these types of participants
Exporting food from the region to geographic areas where food production is more difficult	Remaining just	Consumers elsewhere	Food availability		Proportionality - based on need	distr, fin
	Remaining unjust	Producers elsewhere	Inability to compete with imported products; Viable livelihoods		Equality - unequal opportunities	edu
Intensive production practices focused on increased efficiency and larger scale farming	Remaining unjust	Nonhumans (soil, water, air) locally and elsewhere	Reduced quality of natural resources – their health and wellbeing		Rights - not based on respect, Rights – not based on right to flourish	distr, cons, wpro, inps, edu, env, gov
Externalisation of negative environmental impacts	Remaining unjust	Humans and nonhumans elsewhere	Opportunities to produce food; Reduced quality of natural resources – their health and wellbeing		Sufficiency - not based on sufficiency, Equality - unequal opportunities, Rights – not based on right to flourish	fin, env
Import of natural resources from elsewhere	Remaining unjust	Humans and nonhumans elsewhere	Opportunities to produce food; Reduced quality of natural resources – their health and wellbeing		Sufficiency - not based on sufficiency, Equality - unequal opportunities, Rights – not based on right to flourish	fin, gov
Disproportionate amount of natural resources used by intensive production practices	Remaining unjust	Future generations	Opportunities to produce food		Sufficiency - not based on sufficiency, Equality - unequal opportunities	cons, wpro, edu, env, gov
Changes in production practices towards more sustainable practices	Becoming just	Nonhumans (soil, water, air)	Improved quality of nonhumans – their health and wellbeing		Rights - based on respect, Rights – based on right to flourish	prod, cons, edu, env, gov, w
Increasing use of by-products of food production in feed	Becoming just	Nonhumans (production animals)	Health and wellbeing		Rights – based on right to flourish	env
Improved living conditions for production animals	Becoming just	Nonhumans (production animals)	Health and wellbeing; Opportunity to behave naturally		Rights – based on right to flourish; Rights – recognition	w
Recognition of rights of production animals and nature in agreements	Becoming just	Nonhumans (production animals, nature)	Health and wellbeing; Geographical space for nature	Recognition; Legitimacy	Rights – based on right to flourish; Rights – recognition	w

**Table 2**

Overview of justice conceptualisations related to the overarching situational theme ‘changes in food prices’. The abbreviations stand for: producer – prod, processor – proc, distributor – dist, consumer representative – cons, waste processor – wpro, input supplier – inps, finance actor – fin, education and innovation actor – edu, environment and animals representative – env, and government actor – gov, and justice conceptualisations mentioned in the workshop – ‘w’.

Food system situations related to changes in food prices	Remaining or becoming just or unjust	Who is recognised as subject of justice?	What are distributive justice implications?	What are procedural justice implications? <sup>a</sup>	Types of principles of justice and their application	Mentioned by these types of participants
Unaffordability of good quality food	Remaining unjust	Marginalised consumers due to their low income	Health and wellbeing		Equality - unequal opportunities	prod, gov, w
Consumers who can afford higher prices, but choose not to buy sustainably produced food	Remaining unjust	Producers	Not contributing to a viable livelihood		Proportionality - not based on ability to carry the cost of the transition, Rights – not based on recognition	prod, edu
Higher prices for sustainably produced food	Becoming just	Producers	Increased income; Contribution to a viable livelihood		Proportionality – based on contribution, Rights – recognition	prod, proc, inps, edu, env, gov, w
	Becoming unjust	Marginalised consumers due to their low income	Food affordability		Equality - unequal opportunities	prod, edu, gov

<sup>a</sup> Please note that in this overarching situational theme participants did not mention procedural justice implications.

(Education and research (22)) *‘Justice is basically when the soil gets a chance again. [...] By letting the soil work better, you get better quality produce from your land [...] so you are working in a just way within the food system.’* (Environment and animals (29)).

Participants explained that intensive practices continue to use a disproportionate amount of nonhumans, including soil, land, and other nonhuman inputs, resulting in unjust negative environmental effects. *‘People call for more intensive, and in my opinion more unjust, production practices as these tax a larger amount of spatial quality and environmental quality and the soil and everything else.’* (Environment and animals (28)). Here participants also recognised the opportunities for future generations to produce food. *‘I think the larger the scale, the larger the over-exploitation. And towards our future generations, is it justified, that we use the land in such a way that we exhaust it? No, I don’t think that that is just towards our future generations.’* (Waste processor (13))

Perceptions of justice also related to international more-than-human relationships embedded in the export-driven Dutch food system. A distributor involved in an international supply chain perceived it just that food produced in the fertile region of the North of the Netherlands continues to be exported to contribute to food availability for people elsewhere. However, a participant involved in education and research perceived it as unjust when export flows from the region disrupt livelihoods of producers elsewhere. Others reflected on import flows that are needed to maintain high levels of production in the region. Participants, specifically those involved in the financial sector and in government, perceived these flows unjust in relation to opportunities to produce food elsewhere. *‘We produce quite a lot here, but of course we have to get a lot of resources from elsewhere to be able to produce here [...]. So, yes, if you look at it from that perspective, looking at the whole nutrient cycle, then yes that might be unjust.’* (Finance (16))

In addition, participants in the workshop brought forward conceptualisations related to the recognition of the rights of nonhumans to flourish within the food system. Participants perceived it just that policy frameworks increasingly recognise nonhumans, including nature and production animals. At the time of the workshop negotiations were ongoing to develop an agreement related to the welfare of production animals. Participants perceived that those negotiations contributed to procedural justice as they gave voice to animals. Overall, participants described that the obligation to make the food system more just in relation to production practices was mainly with producers, although they recognised that this depends on the (lack of) capacity of producers to participate in more sustainable practices.

#### 4.1.2. Changes in food prices

Participants recognised that food prices had increased in general, but

also that sustainably produced food had become more expensive (Table 2). Participants with roles across the food system considered higher prices for producers as more just as this recognises their work and contributes to viable livelihoods. *‘Justice is in my opinion that, on the one hand, the entrepreneurs who work in the food system earn a fair income ... that they receive a reasonable payment for the labour they provide and the input of capital and, on the other hand, that when they need to increase the labour and capital input that they receive a better price’* (Government actor (35))

However, participants reflected that for consumers with a low income higher prices make the food system more unjust. This affects food affordability and consequently people’s health and wellbeing. A producer explained: *‘... it is true that healthier food, let’s say, is more expensive. And therefore, not affordable for everyone, and yes, that I also find unjust.’* (Producer (1)). This perspective was shared by several government actors, one of whom also referred to the systemic injustice related to the effect of intergenerational poverty on peoples’ health and wellbeing in the region.

Participants, especially those involved in education and research, also perceived that those who have more ability to carry the cost of the transition, do not always do this. *‘I find it unjust how producers are put under pressure because consumers pay so little’* (Education and research (18)). They argued that those with high(er) levels of income on average spend too low a percentage of their income on food. *‘... giving producers better compensation [...] that is for those with average or higher incomes not really a problem, because you don’t spend that much money on food anyway.’* (Education and research (20))

These conceptualisations highlight socio-economic relationships within the food system in which consumers have the obligation to support producers. Participants perceived that ensuring producers’ income is a means for consumers to build connection with and show their appreciation for the labour of producers. At the same time, these conceptualisations indicate important underlying income inequalities within Dutch society. Participants argued that the government should ensure equal opportunities for consumers who cannot afford higher food prices.

#### 4.1.3. Changes in the capacity to participate in the transition

This third food system situation relates to changes in the capacity, especially of producers, to participate in the transition (Table 3). There was a recognition that society and government are increasingly demanding changes in the food system towards sustainability. Participants perceived it was just when the capacity of producers to participate in this transition was improved through financial compensation. This could be in the form of government subsidies or new marketing concepts

**Table 3**

Overview of justice conceptualisations related to the overarching situational theme ‘changes in capacity to participate’. The abbreviations stand for: producer – prod, processor – proc, distributor – dist, consumer representative – cons, waste processor – wpro, input supplier – inps, finance actor – fin, education and innovation actor – edu, environment and animals representative – env, and government actor – gov, and justice conceptualisations mentioned in the workshop – ‘w’.

Food system situations related to changes in capacity to participate	Remaining or becoming just or unjust	Who is recognised as subject of justice?	What are distributive justice implications?	What are procedural justice implications?	Types of principles of justice and their application	Mentioned by these types of participants
Dependency on financial sector through loans and debt	Remaining unjust	Producers		Capacity to participate; Dependency on other actors	Rights – reduced autonomy	prod, edu, env
Lack of recognition of historic roles both financial institutions and governments played in pushing producers to intensify and enlarge their farms	Remaining unjust	Producers		Not taking responsibility	Rights – not based on responsibility; Rights – lack of recognition	edu
High prices for land	Remaining unjust	New entrants and younger producers taking over from existing producers	Capacity to participate; Inaccessibility of resources		Equality – unequal opportunities	edu, gov
Increasing transparency in the supply chain	Becoming just	Consumers		Access to knowledge and information	Rights – transparency	distr, cons, env, gov
Government subsidies and regulations that support changes towards sustainable practices	Becoming just	Producers		Capacity to participate; Dependency on other actors	Proportionality – based on contribution, Equality – more equal opportunities, Proportionality – based on ability to carry the cost of the transition; Rights - autonomy	inps, gov, w
Supermarkets and processors that have set up marketing concepts that ensure higher prices	Becoming just	Producers		Capacity to participate; Dependency on other actors	Proportionality – based on contribution, Equality – more equal opportunities, Proportionality – based on ability to carry the cost of the transition	prod, gov, w
Cooperatives that ensure higher prices	Becoming just	Producers	Viable livelihood – guarantee of prices	Capacity to participate; Representation	Proportionality – based on contribution; Solidarity; Rights - recognition	dist, w
New business models related to e.g. ecosystem services or sustainable energy production	Becoming just	Producers	Viable livelihoods – diversification of income		Rights – autonomy; Transparency; Proportionality – based on contribution	proc, inps, gov, w
Willingness to change practices, but unable to do so due to financial and regulatory restrictions	Becoming unjust	Producers, new entrants and younger producers taking over from existing producers, producers who do not fit regulatory norms		Capacity to participate; Dependency on other actors; Willingness to change	Equality – unequal opportunities, Rights – lack of autonomy; Rights – lack of recognition	prod, edu
Fines for producers who do not become more sustainable	Becoming unjust	Producers	Capacity to participate; Viable livelihoods	Willingness to change	Equality – unequal opportunities, Rights – lack of autonomy	edu
Changing requirements over time	Becoming unjust	Producers		Capacity to participate; Dependency on other actors	Rights – reduced autonomy	prod, inps, fin, edu, gov, w
Increasing and tightening government regulations	Becoming unjust	Producers		Capacity to participate; Dependency on other actors	Rights – reduced autonomy	prod, inps, fin, edu, env, gov, w

**Table 4**

Overview of justice conceptualisations related to the overarching situational theme ‘changes in societal appreciation and critique’. The abbreviations stand for: producer – prod, processor – proc, distributor – dist, consumer representative – cons, waste processor – wpro, input supplier – inps, finance actor – fin, education and innovation actor – edu, environment and animals representative – env, and government actor – gov, and justice conceptualisations mentioned in the workshop – ‘w’.

Food system situations related to changes in feelings of societal appreciation and critique	Remaining or becoming just or unjust	Who is recognised as subject of justice?	What are distributive justice implications?	What are procedural justice implications?	Types of principles of justice and their application	Mentioned by these types of participants
Traditional bocage landscape (small scale, nature inclusive agricultural landscape)	Remaining just	Nonhumans - landscape	Appreciation for cultural-historic landscapes		Rights - recognition	wpro
Regulations related to food safety are strict and processing and logistics can be difficult to organise	Remaining unjust	Distributor	Lack of recognition of knowledge of regulations and logistics		Rights - lack of recognition	dist
Short supply chains in which consumers buy more local produce or invest in local farms	Becoming just	Producers, local producers	Contributing to viable livelihoods	Increased appreciation and recognition	Proportionality – based on contribution, Rights – recognition, Proportionality - based on ability to carry the cost of the transition	prod, distr, w
Farms that are set up by consumers	Becoming unjust	Existing producers		Misrecognition	Rights - not based on recognition	prod
Feeling of disproportionate responsibility attributed to producers to address negative (environmental) impacts related to the food system	Becoming unjust	Producers		Responsibility	Proportionality - share of responsibility not based on contribution, Rights – not based on recognition	inps, edu, env
Feeling disproportionate critique	Becoming unjust	Distributors		Misrecognition of share of responsibility	Proportionality - share of responsibility not based on contribution, Rights – not based on recognition	distr
Increasing critique that misrecognises improvements made in production practices (Social) media presenting a one-sided story	Becoming unjust	Producers		Misrecognition of work done	Rights - misrecognition	prod, env, gov
Citizens who say they support farmers, but do not act on it	Becoming unjust	Producers	Not contributing to viable livelihoods	Misrecognition of work done	Rights - misrecognition	prod
Producers sharing honest stories about what is happening	Remaining just	Consumers, producers		Access to knowledge	Rights - not based on recognition	w
					Rights - transparency	w

from supply chain actors. However, it was perceived as unjust when no or too little financial compensation was offered whilst demands continued to increase or change.

Participants, especially those involved in education and research, described that many producers are willing to make changes, but are restricted to do so due to a lack of access to (financial) resources. This in turn creates unequal opportunities to participate in the transition. Participants recognised the debt many producers are in, referring to the phrase ‘*Je kan niet groen doen als je rood staat*’ (i.e. you cannot invest in green (sustainability) if you are in the red (debt)). This makes it difficult for new entrants and for younger producers taking over from existing producers. One participant explained: ‘*You see the willingness to make changes, but sometimes due to pressure of investors you [producers] have to continue [with intensive production]*’. (Education and research (20)). This same participant perceived the support for sustainable practices as punishment for those producers who are locked into intensive production practices by financiers. The access to (financial) resources also depends on what other actors within the food system define as practices that fit within the transition. A workshop participant highlighted how financial support was inaccessible to them because the changes they had made on their farm did not fit within the definition of what constituted ‘sustainable practices’ according to other parties in the supply chain. In this context one participant involved in research and education recognised the historic roles the finance sector and government have played in pushing producers towards certain (intensive) production practices.

The capacity of consumers to participate in the transition was also mentioned. Participants perceived that it was just when increasing transparency, especially in short supply chains, helps consumers to make informed choices and contributes to food sovereignty. ‘*With increasing number of short and transparent supply chains, it is becoming more*

*just for consumers, I think, because they have more insight into their food, and knowledge about where it is produced and how it is produced*’. (Government (32))

These conceptualisations show how the capacity to participate often depends on (un)equal opportunities that are a result of underlying inequalities embedded within economic relationships between producers and other supply chain actors, government, and the financial sector. As such they interconnect with power dynamics in the supply chain which we further explore in section 4.1.5.

#### 4.1.4. Changes in societal appreciation and critique

This overarching situation brings together conceptualisations related to the emotional side of the food system transition (Table 4). In recent years societal appreciation for farming in general and for producers in particular has changed. Participants perceived that the producer-citizen relationship is becoming more just as more citizens are recognising the work done by producers, for example by paying more for sustainably produced food. However, most participants perceived an increase in critique, which they felt was unjust for two reasons. The first relates to who in the transition is allocated responsibility. Several participants, although not producers themselves, perceived that producers are allocated a disproportionate amount of responsibility to address negative environmental challenges within the Dutch food system. In the context of reducing Dutch nitrogen emissions one participant said: ‘*I think that many producers feel unjustly treated, in comparison to other sectors, with regards to the regulations that are put upon them*’ (Education and research (20)). Another participant clarified that ‘*many of these [environmental] challenges end up as the responsibility of farmers*’ (Input supplier (15)).

The second reason has to do with misrecognition of work done by producers and distributors. One producer perceived the increase in



**Table 5**

Overview of justice conceptualisations related to the overarching situational theme 'power dynamics in the supply chain'. The abbreviations stand for: producer – prod, processor – proc, distributor – dist, consumer representative – cons, waste processor – wpro, input supplier – inps, finance actor – fin, education and innovation actor – edu, environment and animals representative – env, and government actor – gov, and justice conceptualisations mentioned in the workshop – 'w'.

Food system situations related to power dynamics in the supply chain	Remaining or becoming just or unjust	Who is recognised as subject of justice?	What are distributive justice implications?	What are procedural justice implications?	Types of principles of justice and their application	Mentioned by these types of participants
Powerless position of producers in the supply chain leading to little influence on the price of food	Remaining unjust	Producers, producers with long-term contracts	Reduced income; Viable livelihood	High dependency on other actors	Proportionality - not based on contribution, Rights - little autonomy	prod, distr, edu, env, gov, w
Producers locked into certain production practices to earn back investments made	Remaining unjust	Producers		High dependency on financial sector	Rights - little autonomy	prod, edu
Lack of representation in large farmer interest groups of producers who produce sustainably	Remaining unjust	Producers who produce sustainably		Lack of influence within supply chain and government processes	Rights - lack of representation	prod
Export from the region NNL to the international market	Remaining unjust	Processors in the region		High dependency on requirements of global supply chain that clash with stricter national requirements	Rights - autonomy	inps, gov
Dutch export into other countries competing with local producers	Remaining unjust	Producers elsewhere	Viable livelihood		Equality - unequal opportunities	edu, gov
Higher food prices on the global market due to protectionism	Remaining unjust	Consumers elsewhere	Food affordability		Equality - unequal opportunities	w
Import of natural resources from elsewhere for processing in the region	Remaining unjust	Humans and nonhumans elsewhere	Reduced livelihood opportunities	Dependency on global supply chain	Equality - unequal opportunities	fin, gov
Producers set up shorter supply chains or farm shops	Becoming just	Producers, consumers	Viable livelihoods - influence on the price of food		Rights – autonomy	prod, gov
Increasing requirements for certain products and marketing concepts without necessarily providing more income	Becoming unjust	Producers who made (large) investments to participate in marketing concepts	Locked-in dependency on processors and supermarkets		Proportionality - not based on contribution, Equality – unequal opportunity	prod, fin, edu
Businesses taking the lead when deciding the future of the food system	Becoming unjust	Society		Too much influence on the future of the food system	Equality - unequal opportunities; Proportionality - disproportionate influence	w

criticism as a misrecognition of improved production practices. They felt this was unjust and even undermined the willingness in the agri-food sector to make changes. *'I think we do things much better than 10 years ago, whereas there is much more criticism on what we do than 10 years ago. And that of course feels very unjust. And that feeling of injustice, I think this affects the sector a lot to make changes [...] it reduces the willingness to change'* (Producer (4)). Another producer had seen consumers setting up their own farms. This participant perceived this as a misrecognition of the work done by existing producers. Interestingly, not only producers suffered from misrecognition. Also, distributors mentioned that their work was often unjustly criticised. They felt that others across the supply chain did not recognise their knowledge and skills and one also felt that the critique they receive is disproportionate to the role they play in the food system. Important to note here is that this participant did not perceive distributors as a powerful actor. Instead, they perceived consumers as powerful. Overall, these conceptualisations highlight how critique, when perceived as unjust, can undermine people's willingness to participate in the transition.

#### 4.1.5. Power dynamics in the supply chain

The previous food system situations referred to changes, whereas power dynamics in the supply chain have mostly remained the same. According to participants these dynamics are locked into an unjust distribution of power in which producers have the least amount of

power and supermarkets and distributors the most (Table 5). Producers themselves recognised this, but also other types of participants, including a government actor. In shorter and more local supply chains participants perceived more just power dynamics between producers and consumers. However, the unequal distribution of power across conventional supply chains was perceived as unjust for producers. As a producer explained: *'The conventional farmer cannot decide what they grow or influence the price they will get for their crop, nor what they are left with at the end of the day. All this is decided by the supply chain.'* (Producer (1)). Farmer unions can be powerful actors representing the interests of producers, but as one producer explained: *'I think the large farmer interest groups are not active in serving the interests of producers, let alone towards sustainability.'* (Producer (2)).

Participants involved in finance, government, and input supply also reflected on power dynamics in international relationships. They perceived it was unjust when Dutch export and import flows affect power dynamics in other countries, especially for producers and consumers elsewhere. They also recognised the dependency of processors in the region on global supply chain actors and what they saw as an unjust tension between requirements set by these global actors and stricter requirements set by the Dutch government.

In 4.1.3 we showed how participants perceived that the financial sector and the government greatly influence the capacity of producers to participate in the transition. Interestingly, a distributor argued it is

consumers who are powerful and that they, as distributors, should not be held accountable or seen as a powerful actor: *'we dutifully follow the market'* (Distributor (11)). However, in the workshop participants perceived the government as having little power. They felt it unjust that due to a lack of government steering businesses are now deciding the future directionality of the food system. These conceptualisations show that all participants perceived that power continues to be unjustly distributed across the food system. However, who is perceived as having more power than others depended on who was asked.

#### 4.1.6. In summary

Overall, participants in both the interviews and the workshop perceived that the food system in the region is changing, but the results show that (in)action of actors leads to both just and unjust implications. Three examples illustrate this. First, participants perceived that the food system is becoming more just as there is more financial and regulatory support for producers to adopt sustainable production practices that improve the health and wellbeing of nonhumans. However, they also identified how unjust negative environmental impacts continue to be caused by the use of (intensive) production practices and that financial and regulatory restrictions create unequal opportunities for producers to adopt sustainable practices. Second, participants felt that the food system is becoming more just where producer-consumer relationships are becoming closer and where there is increased societal recognition of, and payment for, producers' work. However, during the transition societal critique of producers has also increased which was perceived as unjust and higher food prices have led to food unaffordability for some people. Third, participants perceived that international flows of food and resources contribute to just food availability, but that unequal power dynamics in the Dutch and global supply chains remain in place and unjustly affect health and wellbeing of nonhumans, livelihoods of producers, and food availability of consumers here and elsewhere. These examples show how the food system is becoming more just, whilst at the same time actors' (in)actions reproduce injustices and create new ones.

#### 4.2. Participants' relations and perceptions of justice

So far, we have presented food system situations and related justice conceptualisations that emerged from the analysis. Here we reflect on the influence of participants' role in the food system on how they perceived justice. We describe per type of participant if, and if so how, they related their perceptions of justice to their role in the food system.

Producers' justice perceptions focussed on their capacity to participate in the transition, especially financially, and the underlying power dynamics in the supply chain. When producers referred to their own role within the food system this was often as subjects of justice who have little power within the supply chain and within relationships with government and financial actors. Distributors perceived themselves as misrecognised by others in the supply chain and recognised themselves as subjects of justice, whereas none of the other participants regarded them as such. The participant who worked with consumers was the only one to mention the influence of marketing on what people buy. Other participants recognised how access to information had improved and helped consumers to make more informed choices. However, this consumer representative pointed to the power of supermarkets to influence consumers, which counters the point made by a distributor that consumers are more powerful than they are.

Perceptions of justice of input suppliers showed that they recognised the environmental challenges faced by the food system although they did not mention their own possible contribution to these challenges. Instead, they specifically focused on the restrictive role of government

regulations in supporting a transition of the food system. Similar to the input suppliers, finance actors reflected on the environmental challenges and global nature of the Dutch food system. Although perceived as a powerful actor by many participants, they themselves did not reflect on their role as supporting or undermining the transition. Both the processor and waste processor perceived their own role in the food system as very limited. The processor felt uncomfortable to respond to the question as they said they lacked quantitative data about changes in the food system. In the end they focused on the financial position of producers to participate in the transition, but did not reflect on the influence processors have on this position. The waste processor introduced their response as very personal. They did not identify any justice implications related to waste, but related justice to the cultural-historic value of agricultural landscapes.

Those involved in education and research recognised more than other types of participants the challenges faced by young farmers and new entrants, which might be because they work more closely with these groups than other participants. These participants had seen a willingness of these groups to participate in the transition towards sustainability, but also how the capacity to do so depended on financial and regulatory restrictions. Representatives of animals and the environment all recognised the ongoing work by producers that improves the health and wellbeing of nonhumans and mentioned a misrecognition of what is already going on. However, they also reflected on the negative environmental impacts of the food system locally and elsewhere. As all of them also work with producers they recognised challenges related to the capacity to participate specifically for this group. Relative to other participants, government actors mentioned their own obligation to support a transition to a more sustainable food system. Interestingly, some also critically reflected on EU subsidy schemes and other government regulations that undermined producers' capacity to participate.

Overall, we found that producers and distributors spoke from direct experience of (in)justices whereas in other conceptualisations participants spoke about others they knew or had worked with, or about imagined others based on what they had heard or read. Interestingly, most participants referred to other actors in the food system as having the obligation to enact change, although distributors, the consumer representative, and government actors did refer to their own obligation to address (in)justices.

### 5. Discussion

The aim of this study was to gain insight into how justice is perceived within the context of the ongoing regional food system transition in the North of the Netherlands and by doing so better understand the situated, relational nature of justice in the food system transition. Here we reflect on the implications of our results for the ongoing food system transition and the methodological implications of our approach. We conclude with the need to move towards a reflexive (Dutch) food system transition.

#### 5.1. Justice implications for the ongoing transition

Our findings show various and at times conflicting perceptions of justice from participants across the food system. These perceptions relate to recognition, distributive, and procedural justice implications of the food system in a variety of food system situations. Participants' role on the food system influenced their perceptions, but we also found that people perceived justice in relation to food system situations that went beyond their professional role. Coulson and Milbourne (2021) theorised that justice is multi-scalar, multi-temporal and more-than-human. Our findings included relationships at local, regional, national, and

international scale as well as relationships between current and future generations and humans and nonhumans. Reflecting on the situated, relational nature of perceived justice we identify four main insights.

A first insight relates to how and between whom the costs of transition processes are distributed (Heffron and McCauley, 2018; Newell and Mulvaney, 2013). Our findings show that feelings of misrecognition, blame, and disproportionate allocation of responsibility play a role in the transition of the Dutch and regional food system. Similar perceptions of injustice were found in surveys with Dutch farmers and in interviews with beef farmers in Ireland and dairy farmers in Finland (Murphy et al., 2022; Puupponen et al., 2022; van der Ploeg, 2020). Interestingly, in our study we found that it was not only producers who felt misrecognised, but also distributors. This also interconnects with the perception of some participants that not all consumers are doing what they should or could do, especially those with higher levels of income. These perceptions all relate to what people perceive as a just distribution of responsibility across food system actors. Aarts and Leeuwis (2023) argue that historically the responsibility for change in the Dutch food system has been placed on producers and consumers and not on more powerful actors such as the agri-food industry. Blythe et al. (2018) consider it a dark side of sustainability transitions when certain groups carry a disproportionate amount of the costs or (emotional) burdens, especially when these groups have limited capacity to participate in the transition (Blythe et al., 2018; McGowan and Antadze, 2023).

Secondly, the ongoing transition is shaped by just and unjust power dynamics across the food system. As described, the Dutch food system is characterised by a small number of input suppliers and purchasing companies. The dependency of producers on these companies makes these companies powerful actors in the supply chain (Avelino, 2017). Participants perceived these power dynamics as unjust for producers, which is a perception that is shared by LNV (LNV, 2022). These power dynamics also affect the food system transition. Studies have found that powerful actors can co-opt changes in the agri-food sector to fit their aims and objectives (Darnhofer, 2014; Hopma and Woods, 2014; Ollinaho and Kröger, 2021). In the Dutch context participants identified how powerful (agri)businesses have stepped in to shape the transition, for example through marketing concepts. However, the influence of these companies on government policies has also created antagonistic power dynamics (Avelino, 2017) as evident in their support of the farmer protests (van der Ploeg, 2020). Despite the unequal power distribution across the Dutch food system, participants also identified food system initiatives with other power dynamics. For example, participants perceived that in short supply chains producers and consumers are mutually dependent and in cooperatives the collective goals empower producers (Avelino, 2017). Indeed, the North of the Netherlands is characterised by cooperative ways of working within and across sectors and across provinces (AANN, 2023; de Wolf et al., 2018). These are powerful ways of organisation as in the past farmer cooperatives in the region have also been able to influence government policies (Hermans et al., 2013). These examples show that within the context of perceived unjust power dynamics, a food system transition can also support a redistribution of power across food system actors.

Thirdly, in their perceptions of justice participants pointed out how underlying inequalities in income and participation underpin the food system and affect people's health and wellbeing. Research has shown that when actors do not recognise and address underlying social inequalities, such as income or health inequalities, or inequalities in the capacity to participate in decision-making processes, the dominant system remains in place (Agyeman and McEntee, 2014; Loo, 2014). In the Dutch context this is especially relevant for two subjects of justice: people with a low income and people with a migrant background. In 2022 food prices increased on average with 9–11 % in comparison to

before the corona period (Berkhout et al., 2022) which affected people with a low income even more. Veldkamp and van der Hoeve (2024) show that access to (a variety of) good quality food is unequally distributed across the Netherlands and affects people's health and wellbeing. Participants in our study did recognise people with low income as subjects of justice and connected their income inequality with health inequalities. However, most discussed income inequalities as a characteristic of Dutch society rather than as something that also needed to be addressed. In addition to people with low income, people with a migrant background are also part of the food system. In the food system transitions literature migrant workers are recognised as specific subjects of justice in relation to difficult working conditions and labour exploitation (Dale, 2020; de Bruin et al., 2023; Zimmerer et al., 2020). In our study participants did not refer to people's migrant status, nor did they recognise migrant workers. This is interesting as migrant workers do work in the food system in the region and form an important part of the work force in the Dutch agri-food sector (SER Noord-Nederland, 2022). According to Siegmann et al. (2022) many face difficult labour conditions as the flexible Dutch labour market has created precarious working conditions for many migrants. Coulson and Milbourne (2021) refer to the unrecognition of migrant labour in food systems as one of the 'historically embedded invisibilities of food injustice' (p. 56). The food system transition in the Netherlands has to take into account underlying income, participation, and health inequalities to ensure that the transition does not exacerbate existing injustices for people with a low income and migrant workers.

Lastly, we have found different types of more-than-human relationships. In this study we responded to the call from other authors (de Bruin et al., 2023; Kaljonen et al., 2021; Tschersich and Kok, 2022) to increase engagement with nonhumans in food system transitions by bringing in representatives of animals and the environment (Bastian et al., 2017). These representatives and most other participants recognised nonhumans as subjects of justice and referred to more-than-human food system relations. This included more reciprocal relationships between humans and nonhumans and more anthropocentric relationships (Celermajer et al., 2021; Gupta et al., 2023) in which health and wellbeing of nonhumans influenced opportunities of food production for current and future humans. Interestingly, participants mentioned soil in relation to justice and described soil as living matter. In the Netherlands as well as in the region improving and safeguarding soil health is considered a key part of future food systems (AANN, 2017; LNV, 2018). Winter and Schlosberg (2023) suggest people find non-living matter more difficult to grasp as a subject of justice, but these conceptualisations indicate this is not necessarily the case in a food system context in general and that of the Dutch food system in particular. The work that is ongoing to create a covenant about animal welfare in food production systems (LNV, 2023) was mentioned as an example of procedural justice. Having said that, the recognition of nonhumans as subjects of justice who have a right to flourish, animals and soil alike, is done within the bounds of a system that centres anthropocentric relationships.

## 5.2. Methodological reflections

Reflecting on the methods used we offer three insights. First, a key part of our inductive, empirical approach (Wijsman and Berbé-Blázquez, 2022) was to ask participants to define justice themselves. This allowed participants to conceptualise justice in different ways, either by starting with a subject of justice, a procedural or distributive (in)justice implication, or a food system situation. For example, some participants first identified a group for whom they perceived the food system was becoming more (un)just and then explained what it was that made it (un)just for this group. At times participants connected one justice

conceptualisation with another and reflected on the interrelations between them. For example, they mentioned higher food prices as just for producers but then continued to reflect on the unjust implications on food affordability for people with a low income. This empirically-driven approach, opposed to a more theory-driven understanding of perceptions of justice, helped us to gain insights into plural and interrelated justice conceptualisations. Recent work on perceptions of justice by [de Boon et al. \(2023\)](#) takes a more theory-driven approach and centres justice perspectives of others, including philosophers, researchers, and other stakeholders. Their study provides valuable insights into how people evaluate these other perspectives, but we would argue that their study does not capture situated, relational conceptualisations of justice.

Second, researchers can create spaces in which stakeholders can come together to explore plural justice perceptions in ways that disrupt underlying power dynamics. We did this in the workshop by giving everyone an equal voice. Participants in the workshop reflected that the conceptualisation cards helped them to make their own conceptualisations of justice more explicit, which is an important step in creating awareness of perceived (in)justices ([de Bruin et al., 2023](#); [Dirth et al., 2020](#)). Where the interviews were separate engagements with individuals, the workshop offered an opportunity to share conceptualisations of justice between participants. Afterwards participants said they had gained a sense of validity about how they themselves perceive justice and that they had valued hearing other perspectives than their own. Recognising plural perspectives helps to create conditions for democratic directionality in just food system transitions ([Duncan et al., 2022](#)). The workshop will not change the course of the food system transition in the region, but the approach can be used by other researchers and stakeholders to further develop a reflexive food politics ([Coulson and Milbourne, 2021](#); [Fraser, 2008](#)).

Third, in food system transitions researchers are also powerful actors as we engage with and bring together certain stakeholders and analyse and write about their perspectives on justice ([Whitfield et al., 2021](#)). It is important that we are also explicit about how we included or excluded certain voices and conceptualisations of justice ([de Bruin et al., 2023](#)). Through adopting an inductive approach to justice, we did not exclude any perceptions of justice. However, our sampling approach did miss the voices of some groups later recognised as subjects of justice. Some participants had experiences of marginalisation in their role of producer, but we did not engage directly with people with a low income. Future research should aim to engage with people who have experiences of marginalisation to ensure their perspectives of justice in the food system transition are heard and taken into account.

## 6. Towards a reflexive food system transition

We set out to understand how actors from across the food system perceive justice in an ongoing food system transition in the North of the Netherlands. We found various and at times conflicting perceptions of justice that referred to multi-sale, multi-temporal, and more-than-human relationships within the food system. The wide range of food system situations and related conceptualisations suggest that the transition so far has made some food system situations more just, but has also reproduced injustices and created new ones. Participants recognised different subjects of justice which raises the question how to go forwards from here. We argue that these groups should not be pitted against each other in order to create a theoretically just food system. Rather we support what [Dupuis et al. \(2011\)](#) call 'a reflexive food politics' in which various and at times conflicting conceptualisations of justice coexist. The result is an imperfect but contextually more just food system based on perceptions of justice from all who are part of the

community. The community in our case is formed of everyone who has been, is, and will be affected by the food system. Going forward further conversations are needed between actors across the Dutch and regional food system. The perceptions of justice found in this study can be used as a starting point of that conversation or our approach can be used to ask how people perceive justice in the food system context. They can then compare or contrast their perspective with those found in this study. We conclude that attending to the situated, relational nature of justice perceptions in ongoing food system transitions helps to create awareness of, and the opportunity to address, existing and new (in)justices.

## CRediT authorship contribution statement

**Annemarieke de Bruin:** Writing – review & editing, Writing – original draft, Visualization, Validation, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Imke J.M. de Boer:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Niels R. Faber:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Katrien J.A.M. Termeer:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization. **Evelien M. de Olde:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Conceptualization.

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## Declaration of competing interest

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

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## Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jrurstud.2025.103669>.

## Appendix A. Overview of participants



**Table A.1**

Overview of participants, their role(s) in the food system (x = main role, xx = secondary role), whether they are a regional actor or external to the North of the Netherlands, and whether they participated in the interview and/or workshop (+ = yes, / = no)

#	Producer	Processor	Distributor	Consumer rep.	Waste processor	Input supplier	Finance actor	Education and research	Environment and animals rep.	Government actor	Regional or external actor	Interview participant	Workshop participant
1	x										Regional	+	+
2	x										Regional	+	/
3	x							xx			Regional	+	/
4	x										Regional	+	/
5	x						xx				Regional	+	/
6	x									xx	Regional	+	/
7	x										Regional	/	+
8		x									External	+	/
9			x								Regional	+	/
10			x			xx					Regional	+	+
11			x								Regional	+	/
12				x							Regional	+	/
13					x						Regional	+	/
14						x					External	+	+
15						x					External	+	/
16							x				Regional	+	+
17							x				External	/	+
18								x			Regional	+	+
19								x			Regional	+	/
20								x			Regional	+	/
21								x			Regional	+	/
22								x			Regional	+	/
23								x			External	/	+
24								x			External	/	+
25								x			External	/	+
26								x			External	/	+
27								x			Regional	/	+
28									x		Regional	+	+
29								xx	x		Regional	+	/
30			xx						x		Regional	+	/
31										x	Regional	+	/
32										x	Regional	+	+
33										x	Regional	+	/
34										x	Regional	+	/
35										x	External	+	/
36										x	External	/	+

## Data availability

Data will be made available on request.

## References

- AANN, 2023. Over - agro agenda [WWW Document] URL 6.11.23 - Agro Agenda. <http://www.agroagendann.nl/over/>.
- AANN. AgroAgenda Noord-Nederland - een ontwikkelagenda voor de Noord-Nederlandse agro & foodsector [WWW Document] URL 1.18.21. [https://www.provinciegroningen.nl/fileadmin/user\\_upload/Documenten/Beleid\\_en\\_documenten/Documentenzoeker/Landbouw\\_veeteelt\\_en\\_visserij/Landbouw/AgroAgenda\\_Noord\\_Nederland\\_definitieve\\_versie.pdf](https://www.provinciegroningen.nl/fileadmin/user_upload/Documenten/Beleid_en_documenten/Documentenzoeker/Landbouw_veeteelt_en_visserij/Landbouw/AgroAgenda_Noord_Nederland_definitieve_versie.pdf).
- Aarts, N., Leeuwis, C., 2023. The politics of changing the Dutch agri-food system. *J. Polit. Sociol.* 1. <https://doi.org/10.54195/jps.14922>.
- Agyeman, J., McEntee, J., 2014. Moving the field of food justice forward through the lens of urban political ecology. *Geogr. Compass* 8, 211–220. <https://doi.org/10.1111/gec3.12122>.
- Avelino, F., 2017. Power in sustainability transitions: analysing power and (dis)empowerment in transformative change towards sustainability. *Environ. Policy Gov.* 27, 505–520. <https://doi.org/10.1002/eet.1777>.
- Bal, M., Stok, M., Bombaerts, G., Huijts, N., Schneider, P., Spahn, A., Buskens, V., 2023. A fairway to fairness: toward a richer conceptualization of fairness perceptions for just energy transitions. *Energy Res. Soc. Sci.* 103, 103213. <https://doi.org/10.1016/j.erss.2023.103213>.
- Bastian, M., Jones, O., Moore, N., Roe, E. (Eds.), 2017. *Participatory Research in more-than-human Worlds*. Routledge, London and New York.
- Berkhout, P., van der Meulen, H., Ramaekers, P., 2022. *Staat Van Landbouw, Natuur En Voedsel; Editie 2022 (No. Rapport 2022-076)*. Wageningen Economic Research en Centraal Bureau voor de Statistiek, Wageningen.
- Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N.J., Moore, M.L., Morrison, T.H., Brown, K., 2018. The dark side of transformation: latent risks in contemporary sustainability discourse. *Antipode* 50, 1206–1223. <https://doi.org/10.1111/ANTL.12405>.
- Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. <https://doi.org/10.1191/1478088706QP0630A>.
- Bui, S., Cardona, A., Lamine, C., Cerf, M., 2016. Sustainability transitions: insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems. *J. Rural Stud.* 48, 92–103. <https://doi.org/10.1016/j.jrurstud.2016.10.003>.
- Celermajer, D., Schlosberg, D., Rickards, L., Stewart-Harawira, M., Thaler, M., Tschakert, P., Verlie, B., Winter, C., 2021. Multispecies justice: theories, challenges, and a research agenda for environmental politics. *Environ. Polit.* 30, 119–140. <https://doi.org/10.1080/09644016.2020.1827608>.
- Coulson, H., Milbourne, P., 2021. Food justice for all?: searching for the ‘justice multiple’ in UK food movements. *Agric. Hum. Values* 38, 43–58. <https://doi.org/10.1007/s10460-020-10142-5>.
- Dale, B., 2020. Alliances for agroecology: from climate change to food system change. *Agroecol. Sustain. Food Syst.* 44, 629–652. <https://doi.org/10.1080/21683565.2019.1697787>.
- 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*. Springer, Netherlands, Dordrecht, pp. 439–452. [https://doi.org/10.1007/978-94-007-7927-3\\_24](https://doi.org/10.1007/978-94-007-7927-3_24).
- de Boon, A., Dressel, S., Sandström, C., Rose, D.C., 2023. A psychometric approach to assess justice perceptions in support of the governance of agricultural sustainability transitions. *Environ. Innov. Soc. Transit.* 46, 100694. <https://doi.org/10.1016/J.EIST.2023.100694>.
- de Bruin, A., de Boer, I.J.M., Faber, N.R., de Jong, G., Termeer, K.J.A.M., de Olde, E.M., 2023. Easier said than defined? Conceptualising justice in food system transitions. *Agric. Hum. Values*. <https://doi.org/10.1007/s10460-023-10482-y>.
- de Wolf, P., Klompe, K., Hanegraaf, M., Molendijk, L., Vellinga, T., 2018. *Verduurzaming Samenwerking akkerbouw-veehouderij in Drenthe; Expertbeoordeling En Advies (No. WPR-773)*. Wageningen Research, Wageningen.
- Dirth, E., Biermann, F., Kalfagianni, A., 2020. What do researchers mean when talking about justice? An empirical review of justice narratives in global change research. *Explor. Planet. Justice* 6, 100042. <https://doi.org/10.1016/j.esg.2020.100042>.



- Distrifood, 2024. Market share of supermarkets in the Netherlands [WWW Document]. Distrifood. URL 10.17.24. <https://www.distrifood.nl/food-data/marktaandelen>.
- Duncan, J., DeClerck, F., Báldi, A., Treyer, S., Aschemann-Witzel, J., Cuhls, K., Ahrné, L., Bisoffi, S., Grando, S., Guobys, L., Kohl, J., Hansen, H.O., Hudson, R.L., Lutzeyer, H.-J., Nielsen, V.H., Ruiz, B., Saggau, E., Valceschini, E., Siebielec, G., Brunori, G., 2022. Democratic directionality for transformative food systems research. *Nat. Food* 2022, 1–4. <https://doi.org/10.1038/s43016-022-00479-x>.
- DuPuis, E.M., Goodman, D., 2005. Should we go “home” to eat?: toward a reflexive politics of localism. *J. Rural Stud.* 21, 359–371. <https://doi.org/10.1016/J.JRURSTUD.2005.05.011>.
- DuPuis, E.M., Harrison, J.L., Goodman, D., 2011. Just food? In: Alkon, A.H., Agyeman, J. (Eds.), *Cultivating Food Justice, Race, Class, and Sustainability*. The MIT Press, pp. 283–308.
- Ericksen, P.J., 2008. Conceptualizing food systems for global environmental change research. *Glob. Environ. Change* 18, 234–245. <https://doi.org/10.1016/j.gloenvcha.2007.09.002>.
- Erwin, A., 2022. Connecting food justice to farmworkers through a faith-based organization. *J. Rural Stud.* 89, 397–406. <https://doi.org/10.1016/j.jrurstud.2021.10.009>.
- Fraser, N., 2008. *Scales of Justice: Reimagining Political Space in a Globalizing World*. Columbia University Press.
- Gaitán-Cremaschi, D., Klerkx, L., Duncan, J., Trienekens, J.H., Huenchuleo, C., Dogliotti, S., Contesse, M.E., Rossing, W.A.H., 2019. Characterizing diversity of food systems in view of sustainability transitions. A review. *Agron. Sustain. Dev.* 39, 1. <https://doi.org/10.1007/s13593-018-0550-2>.
- Geels, F.W., 2011. The multi-level perspective on sustainability transitions: responses to seven criticisms. *Environ. Innov. Soc. Transit.* 1, 24–40. <https://doi.org/10.1016/J.EIST.2011.02.002>.
- Glennie, C., Alkon, A.H., 2018. Food justice: cultivating the field. *Environ. Res. Lett.* 13, 073003. <https://doi.org/10.1088/1748-9326/aac4b2>.
- Gupta, J., Liverman, D., Prodani, K., Aldunce, P., Bai, X., Broadgate, W., Ciobanu, D., Gifford, L., Gordon, C., Hurlbert, M., Inoue, C.Y.A., Jacobson, L., Kanie, N., Lade, S. J., Lenton, T.M., Obura, D., Okereke, C., Otto, I.M., Pereira, L., Rockström, J., Scholtens, J., Rocha, J., Stewart-Koster, B., David Tabara, J., Rammelt, C., Verburg, P.H., 2023. Earth system justice needed to identify and live within Earth system boundaries. *Nat. Sustain.* 6, 630–638. <https://doi.org/10.1038/s41893-023-01064-1>.
- Hebinck, A., Klerkx, L., Elzen, B., Kok, K.P.W., König, B., Schiller, K., Tschersich, J., van Mierlo, B., von Wirth, T., 2021. Beyond food for thought – directing sustainability transitions research to address fundamental change in agri-food systems. *Environ. Innov. Soc. Transit.* 41, 81–85. <https://doi.org/10.1016/J.EIST.2021.10.003>.
- Heffron, R.J., McCauley, D., 2018. What is the ‘Just Transition’? *Geoforum* 88, 74–77. <https://doi.org/10.1016/j.geoforum.2017.11.016>.
- Hermans, F., Stuiver, M., Beers, P.J., Kok, K., 2013. The distribution of roles and functions for upscaling and outscaling innovations in agricultural innovation systems. *Agric. Syst.* 115, 117–128. <https://doi.org/10.1016/j.agsy.2012.09.006>.
- Hoogstra, A.G., Silvius, J., de Olde, E.M., Candel, J.J.L., Termeer, C.J.A.M., van Ittersum, M.K., de Boer, I.J.M., 2024. The transformative potential of circular agriculture initiatives in the North of the Netherlands. *Agric. Syst.* 214, 103833. <https://doi.org/10.1016/j.agsy.2023.103833>.
- Hopma, J., Woods, M., 2014. Political geographies of “food security” and “food sovereignty”. *Geogr. Compass* 8, 773–784. <https://doi.org/10.1111/gec3.12163>.
- Jukema, G.D., Ramaekers, P., Berkhout, P., 2023. *De Nederlandse agrarische sector in internationaal verband – editie 2023* (No. 2023– 004). Wageningen Economic Research En Centraal Bureau Voor De Statistiek. Wageningen/Heerlen/Den Haag.
- Kaljonen, M., Kortetmäki, T., Tribaldos, T., Huttunen, S., Karttunen, K., Maluf, R.S., Niemi, J., Saarinen, M., Salminen, J., Vaalavuo, M., Valsta, L., 2021. Justice in transitions: widening considerations of justice in dietary transition. *Environ. Innov. Soc. Transit.* 40, 474–485. <https://doi.org/10.1016/J.EIST.2021.10.007>.
- LNV, 2023. *Convenant dierwaardige veehouderij* [WWW Document]. URL: <https://www.rijksoverheid.nl/documenten/convenanten/2022/11/04/convenant-dierwaardige-veehouderij>, 10.6.24.
- LNV, 2022. *The Netherlands national strategic plan CAP 2023-2027* (report No. 1.3). [WWW Document] URL 6.11.23 <https://www.toekomstglb.nl/binaries/toekomstglb/documenten/publicaties/2022/10/03/definitieve-nsp/NSP+versie+1.3+ingediend+op+2+november+2022.pdf>.
- LNV, 2019. *Plan of action - supporting the transition to circular agriculture*. Ministry of Agriculture, Nature and Food Quality. Den Haag.
- LNV, 2018. *Landbouw, Natuur En Voedsel: Waardevol En Verbonden*. Nederland Als Koploper in Kringloplandbouw. Ministerie van Landbouw, Natuur en Voedselkwaliteit, Den Haag, the Netherlands.
- Loo, C., 2014. Towards a more participative definition of food justice. *J. Agric. Environ. Ethics* 27, 787–809. <https://doi.org/10.1007/S10806-014-9490-2>.
- Markard, J., Geels, F.W., Raven, R., 2020. Challenges in the acceleration of sustainability transitions. *Environ. Res. Lett.* 15, 081001. <https://doi.org/10.1088/1748-9326/ab9468>.
- McGowan, K., Antadze, N., 2023. Recognizing the dark side of sustainability transitions. *J. Environ. Stud. Sci.* 1, 1–6. <https://doi.org/10.1007/S13412-023-00813-0>.
- Miller, D., 2017. Justice. In: Zalta, E.N. (Ed.), *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University.
- Miller, D., 2013. *Justice for Earthlings: Essays in Political Philosophy*. Cambridge University Press. <https://doi.org/10.1017/CBO9781139236898>.
- Moragues-Faus, A., 2020. Towards a critical governance framework: unveiling the political and justice dimensions of urban food partnerships. *Geogr. J.* 186, 73–86. <https://doi.org/10.1111/geoj.12325>.
- Murphy, S.P., Cannon, S.M., Walsh, L., 2022. Just transition frames: Recognition, representation, and distribution in Irish beef farming. *J. Rural Stud.* 94, 150–160. <https://doi.org/10.1016/j.jrurstud.2022.06.009>.
- Newell, P., Mulvaney, D., 2013. The political economy of the ‘just transition’. *Geogr. J.* 179, 132–140. <https://doi.org/10.1111/geoj.12008>.
- Ollinaho, O.I., Kröger, M., 2021. Agroforestry transitions: the good, the bad and the ugly. *J. Rural Stud.* 82, 210–221. <https://doi.org/10.1016/j.jrurstud.2021.01.016>.
- PBL, 2012. *The Netherlands in 21 Infographics - Facts and Figures on the Human Environment*. PBL Netherlands Environmental Assessment Agency. Amersfoort.
- Puupponen, A., Lonkila, A., Savikurki, A., Karttunen, K., Huttunen, S., Ott, A., 2022. Finnish dairy farmers’ perceptions of justice in the transition to carbon-neutral farming. *J. Rural Stud.* 90, 104–112. <https://doi.org/10.1016/J.JRURSTUD.2022.01.014>.
- Salmons, J., 2014. Determining e-interview or observation styles. In: *Qualitative Online Interviews: Strategies, Design, and Skills*. SAGE Publications Ltd. <https://doi.org/10.4135/9781071878880>.
- Selnes, T., 2023. *The Netherlands Food System Policy. Nitrogen Emission Reduction Policy Amidst Competing Interests and Struggles for Influence*.
- SER Noord-Nederland, 2022. *Arbeidsmigratie in Noord-Nederland. Nodig Voor Realiseren Brede Welvaart En Energietransitie! Sociaal Economische Raad Noord-Nederland*.
- Siegmann, K.A., Quaedvlieg, J., Williams, T., 2022. Migrant labour in Dutch agriculture: regulated precarity. *Eur. J. Migr. Law* 24, 217–240. <https://doi.org/10.1163/15718166-12340127>.
- Slocum, R., Cadieux, K.V., Blumberg, R., 2016. Solidarity, Space, and Race: toward Geographies of Agrifood Justice. *Justice Spatiale Spat. Justice* 9. <http://www.jssj.org/article/solidarite>.
- Statistics Netherlands, 2024. *StatLine - Landbouw; gewassen, dieren en grondgebruik naar gemeente* [WWW Document]. URL: <https://opendata.cbs.nl/#/CBS/nl/dataset/80781ned/table?ts=1725613354752,9.6.24>.
- Stumpf, K.H., Becker, C.U., Baumgärtner, S., 2016. A conceptual structure of justice - providing a tool to analyse conceptions of justice. *Ethical Theory Moral Pract.* 19, 1187–1202. <https://doi.org/10.1007/s10677-016-9728-3>.
- Tamsma, D.W., van Middelaar, C.E., de Boer, I.J.M., Kros, J., van Ittersum, M.K., Schut, A.G.T., 2024. Why is nutrient cycling in food systems so limited? A case study from the North-Netherlands region. *Nutr. Cycl. Agroecosystems*. <https://doi.org/10.1007/s10705-024-10352-x>.
- Tribaldos, T., Kortetmäki, T., 2022. Just transition principles and criteria for food systems and beyond. *Environ. Innov. Soc. Transit.* 43, 244–256. <https://doi.org/10.1016/J.EIST.2022.04.005>.
- Tscharsich, J., Kok, K.P.W., 2022. Deepening democracy for the governance toward just transitions in agri-food systems. *Environ. Innov. Soc. Transit.* 43, 358–374. <https://doi.org/10.1016/J.EIST.2022.04.012>.
- van der Ploeg, J.D., 2020. Farmers’ upheaval, climate crisis and populism. *J. Peasant Stud.* 47, 589–605. <https://doi.org/10.1080/03066150.2020.1725490>.
- Veldkamp, C., van der Hoeve, R., 2024. *Voedselnood in Nederland – 1-meting* (No. 2024/071). Ipsos I&O in opdracht van Het Nederlandse Rode Kruis, Amsterdam.
- Whitfield, S., Apgar, M., Chabvuta, C., Challinor, A., Deering, K., Dougill, A., Gulzar, A., Kalaba, F., Lamanna, C., Manyonga, D., Naess, L.O., Quinn, C.H., Rosentock, T.S., Sallu, S.M., Schreckenbach, K., Smith, H.E., Smith, R., Steward, P., Vincent, K., 2021. A framework for examining justice in food system transformations research. *Nat. Food* 2, 383–385. <https://doi.org/10.1038/s43016-021-00304-x>.
- Wijsman, K., Berbés-Blázquez, M., 2022. What do we mean by justice in sustainability pathways? Commitments, dilemmas, and translations from theory to practice in nature-based solutions. *Environ. Sci. Policy* 136, 377–386. <https://doi.org/10.1016/j.envsci.2022.06.018>.
- Winter, C.J., Schlosberg, D., 2023. What matter matters as a matter of justice? *Environ. Polit.* 1–20. <https://doi.org/10.1080/09644016.2023.2220640>.
- Zimmerer, K.S., Jiménez-Olivencia, Y., Ruiz-Ruiz, A., Porcel-Rodríguez, L., 2020. Agri-food land transformations and immigrant farm workers in Peri-urban areas of Spain and the mediterranean. *Land* 9, 1–19. <https://doi.org/10.3390/land9120472>.