PBL Netherlands Environmental Assessment Agency

JUST TRANSITIONS

Conceptual tools for policy reflection

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Colophon

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Contents

Summary

Just transitions are increasingly prominent in societal and policy discussions

The term '*just transition*' has gained significant traction in political and policy discourse, reflecting a desire to address environmental sustainability in a way that also enhances social equity. However, the concept remains contested, prompting numerous questions about its interpretation and practical application. Variations in understanding arise from the diversity of justice types, transition pathways, and stakeholder perspectives. Unpacking the conceptual and philosophical foundations of its core components (justice and transitions), which is what this report aims to facilitate, is a useful starting point for grasping the full complexity of this evolving discourse.

A just transition aims for sustainability that is both inclusive and equitable

A just transition refers to the process of shifting towards a more sustainable society and economy while ensuring that this transition also promotes inclusive human development and restores natural ecosystems. Though exact interpretations vary, the core idea is that the sustainability transition (whether towards zero-carbon, circularity, more efficient resource use, or any other form of sustainability-related future) should be equitable and inclusive, benefiting both people and the planet.

The concept of just transitions emerged from labour rights and environmental justice movements and has evolved into a global sustainability priority

The concept of just transitions is widely attributed to the American labour movement of the 1970s, when unions formed in response to increasingly strict environmental regulations. They argued that workers in industries affected by environmental policies – like coal mining and manufacturing – should not bear the economic burden of transitioning to a cleaner, more sustainable economy. The labour movement was heavily influenced by broader social and environmental justice movements, drawing on the experiences of Indigenous, grassroots, and frontline communities who have long highlighted the need for greater environmental, economic, and racial equity. By the 2010s, just transitions had become a global policy focus, and its inclusion in the preamble of the 2015 Paris Agreement marked its growing influence in sustainability agendas. This 'policy moment' reflects the growing recognition of a need to situate sustainability policy within broader social and political contexts.

There are many different types of justice

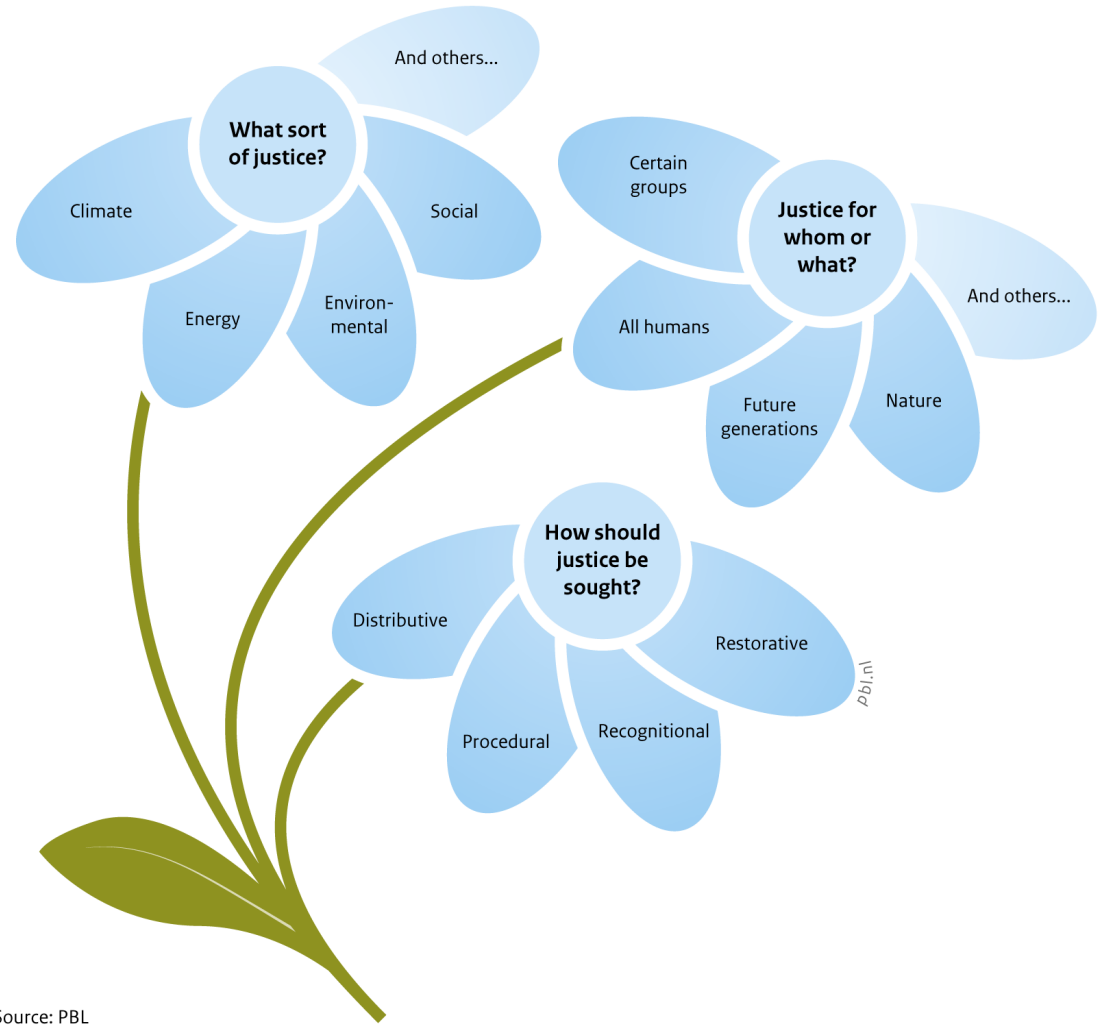
There are different types of justice (Figure 1). The different understandings often overlap, creating opportunities for synergies, but they can also come into conflict. Justice can be differentiated depending on the domain in question (e.g. climate justice, social justice, energy justice), the group or entity for whom justice is being sought (e.g. low-income populations, women, youth, future generations, or all humans), and the different approaches to achieving justice, which are as follows:

- Distributive justice focuses on ensuring the fair allocation of resources, risks, and benefits across society, addressing inequalities in the distribution of environmental burdens like pollution and climate impacts.
- Procedural justice emphasises inclusive decision-making processes that enable meaningful participation of all stakeholders, particularly marginalised groups, ensuring that everyone has a voice in shaping sustainability policies.

- Recognitional justice seeks to acknowledge and respect the diverse identities, values, and rights of different groups, especially those historically excluded or marginalised, such as Indigenous peoples. This approach highlights the importance of understanding and addressing the social and cultural dimensions of inequality.
- Restorative justice focuses on addressing historical harms and injustices, aiming to repair damage done to people and the environment. This approach emphasises healing relationships and restoring balance through measures like reparations, rehabilitation, or reconciliation processes.

Figure 1

Questions to ask about justice in sustainability transitions



Source: PBL

Sustainability transitions involve structural shifts towards more sustainable futures

Transitions refer to the processes through which economies and societies shift from one state to another. In the context of sustainability, a transition involves moving from carbon-intensive, fundamentally unsustainable systems to a low-carbon, resilient, and environmentally sustainable future. Different transition discourses highlight varying approaches to achieving this change, two of which are particularly relevant for just transitions. The first, the sociotechnical transition approach, considers how technological innovations can drive societal shifts that remain within ecological limits. It primarily focuses on fostering niche green technologies to replace existing carbon-intensive systems, and critics argue that it often overlooks the significance of power imbalances

and governance structures in sociotechnical transition processes. Secondly, the emerging post-capitalist and post-developmentalist discourse incorporates a deeper level of analysis by critically examining the underlying values and worldviews that predominantly shape definitions of progress and wellbeing, for example drawing on ethical traditions from Indigenous populations in the Global South. It advocates for redefining prosperity to focus on harmony with nature and communal relationships, rather than solely on economic growth. Both approaches recognise the need for fundamental structural change but propose different pathways to achieve just transitions.

There is a lack of consensus on exactly what constitutes a just transition

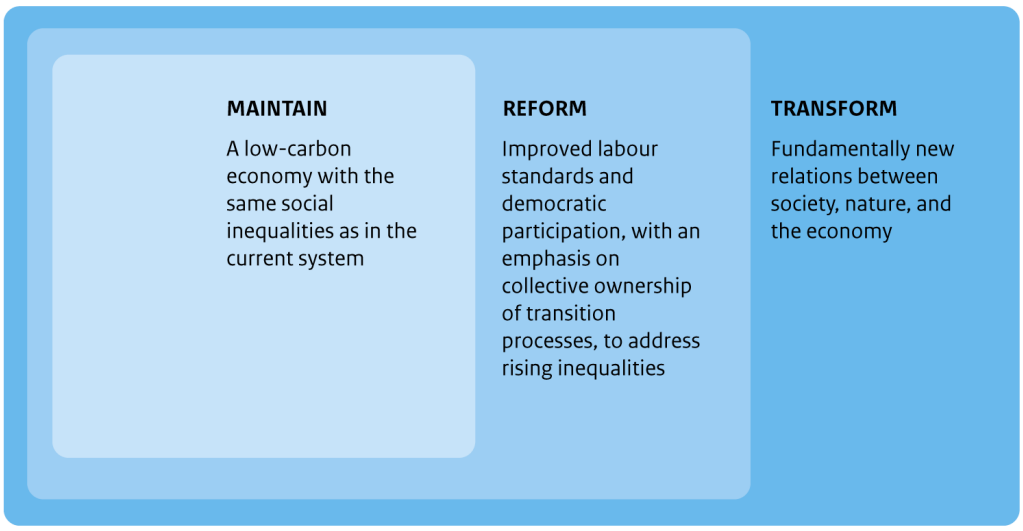
While the concept of just transitions is gaining traction in most sustainability agendas, as mentioned above, there is no universally accepted definition. This is in part due to the limited articulation of justice concerns across different contexts, resulting from a lack of awareness of the concept itself among policymakers and the public, insufficient attention for the varied dimensions of justice, and limited engagement with the perspectives of those who are most likely to experience injustice. Additionally, there are different views on exactly what transitions involve, which can generate contentious debates over power, resources, or social equity, making it harder to build consensus on or implement just transition policies smoothly.

Just transitions have different interpretations

Partly as a result of this varied conceptual background, there are therefore many different ways of understanding just transitions. Generally, a just transition can be grouped into three main forms (see Figure 2). At its most basic, a just transition is often invoked to maintain the status quo, ensuring that existing systems are preserved while addressing immediate concerns. A more reformative approach seeks to modify governance structures to create fairer systems, emphasising adjustments within the current framework to enhance equity. Finally, a transformative perspective advocates for a fundamental rethinking of the relationship between society, the economy, and nature, aiming to redesign systems for holistic sustainability and justice. A shared baseline understanding of just transitions need not demand consensus but rather should provide a framework through which diverse perspectives and transition pathways can be contemplated.

Figure 2

Different types of just transition based on transformative potential



Source: PBL, adapted from Just Transition Research Collaborative 2018

The term 'just transitions' is widely used but applied differently by different actors. In general, its use ranges from creating more jobs in a green economy ('maintain') to a radical overhaul of the economic system and a reimagining of human-nature relations ('transform'). Adapted from Just Transition Research Collaborative (2018); see also Barca (2015).

Justice considerations can shape understanding of major ongoing transitions

Conceptual tools such as those presented above can be applied to major ongoing transitions in various ways. For example, when considering climate change and the energy transition, concerns raised by climate justice advocates and integrated into governance frameworks like the Paris Agreement focus on the equitable distribution of responsibilities, reflecting disparities in emissions and climate vulnerability. High-income countries are expected to lead emissions reductions, while justice-based principles – such as acknowledging historical responsibility and differing economic capacity – guide debates around what constitutes a 'fair share' of mitigation action for low- and middle-income countries (LMICs). Similarly, incorporating justice considerations into the transformation of global supply chains can draw attention to the potential risks of sustaining exploitation and inequality in LMICs, and the possible opportunities associated with establishing more equitable models of participation and exchange. Transitioning to a just circular economy could require, among other things, recognising the contributions of marginalised workers, such as those in the informal sector, and engaging with the perspectives of communities affected by resource extraction on a global scale.

Just transitions present unique and complex governance challenges

Stakeholders prioritise different dimensions of justice based on their own worldviews and experiences, complicating the creation of universally accepted policies. Governing transitions from an ecological angle is already inherently complex, and pursuing justice adds further layers of difficulty due to the varying interpretations of what constitutes fairness and the inevitable trade-offs between them. These complexities lead to tensions that require careful negotiation. Ensuring transparency, accountability, and meaningful consultation with all stakeholders – especially those most affected – can help manage these tensions and reduce the risk of negative or unintended consequences. There will be no one-size-fits-all solution, meaning contextually grounded approaches are critical for achieving fair and effective transitions.

Just transitions frameworks like the one presented in this report can spark meaningful conversations about sustainable futures

Just transition frameworks can facilitate discussions about and enable reflection on what constitutes fair distribution, meaningful participation, and historical accountability, among other things, thereby guiding policymakers and other stakeholders toward more equitable outcomes in their quest for more sustainable futures. To support the use of just transition frameworks in policy reflection, a shared baseline understanding that integrates multiple perspectives of justice and considers diverse transition pathways can be useful. Strengthening the analysis of connections between domestic and international policies can shed light on the implications for global just transitions, while examining justice-related trade-offs and synergies in transition-related activities can help in identifying approaches to balance competing priorities. Incorporating a wide range of worldviews and justice considerations – particularly from LMICs and marginalised communities – can enrich policy reflection and contribute to more inclusive outcomes. By providing an overview and analysis of the origins and theoretical foundations of just transitions, and by elaborating on the concept's policy implications, this report aims to construct a conceptual toolkit to help reflect on how just transitions can inform international development and foreign policy.

1 Introduction

There is growing recognition of the urgent need to address global environmental challenges such as climate change, pollution, ecosystem degradation, and biodiversity loss (IPBES 2019; IPCC 2023; Rockström 2023). Efforts to tackle these issues require profound social, economic, and political changes. Key considerations include, for example, how the benefits and burdens of sustainability transitions are distributed, the extent to which diverse stakeholders – especially marginalised groups – are meaningfully involved in sustainability-related decision-making processes, and how historical legacies of extraction and exploitation are acknowledged in shaping future action. Ongoing sustainability transitions are increasingly being seen as an opportunity not only to reduce society's environmental footprint, but also to improve the living conditions of economically disadvantaged and marginalised communities worldwide, thereby contributing to a more equitable and resilient future.

In this context, the concept of 'just transitions' has become increasingly utilised as a way to recognise the intrinsically interconnected nature of social, economic, and environmental challenges. A just transition integrates equity and inclusion concerns with environmental priorities, ensuring that all stakeholders – particularly those most impacted by global crises and the solutions implemented to address them – have a voice in shaping the future. Currently, an *unjust* transition is considered 'highly likely [...] if the planetary systems we depend on are saved on terms that serve the elites, while poverty is allowed to persist' (Swilling 2019). This highlights the urgent need for a paradigm shift in how transitions are both conceptualised and implemented. The EU, the Netherlands, and many other countries have committed to the Sustainable Development Goals (SDGs) on a global scale.

While there is broad consensus that the sustainability transition (i.e. towards a zero-carbon society with a radically reduced and more efficient use of material resources) should also foster sustainable human development and the restoration of nature (AIV 2023; WRR 2023), what precisely constitutes a *just* transition remains deeply contested. For instance, the International Labour Organisation (ILO) emphasises a labour-oriented approach to just transitions, focusing on worker rights and job security in the shift to greener economies. In contrast, the International Renewable Energy Agency (IRENA) aims to achieve social justice by increasing access to low-carbon technologies, aligning more with sociotechnical perspectives.

Differing interpretations of its constituent elements – namely 'justice' and 'transitions' – further frustrate efforts to create a universally accepted definition. Consequently, various actors, institutions, and policies apply the term in widely different ways. Organisations prioritise different aspects in their just transition programmes and policies, reflecting a diverse range of understandings of justice, visions for a sustainable future, and strategies for achieving that future. These interpretations – which may sometimes be overlapping, complementary, or conflicting – often generate ambiguity around the concept of just transitions and the means to achieve them. This lack of clarity can lead to inconsistent applications and interpretations both within and between institutions.

This report unpacks the concept of just transitions in order to clarify its different forms and provide the foundations for moving towards a shared, though not necessarily unified, understanding for researchers and policymakers. The study pays particular attention to the relevance of the just

transitions discourse for foreign and development policy, though many of the insights discussed are also applicable to domestic policy. Though not intended to be exhaustive, it serves as an entry point for exploring the diverse approaches to just transitions within science, politics, and practice. Its goal is to enhance understanding of the concept, thereby fostering a more informed discussion about what fair and sustainable policies could entail. It illustrates how these conceptual tools might be used to reflect on policies designed to address climate change and other environmental challenges.

The findings presented in this study are based primarily on an extensive review of existing literature, triangulated through discussions with policymakers and researchers. In addition, a knowledge session was organised with a group of 15 policymakers from the Netherlands' Ministries of Agriculture, Nature, and Food Quality; Foreign Affairs; and Infrastructure and Water Management, as well as participants from the Netherlands Enterprise Agency and PBL itself, to discuss key research gaps and challenges. Insights generated during this session are integrated throughout the report.

Furthermore, the report aims to equip policymakers and other policy-relevant actors (e.g. implementation agencies and policy researchers) with the knowledge and tools to reflect on just transitions, particularly as concerns low- and middle-income countries (LMICs). It will guide these actors in incorporating justice-related considerations into international development and foreign policy, as well as other related areas such as trade, climate, and human rights policy. It will also be of interest to those involved in domestic policy related to the socioeconomic aspects of environmental policy. Finally, the output of this work will be of interest to civil society actors and academics working on topics related to the just transition.

The report is structured as follows. Chapter 2 begins with an overview of the origins of the movement and its mobilisation by trade unionists, grassroots movements and frontline communities, academic researchers, and multilateral global policymakers. Chapter 3 elaborates on and clarifies the theoretical underpinning of the just transitions concept. This includes a review of transitions literature, a summary of various types of justice and the different ways in which justice can be sought, and an overview of frameworks that can be used to understand just transitions. Chapter 4 takes these more conceptual and theoretical considerations and shows how these can be used to reflect on the practical and policy-related agendas of major transitions. Chapter 5 closes by reflecting on the policy-related implications of these conceptual developments, outlining some potential next steps for just transitions work, specifically as concerns international and foreign policymaking. Ultimately, the report aims to provide a set of conceptual tools through which to reflect on the question: how can just transitions be incorporated into international development and foreign policy?

2 Origins and evolution

The concept of just transitions is not entirely new; it has gradually evolved over time in response to the growing recognition that social equity must be integral to sustainable development (see Figure 3). It is rooted in the labour union movement, specifically arising in response to increasingly stringent environmental regulations that affected workers and communities whose livelihoods were dependent on fossil fuels and other polluting industry. It emerged in the US in the 1970s as a counter-narrative to the 'jobs versus the environment' discourse that promoted the idea that environmental conservation required job losses. Instead, the just transitions movement argued that environmental progress and social justice could, and should, go hand in hand.

Unions drew inspiration from broader social and environmental justice movements, incorporating the perspectives of Indigenous, grassroots, and frontline communities – groups that have long advocated for greater environmental, economic, and racial equity. These communities have been pivotal in shaping the just transitions discourse and are also among those likely to be most vulnerable to the possible negative impacts of an *un*just transition (see Box 1). The environmental justice movement advocated, among other things, for the fair distribution of environmental burdens, such as pollution and resource extraction. Aligning with the environmental justice movement allowed the labour movement to extend its focus beyond job security, prioritising overall human and ecosystem wellbeing. This connection also underscored how socioeconomic factors such as race, income level, and educational attainment intersect with environmental policy, emphasising the need to address environmental challenges not only with technical solutions but also by tackling underlying societal issues.

Box 1. The role of Indigenous movements and just transitions

Indigenous peoples, movements, and perspectives are uniquely relevant to just transitions due to both their invaluable contributions and the significant risks they face. First, Indigenous and local communities have proven to be among the best stewards of nature and the climate, with their knowledge systems offering vital lessons on sustainability and the integration of social and cultural dimensions into the environmental climate (FOA & FILAC 2021; IISD 2022). Many Indigenous communities emphasise holistic, relational views of the world, where nature is seen as inherently and culturally valuable (Indigenous Environmental Network 2017; Przybylinski & Ohlsson 2023).

At the same time, Indigenous and local communities are particularly vulnerable to the negative impacts of environmental degradation and climate change. Their deep connection to nature and land, while a source of resilience, also places them at greater risk when ecosystems are damaged or their land and resource rights are undermined (IPBES 2019). As such, these communities are often on the front lines of unsustainable processes such as climate change, pollution, land-grabbing, and deforestation. Some of these threats are even exacerbated or driven by sustainability policies, such as certain methods of nature conservation (Special Rapporteur on the Rights of Indigenous Peoples 2023).

Indigenous traditions emphasise that all human actions must be guided by respect for the environment, underscoring the interdependence between humans and nature. This perspective

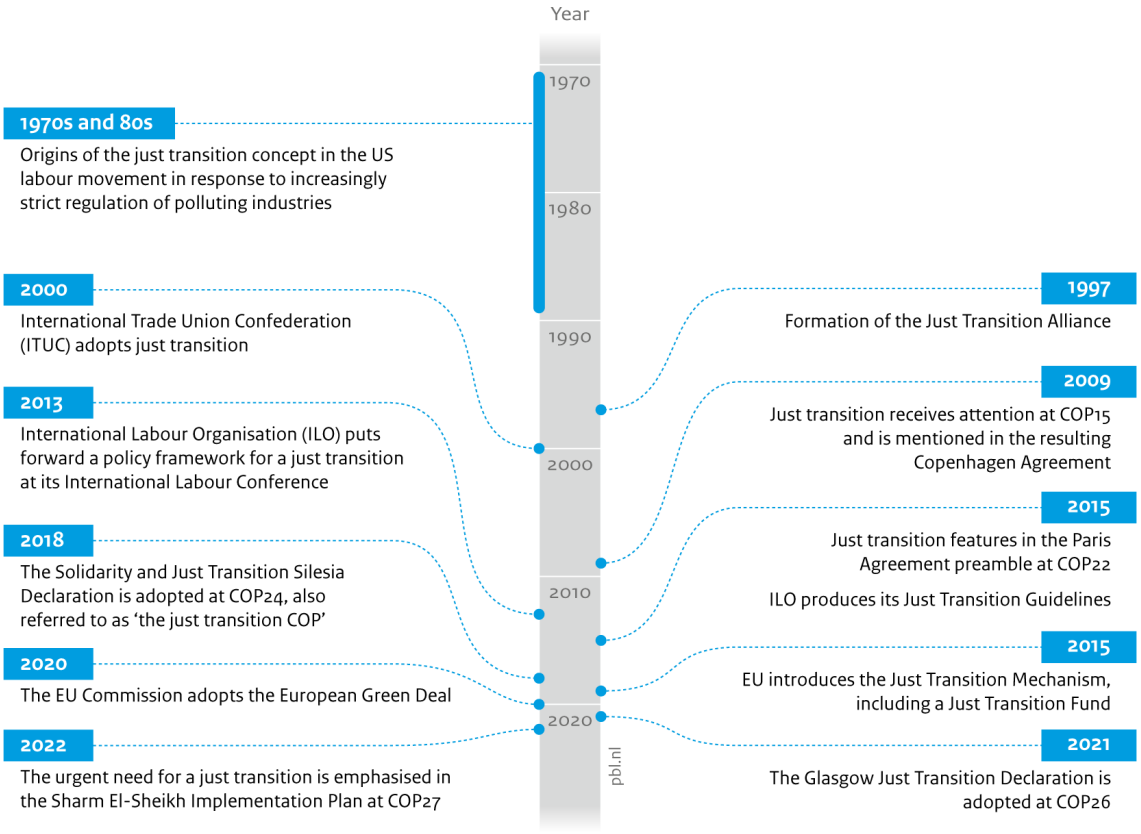
argues that how we treat the environment is directly linked to societal wellbeing. As such, Indigenous peoples should play a central role in the just transitions debate, not only as sources of knowledge and sustainable practices but also as key stakeholders whose empowerment is critical to achieving truly just transitions. This was formally recognised by the most recent United Nations Biodiversity Conference as the 'expanded role of Indigenous Peoples and local communities in protecting biodiversity' (Convention on Biological Diversity 2024).

Just transitions thinking gained greater prominence in the 1980s and 1990s as international labour union federations adopted just transition language to draw attention to the hardships faced by workers in carbon-intensive industries like the coal, oil, and gas sectors as the world transitioned to cleaner energy sources. The International Trade Union Confederation (ITUC) and the International Labour Organisation (ILO) worked together to bring the just transitions debate to the international stage in the 2010s, when it started to become prominent on the agenda of various intergovernmental and multilateral organisations. Just transitions language started to be used at the United Nations' Climate Change Conference in 2009, where it was discussed in the context of balancing climate action with the need to protect jobs and ensure social equity, and was later referenced in the resulting Copenhagen Agreement. In 2013, the ILO built on this by organising its annual conference around the theme of just transitions, focusing on the role of decent work in sustainability. The resulting resolution produced the first policy framework for a just transition, which emphasised the need for social dialogue and the creation of green jobs while ensuring that no workers or communities were left behind (ILO 2015).

In 2015, the need for a just transition was also mentioned in the preamble to the Paris Agreement, which calls for a response to climate change that takes 'into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities' (UNFCCC 2015). With its inclusion in the Paris Agreement having solidified its role in global sustainability agendas, the term has evolved in its application to more broadly encompass the integration of social and environmental objectives. Numerous international organisations, governments, civil society organisations, and labour unions have adopted it as a guiding concept. It has also been integrated into various national and international institutional and regulatory infrastructure, such as through the European Union's Just Transition Mechanism, which allocates funding to support regions heavily dependent on carbon-intensive industries. Various countries, including South Africa and Canada, have also developed national strategies focused on mitigating the social and economic impacts of transitioning away from fossil fuel industries (Chan et al. 2024).

Figure 3

Key policy moments in the growth of the just transitions discourse



Source: PBL

3 Just transitions in theory

The theory behind just transitions combines insights from sustainability transitions and justice scholarship. Transitions theory focuses on how societies shift from one system to another, especially through sociotechnical innovation; in this case, aiming to replace unsustainable with sustainable alternatives. Justice theory complements this by addressing the principles of fair distribution, meaningful participation, and recognition of past harms and current worldviews, ensuring that vulnerable communities are not left behind or disproportionately affected by these changes. Together, these approaches, which prioritise both ecological and social objectives, underpin the discourse of just transitions.

3.1 Understanding transitions

While the just transitions concept has been applied in practice-oriented and professional communities for some time, scientific attention to the concept is more recent, and is largely grounded in sociotechnical transitions literature (Newell & Mulvaney 2013; Swilling & Annecke 2012). Specifically, it has emerged from discussions on sustainability transitions, a relatively new branch of sociotechnical transitions theory that considers societal as well as technical change as necessary to shift to more sustainable systems (Newell & Mulvaney 2013; Swilling & Annecke 2012). Broadly speaking, a transition is a way of describing the processes and pathways through which economies and societies shift from one form to another. A sustainability transition is therefore a shift from an unsustainable to a sustainable state.

Two main narratives dominate current discussions on sustainability transitions (Swilling 2019). The first, sociotechnical transitions, focuses on how technological advancements can drive societal shifts that allow humanity to operate within ecological limits (Bergh et al. 2011; Geels 2018; Köhler et al. 2019). Central to this approach is fostering so-called niche innovations that replace unsustainable systems (Hegger et al. 2007; Kemp et al. 1998; Raven 2012). Technological innovation, for example in renewables such as wind, solar, and hydropower, is seen as essential to this transition. These transitions are largely thought to be brought about through market incentives and support mechanisms designed to ensure long-term viability and alignment with sustainable economic growth, including carbon pricing mechanisms (DNB 2021), subsidies for green technologies (Duan et al. 2024), and investments in energy-efficient practices. Education and workforce reskilling are also considered critical for preparing workers for emerging roles in the green economy (European Training Foundation 2023).

Despite its focus on sustainable innovation, sociotechnical transitions theory has been criticised for insufficiently addressing broader governance issues, including institutional power dynamics, social equity, and justice (Köhler et al. 2019; Oates et al. 2022; Wieczorek 2018). Furthermore, until recently, transitions theory has been predominantly applied in – and developed based on – Northern European contexts, perhaps reflecting the provenance of the most cited authors, many of whom come from or are based in the Netherlands, Scandinavia, and the United Kingdom. Here, the focus has been more on technological experimentation and less on the co-evolution of technology and society (Hegger et al. 2007). Until now, many actors within this arena have focused on the transition to a sustainable future without explicitly identifying the need for accompanying systems change (Heffron & McCauley 2018).

In response to these limitations, a second, emergent post-capitalist discourse argues for transitions that go beyond economic diversification to prioritise harmony between humans and nature (Ghosh 2021). This perspective envisions prosperity through community-focused and ecologically responsible relationships (Escobar 2015) and is rooted in Indigenous values like those encapsulated by *Buen Vivir* from Latin America and *Ubuntu* from southern Africa. *Buen Vivir* – meaning 'good living' – is grounded in worldviews that emphasise harmonious coexistence with nature, collective wellbeing, and balance between economic, social, and environmental priorities. *Ubuntu*, often translated into English as 'I am because we are', is a southern African philosophy centred on interconnectedness, compassion, and mutual respect within the community. Both promote a model of prosperity that prioritises relational, ecological, and communal wellbeing over individualistic economic success. Advocates argue that a growth-oriented, extractive economy cannot ensure universal wellbeing, as it inherently harms ecosystems and communities (Escobar 2018). Instead, sustainability demands rethinking economic models to minimise environmental impact and support more inclusive, cooperative societies. Scholars are drawing from this discourse, as well as political ecology, to explore how transitions can be framed not only as technological shifts but also as profound societal changes that challenge existing power structures (Avelino et al. 2024).

The just transitions framework aims to reconcile these two discourses by integrating their shared aspirations of structural change with a commitment to both sustainability-driven innovation and social justice (Morena et al. 2020; Newell & Mulvaney 2013; Swilling 2019; Swilling & Annecke 2012).

3.2 Understanding justice

3.2.1 Equality, equity, justice – what's the difference?

The words 'equality', 'equity', and 'justice' are often used interchangeably. While this is not always a cause for concern, it is relevant to understand the difference. Broadly speaking, while equality gives everyone the same tools, and equity ensures that people get what they need, justice seeks to create a system where such disparities no longer exist in the first place whilst also attempting to make up for past harms (Figure 4).

Equality refers to treating everyone the same, regardless of their individual circumstances. In an equal system, all people receive the same resources, opportunities, or treatment. While everyone starts from the same place, it often falls short in practice because people do not have equal starting points due to historical, social, or economic factors. For example, giving every student the same textbook might seem fair, but it does not account for students who may need additional support or resources to succeed. In the context of sustainability, equality means providing everyone with the same level of access to resources and environmental benefits, such as clean water, energy, or green spaces. It does not account for the fact that different communities face varying degrees of environmental degradation or resource scarcity. Treating everyone equally in sustainability efforts can overlook the historical and systemic environmental injustices that disproportionately affect marginalised populations, such as low-income communities and Indigenous groups (Avelino et al. 2024).

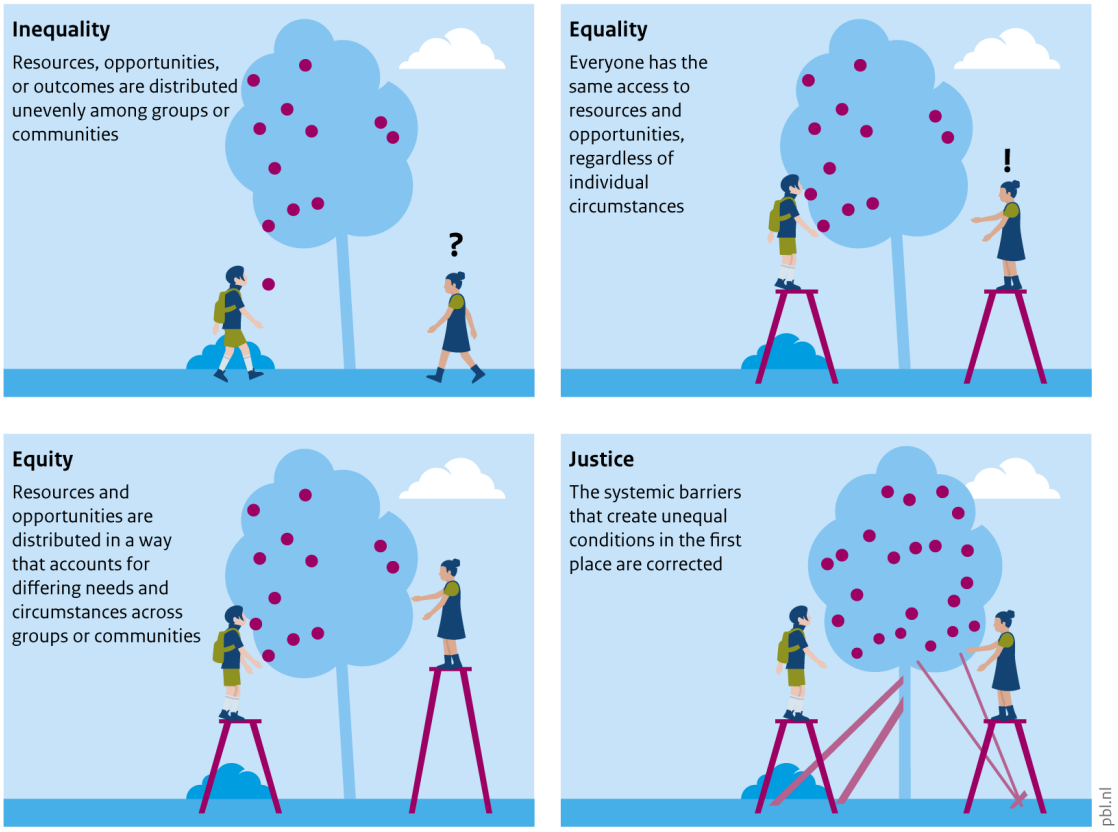
Equity goes beyond equality and recognises that people have different needs and circumstances, which thus requires distributing resources or opportunities in a way that accounts for those

differences. Equity aims to level the playing field by ensuring that people have access to the specific resources they need to achieve comparable outcomes. Using the same student example, equity would mean providing additional tutoring or tools to students who struggle more, rather than giving everyone the same blanket assistance. Equity, in sustainability, means distributing resources and environmental benefits in a way that acknowledges these disparities. It requires identifying which communities are more vulnerable to climate change or environmental hazards and ensuring they receive more targeted assistance. For instance, an equitable approach to clean energy access might mean prioritising investments in solar power for rural or low-income areas that have historically lacked reliable energy infrastructure. Equity ensures that the burdens of environmental issues, such as pollution or climate change impacts, are not borne by already disadvantaged groups.

Justice goes beyond both equality and equity by addressing the root causes of inequality. Justice is concerned with correcting systemic barriers that create unequal conditions in the first place. It is not just about providing immediate resources (as equity does), but also about transforming the systems and structures that lead to those disparities. In education, justice would involve creating policies that address the socioeconomic factors, discrimination, or biases that lead some students to struggle more than others. Justice, within sustainability transitions, seeks to address the systemic roots of environmental inequality. It seeks to dismantle the economic, political, and social structures that have allowed certain populations to bear the brunt of environmental harm while others benefit from natural resource use. Environmental justice movements, for example, advocate for policies that both rectify past environmental injustices and prevent future ones, such as regulating industries that pollute in vulnerable neighbourhoods. Justice is about creating a sustainable future where environmental harms and benefits are not only distributed equitably but where systems are transformed to ensure that all communities can thrive in a healthy environment.

Figure 4

The difference between (in)equality, equity, and justice



Source: Tony Ruth, adapted by PBL

3.2.2 Justice-related concepts

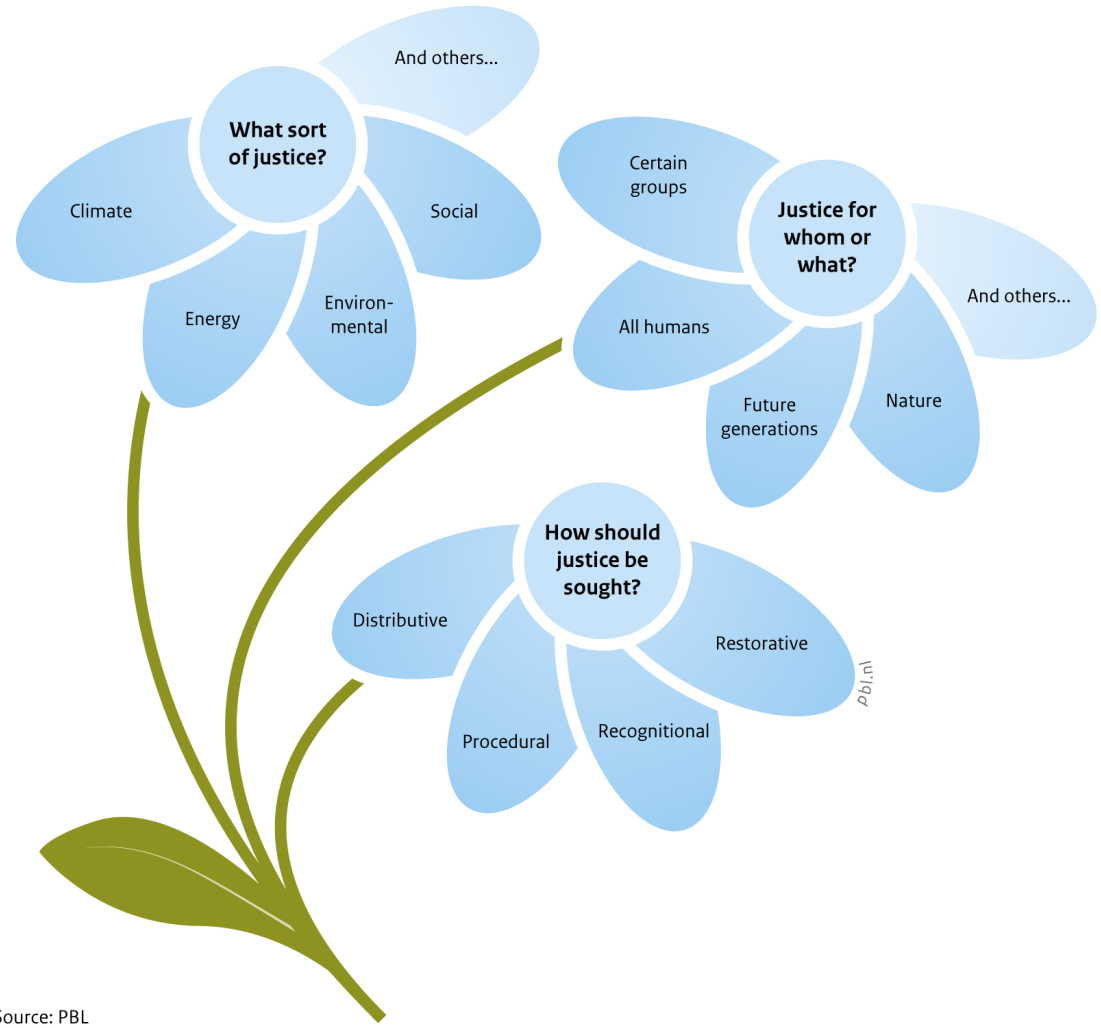
There are various ways to understand justice (Tables 1 and 2; Figure 5), which are not independent or mutually exclusive, but rather interconnected and sometimes reinforcing or contradicting one another (Hazrati & Heffron 2021). The concept of justice has been contested throughout history, with diverse interpretations and frameworks emerging over time. Consequently, the pursuit of straightforward solutions to establish a definitive understanding of justice may overlook its inherent complexity and the contextual factors influencing its application.

Justice can be viewed through different domains, referring to the context in which it is sought. In the context of just transitions, social, environmental, climate, energy, and ecological justice are often highlighted, though many others exist; this list is hardly exhaustive. Justice can also be framed by its impact: who or what is affected? This includes specific groups, such as those based on gender, income, or ethnicity, as well as intergenerational justice, which emphasises our responsibilities to future generations, and justice for nature, which positions nature itself as a moral subject deserving of ethical consideration.

In addition, the academic literature establishes that there are different approaches to pursuing justice. Four key approaches are commonly identified: distributive justice, procedural justice, recognitional justice, and restorative justice (Heffron & McCauley 2018; Schlosberg 2009; Sumaila 2019). These dimensions will be elaborated upon in the following section.

Figure 5

Questions to ask about justice in sustainability transitions



Source: PBL

Table 1

Different kinds of justice

Domain	Description
Social	The fair and equitable distribution of resources and opportunities among all members of society, aiming to address disparities and ensuring that everyone has a chance for a decent quality of life.
Environmental	The principle that all members of society, regardless of their race or socioeconomic status, have the right to equal protection from environmental and health hazards, and that environmental benefits should be distributed fairly.
Climate	Involves addressing the disproportionate impacts of climate change on vulnerable communities and advocating for solutions that take into account historical and current contributions to greenhouse gas emissions.
Energy	Seeks to ensure that access to affordable, reliable, and clean energy is available to all, without discrimination, and that energy policies and transitions do not disproportionately harm marginalised communities.

Domain	Description
Ecological	Focuses on maintaining a balance between human activities and the natural environment, aiming to prevent ecological harm and ensuring that ecosystems are preserved and protected for future generations.
Economic	The pursuit of a fair and equitable economic system that provides opportunities for all individuals to access basic needs, achieve financial wellbeing, and reduce income inequality.
(Natural) resource	Countries that are resource-rich are often the poorest and suffer from high rates of poverty, inequality, human rights abuse, corruption, and environmental degradation. Natural resource justice calls for more just and equitable extractive industries (Oxfam 2016) and the wise use of natural resources for the good of all (Sweetman & Ezpeleta 2017).
Epistemic	Ensuring that all voices, especially those historically marginalised or underrepresented, are fairly included and respected in the processes of knowledge production, decision-making, and policy formulation regarding the framing of and action taken to address sustainability issues (Temper & Del Bene 2016).

Table 2
Justice for whom or what

Target group	Description
All humans	All individuals, regardless of their nationality or background, are treated fairly and have access to basic rights and opportunities on a global scale. Considers issues like international human rights, global poverty, and peace, with the focus on the shared humanity of people worldwide.
Particular groups	Focuses on addressing historical and ongoing inequalities and discrimination faced by specific communities or groups, such as racial or ethnic minorities, women, Indigenous peoples, LGBTQIA+ individuals, or other marginalised populations. It seeks to rectify the injustices they have experienced and promote their wellbeing and inclusion.
Nature	Recognises the importance of protecting the environment and natural ecosystems through addressing environmental harm, preventing ecological degradation, and preserving the balance between human activities and the natural world, to ensure the wellbeing of nature as well as the people who depend on it.
Future generations	Intergenerational justice focuses on making decisions and taking actions today that do not harm the wellbeing and rights of future generations, by practising the responsible stewardship of resources and addressing climate change and environmental sustainability.

3.2.3 Justice dimensions

Distributive justice

Distributive justice focuses on the fair allocation of benefits and burdens within a society. In the context of a just transition, distributive justice seeks to ensure that advantages – such as physical safety, quality of life, and financial benefits – are shared equally, while disadvantages – such as

taxes or environmental pollution – are distributed fairly across the population. When these principles are ignored in policymaking, it can lead to public backlash and policy failure, as seen in the 'Gilets Jaune' (Yellow Vests) protests in France in 2018. This movement began in response to a proposed fuel tax, which disproportionately impacted rural and low-income workers, underscoring the unequal distribution of environmental and economic burdens. The protests soon evolved into a broader critique of economic inequality and government disconnect from the concerns of ordinary citizens.

In the context of just transitions, various distributive approaches can be used in the pursuit of fairness. For instance, CO_2 reduction targets can be achieved through different methods: calculating targets based on equal per-capita reductions suggests that fairness means everyone should reduce their carbon footprint by the same amount; factoring in historical cumulative emissions suggests that fairness requires countries with higher past emissions to bear a greater share of the responsibility (PBL 2024). Each of these approaches can be considered 'just' depending on how justice is defined in terms of distribution. However, these different distributive justice frameworks lead to vastly different policies and outcomes for various stakeholders. As a result, labelling a policy as 'just' does not guarantee that it will address everyone's concerns, and achieving universal consensus is unlikely. Instead, policies should be evaluated within their specific contexts to address the most pressing needs and challenges of those affected.

Box 2. Distributive justice

Definition: Distributive justice refers to the fair allocation of resources and benefits within a society.
Application: Distributive justice serves as a valuable framework for assessing the material equity of policies, providing a basis for evaluating how resources are shared between different groups, as well as the way that burdens and benefits impact different groups.
Limitations: Distributive justice is less suited to deciding what the important burdens and benefits are that should be distributed, exactly how they should be distributed (i.e. based on which aspects decisions should be taken), and which stakeholders should be considered in in the distribution.
Underlying assumptions: Distributive justice assumes that any benefits and burdens can be divided and shared. However, many of the benefits and burdens related to sustainability are neither divisible nor easily shared. Examples include a stable global climate, healthy ecosystems, and the freedom to live according to one's chosen way of life – none of which can be neatly quantified and allocated to individuals or groups.

Procedural justice

Procedural justice focuses on decision-making processes where all stakeholders have an equal voice. Essential elements of procedural justice include meaningful consultation, transparency from start to finish, and clear communication. Public involvement is a key aspect of this (Hajer 2011) but is often considered inadequate if organised in a technocratic way that is more about informing citizens rather than enabling them to participate in decision-making (European Environment Agency 2019; Gazley 2017). Active and inclusive approaches, particularly involving marginalised stakeholders, could better prevent procedural *in*justice – when certain viewpoints are overlooked or inadequately addressed – which can severely hinder policymaking. Research consistently highlights the increased risk of policy failure when procedural injustice is not properly addressed (Alford-Jones 2022; Hudson et al. 2019);

conversely, consistently higher satisfaction with outcomes and greater trust between stakeholders is frequently associated with procedures that are considered just (Ansell et al. 2017; Bos et al. 2014).

In the context of just transitions, stakeholders might include workers and communities in industries and regions undergoing change, or local populations, labour organisations, and environmental defenders and advocates. Procedural justice could be pursued through collaboration with these diverse stakeholder groups in shaping sustainability policies. Ensuring that all affected parties feel their ideas, needs, and concerns are heard is crucial for a fair transition. Alternative methods, like citizen assemblies (e.g. Climate Assembly UK (Howarth et al. 2020)), aim to enhance public understanding and support for climate policies while incorporating alternative or often overlooked perspectives. It is especially important to actively engage vulnerable groups to ensure that marginalised voices are heard throughout the process.

Box 3. Procedural justice

Definition: Procedural justice refers to the fairness of decision-making processes, emphasising the importance of transparent and equitable procedures.
Application: Procedural justice is a powerful tool for democratising decision-making and empowering all stakeholders to express their views on what constitutes a just transition. It can also foster a sense of fairness among stakeholders, enhancing their trust in the process and reducing the likelihood of public backlash against projects or policies that impact them.
Limitations: For procedural justice to lead to just outcomes, consultations with stakeholders must be meaningful and impactful. If stakeholder input does not lead to significant changes in policy, trust in the process and the institution responsible can be eroded rather than enhanced. Another challenge is ensuring that all stakeholders, not just those with greater financial, institutional, or social resources, for example, have an equal say when it comes to decision-making.
Underlying assumptions: Procedural justice assumes that stakeholders are always able to organise in ways that accurately and effectively represent their interests, even those who are vulnerable or marginalised. It also assumes that institutions are capable of listening and implementing necessary changes based on stakeholder input.

Recognitional justice

Recognitional justice involves acknowledging all individuals and groups as equally important stakeholders and recognising the value of diverse perspectives (Honneth 2004; Sumaila 2019). It can thus be considered as foundational to the other justice dimensions. In the context of just transitions, recognitional justice is often invoked by undervalued or underrepresented groups to demand acknowledgement of their knowledge systems, cultural practices, identities, and experiences. This can range from the state's simple recognition that a group is affected by sustainability policies to incorporating Indigenous forms of knowledge into international decarbonisation efforts. Failing to address recognitional justice can lead to growing polarisation and create long-lasting grievances that are difficult to resolve (McCoy et al. 2018).

Box 4. Recognitional justice

Definition: Recognitional justice focuses on acknowledging and respecting the identities, experiences, and cultural differences of individuals and communities, ensuring that they are valued in both social and legal contexts.
Application: Recognitional justice is an essential tool in empowering groups to participate meaningfully in other forms of enacting justice. It also helps to integrate diverse value systems and knowledge frameworks into broader practices.
Limitations: While recognitional justice is an important step in making stakeholders feel heard, it does not automatically lead to equitable outcomes for all. This could shift the focus away from taking more concrete actions with tangible outcomes, instead allowing for superficial attention to justice without achieving real, substantive changes. It therefore often needs to be combined with other forms of justice that focus on achieving concrete and fair results.
Underlying assumptions: Recognitional justice assumes that acknowledging and valuing all viewpoints and identities is inherently just, even when such viewpoints might be discriminatory.

Restorative justice

Restorative justice originated in the criminal justice system as a method focusing on repairing the wellbeing of the victim rather than merely punishing the perpetrator, its goal being to restore the victim to their state prior to the injustice (Hazrati & Heffron 2021). It is less frequently discussed in the context of just transitions compared to distributional, procedural, and recognitional justice, but it is gaining recognition for its relevance in addressing the link between historical injustices such as colonialism and their ongoing socioeconomic implications for sustainability (Jones et al. 2024).

Historical injustices can affect stakeholders as profoundly as contemporary injustices (Ghosh et al. 2021). The conventional approach to restorative justice focuses on returning what was taken. However, in many instances of historical injustice – such as the appropriation of Indigenous lands or the disproportionate consumption of the carbon budget – the passage of time has altered the context to the point where returning what was taken is no longer feasible. For instance, while restoring all lands in the Americas to Indigenous peoples might appear just based on their historical suffering, such an action would displace millions of people today. In such complex situations, the literature advocates for a 'reparation as reconciliation' approach. This strategy aims to help affected groups progress equitably, ensuring that historical injustices do not impede future advancements for all involved (Gibbs 2009). This process may involve acknowledging and apologising for past wrongs, thereby validating the experiences of those engaged in the restorative journey. It can also include facilitating dialogue and fostering engagement between affected groups and other stakeholders, thereby promoting understanding and collaborative solutions.

The concept of restorative justice is increasingly being explored in relation to nature itself. These ideas draw on Indigenous legal traditions and have prompted some national governments (such as Ecuador, New Zealand, and Canada) to implement rights of nature laws, whereby legal rights are awarded to Indigenous populations or even natural entities in order to strengthen protection (Haluska 2023). Granting legal rights to nature seeks to address past environmental harms by enabling ecosystems themselves to be represented in legal contexts, aiming not only to recognise nature's intrinsic rights but also to repair ecosystems through protective and restorative actions.

Box 5. Restorative justice

Definition: Restorative justice aims to repair previous harms by focusing on reconciliation, rehabilitation, and the active involvement of affected parties in resolving disputes.
Application: Restorative justice is a crucial tool for addressing injustices that may be less visible due to their historical context but are highly relevant to stakeholders and their views on the fairness of transitions.
Limitations: Restorative justice procedures are not guaranteed to address future harms or prevent new injustices from arising.
Underlying assumptions: Restorative justice assumes that past harms can be remedied in a way that contributes to a more just situation. Determining the best approach to address these past harms involves normative considerations about fairness and justice.

Box 6. Justice dimensions in South Africa's just transition

South Africa is especially vulnerable to climate impacts such as droughts and floods, while facing severe social challenges, including high levels of poverty, unemployment, and inequality, exacerbated by its history of apartheid and colonial exploitation (Presidential Climate Commission 2022). Additionally, as a large emitter of greenhouse gases, contributing roughly 1% of global CO_2 emissions due to its coal dependency, South Africa is at a critical juncture to address both environmental and social concerns (EDGAR 2023).

In response, the South African government established the Presidential Climate Commission (PCC) in 2020, comprising representatives from government, labour organisations, academic institutions, businesses, and civil society—ensuring inclusive decision-making processes that exemplify *procedural justice*. By 2022, the PCC had developed the Just Transition Framework, a guiding document for the equitable roll-out of $8.5 billion in just transition funding (primarily loans from high-income countries) secured through the Just Energy Transition Partnership (JETP) (European Commission 2021).

The framework prioritises supporting disadvantaged groups, including coal workers, the unemployed, and women, by creating economic opportunities and reducing inequalities in South Africa's transition to a greener economy. This focus on equitable outcomes highlights *distributive justice*. Recognising the importance of addressing historic and systemic oppression, particularly from apartheid, the framework also includes commitments to repair past harms, demonstrating a commitment to *restorative justice* (Presidential Climate Commission, 2022).

3.3 Understanding just transitions

Justice is a crucial addition to transitions-focused discourses as, until now, many actors within this arena have focused on environmental change without explicitly identifying the need for accompanying systems change (Heffron & McCauley 2018). However, due in part to the many different understandings of 'justice' and 'transitions', there remains no widely accepted definition of what a just transition entails, and different actors, institutions, and policies employ the term in different ways. As a result, the focus of just transition programmes and policies tend to differ

between organisations. In this section, brief typologies of these differences are presented, with the intention of highlighting the ways just transitions discourses are, can be, and should be mobilised. The key places in which most just transitions discourses differ are as follows (Stevis & Felli 2020):

- Scale and scope: Does the just transition aim to benefit specific groups in localised contexts affected by specific aspects of the sustainability transition, or is it designed to serve humanity as a whole?
- View on human-nature relations: Is the just transition aimed at achieving fairness and equity for all humans, or is it focused on safeguarding Earth's natural ecosystems?
- Transformative potential: Is the intention to enhance fairness within the existing system, or does it seek to envision and create an entirely new societal framework?

3.3.1 Scale and scope of just transitions

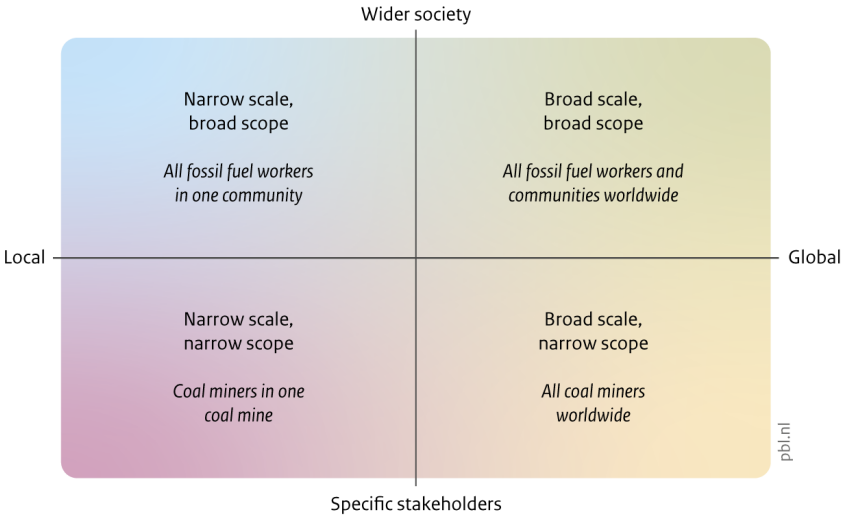
Scale and scope are critical for understanding how justice issues manifest and can be addressed. Transitions also vary in terms of how inclusive they are in scope and scale, ranging from exclusive (benefiting specific groups) to inclusive (benefiting society as a whole), while strategies for achieving this vary along a spectrum from preserving (and greening) the status quo to envisioning radically different societal futures (Figure 6). Effective policy will thus have to take into account not only the level at which justice is pursued, but also the breadth of those impacted.

Scale refers to the different levels at which justice issues are addressed, ranging from local communities to global systems. When considering justice spatially, it is important to recognise that actions and impacts occur across multiple levels. Powerful actors, such as multinational corporations or influential states, often have greater control over the scale at which they operate, while less powerful groups, such as workers and local communities, may have limited influence. Examining these scales empirically helps reveal how different places and groups interact, as well as the power dynamics that contribute to and shape outcomes.

Scope encompasses the range of those affected by these issues, including specific stakeholders and broader societal impacts**.** The scope of just transitions must consider who is affected and in what ways. It is often not sufficient to address justice at a single level or for a specific group. For example, holding all consumers in the Global North equally responsible for greenhouse gas emissions overlooks differences in their capacity to make sustainable choices or influence major economic decisions. Similarly, transition plans must account for all stakeholders in supply chains, not just select groups. Effective just transition strategies are more likely to address broader community needs and tackle inequalities, such as gender disparities in access to jobs and opportunities.

Figure 6

The scale and scope of just transitions, using the example of coal mining



Source: PBL, adapted from Stevis and Felli 2021

Box 7. The EU's just transition mechanism – an example of narrow scale and scope

The European Green Deal (EGD) represents a landmark initiative by the European Union (EU) aimed at transforming the bloc's economy into a sustainable and climate-neutral one. The EGD sets ambitious goals and objectives across multiple sectors, including energy, transportation, agriculture, and industry (European Commission 2019). It aims to achieve climate neutrality by 2050, meaning that the EU's greenhouse gas emissions will be reduced as far as possible, and the remainder will be offset by removing an equivalent amount from the atmosphere. This goal is aligned with the Paris Agreement's objective of limiting global warming to well below 2 degrees Celsius. In addition to mitigating climate change, the European Green Deal prioritises environmental protection, biodiversity conservation, and the transition to a circular economy. It seeks to promote sustainable resource use, reduce pollution, and preserve natural ecosystems for future generations.

The EU has made a commitment to ensure that the transition to a climate-neutral economy is not only environmentally sustainable but also socially and economically just. Within the context of the EGD, just transitions has been explicitly identified as a key pillar and plays a central role in guiding policy development and implementation. The EGD's Just Transition Mechanism has put in place various policy measures and initiatives aimed to provide for supporting vulnerable communities. Amongst other things, the Just Transition Mechanism offers financial support in the form of the Just Transition Fund, designed to support regions most affected by the transition to a green economy by providing funding for job creation, retraining programmes, and investment in sustainable infrastructure. It also stimulates economic diversification through supporting training programmes for workers, small and medium enterprises, and start-ups involved in sustainable practices, and promotes community engagement by making social protection measures available for those facing job losses or economic disruptions as a result of the transition. The mechanism is primarily accessible to regions that are currently heavily coal-dependent.

While the EGD incorporates principles of just transitions, it has also faced critique for its narrow breadth and depth. While the EU has made commitments to support the regions and workers directly affected by the transition, the scale of investment and support may not be sufficient to address the full range of knock-on social and economic impacts in regions that are most heavily reliant on carbon-intensive industries (Akgüç et al. 2022). Concerns have also been raised regarding its global justice considerations; it focuses primarily on promoting sustainability within the EU, but there are broader distributional justice concerns related to the EU's global environmental footprint and consumption patterns. For example, reducing emissions and improving jobs within EU borders may directly or indirectly contribute to increased emissions, environmental degradation, and exploitation of the labour force elsewhere through changing trade and resource extraction patterns. From a procedural justice perspective, the extent to which stakeholders from affected states outside of the EU were consulted has been found limited: ultimately, critics argue that the EGD risks deepening global inequalities by shifting environmental and social burdens onto the Global South (Strambo 2020).

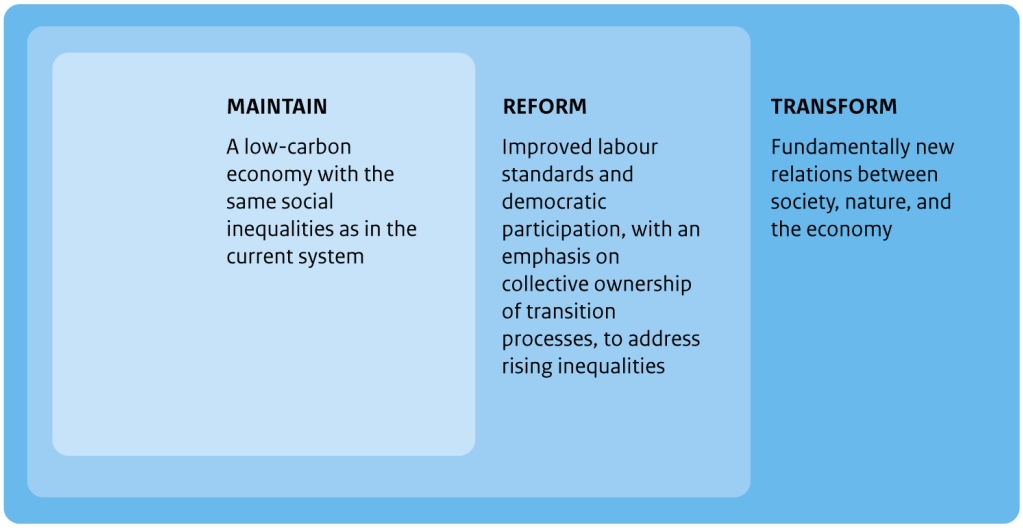
3.3.2 Transformative potential of just transitions

Various interpretations and applications of the just transitions concept can be derived from different logics about what constitutes sustainability (Maas & Lucas 2021). One way of understanding just transitions approaches is thus the extent to which they contribute to transformative change, whereby actions undertaken in the name of sustainability are also used as an opportunity to pursue the reorganisation of power relations and the promotion of greater social justice (Krause et al. 2022). Transformative change is acknowledged as urgent by, among others, major multilateral organisations, who advocate for systemic shifts that tackle the root causes of environmental degradation and inequality (IPBES 2021; IPCC 2023).

Ultimately, these different approaches to understanding just transitions – whether maintaining, reforming, or transforming (Figure 7) – should not be viewed in a rigid hierarchy, with one necessarily better or worse than the others (though some would argue a truly just transition is only possible when transformative), but rather as a heuristic for interpreting policy approaches through a just transition lens.

Figure 7

Different types of just transition based on transformative potential



Source: PBL, adapted from Just Transition Research Collaborative 2018

The term 'just transitions' is widely used but applied differently by different actors. In general, its use in relation to the social dimension of the transition ranges from creating more jobs in a green economy ('maintain') to a radical overhaul of the economic system and a reimagining of human-nature relations ('transform'). Adapted from Just Transition Research Collaborative (2018); see also Barca (2015).

Maintain

A 'status quo' approach to just transitions involves maintaining existing economic and social structures while minimising harm to affected workers (and sometimes communities) during the shift from a fossil-based to a low-carbon economy. The primary focus of such a transition is often on ensuring that any jobs lost due to the phasing out of fossil fuels are replaced with new, green jobs (Just Transition Research Collaborative 2018).

However, a corporate-driven transition that does not also address issues of employment distribution or other negative externalities could result in the prioritisation of short-term economic concerns over broader environmental and social goals. Less attention may be given to those who are already marginalised by policies and practices that prioritise corporate profits and economic growth over community and environmental wellbeing, potentially leading to the preservation of industries or practices that are inherently unsustainable, such as the extractive industries (Bainton et al. 2021). Accordingly, the inequitable distribution of benefits and burdens is a major concern in transitions that do not address underlying issues around the organisation of society. Critics argue that it may involve a greening of free market capitalism without changing its fundamental global rules (Castán Broto 2022). This concern is particularly relevant in international development, since the negative consequences of globalisation are disproportionately experienced by people in LMICs. A status quo transition could result in LMICs continuing to bear the brunt of environmental degradation and economic inequality, while wealthier groups reap the benefits, thus further entrenching existing power imbalances.

A status quo transition could, however, serve as a stop-gap measure, buying time to address other pressing concerns – such as building new infrastructures, establishing more diverse employment options, or improving social services – before attempting more extensive structural reforms.

A phased approach can also provide stability while giving local communities time to adjust and prepare for larger structural changes. For example, in coal-dependent regions like parts of Appalachia in the United States, the immediate transition to renewable energy could devastate local economies and livelihoods without sufficient planning, reskilling programmes, or economic alternatives in place. In LMICs, where fossil-based industries underpin essential infrastructure, a status quo approach can help maintain socioeconomic stability in the short term by minimising harm through compensatory measures.

Reform

Reform in the context of just transitions encompasses efforts to achieve greater equity within existing economic systems by enhancing labour standards and addressing inequalities, while also calling for more profound changes in governance structures and decision-making processes.

Reform efforts aimed at achieving equity within the current economic system can be broadly categorised into two distinct approaches: managerial reform and structural reform. Managerial reform seeks to enhance fairness within the existing framework of consumption-based growth, modifying rules and standards related to employment, occupational safety, and health. This may include improving labour standards and addressing the growing inequalities faced by fossil-dependent communities. Such an approach often relies on public policies, social dialogue, and union engagement, emphasising the involvement of affected workers and communities in the transition to a low-carbon economy.

Structural reform calls for a more profound transformation of governance structures, democratic participation, and decision-making processes. In this model, workers, communities, and affected groups assume a central role in the transition, with a focus on collective ownership and management of a new, decarbonised energy system and other sustainability projects and assets. This approach transcends mere financial compensation, addressing the underlying structural inequalities that determine who participates in and benefits from the fossil fuel energy system.

Transform

Just transitions are increasingly recognised for their potential to drive transformative change. A transformative approach to just transitions goes beyond merely addressing the immediate impacts of decarbonisation; it calls for a comprehensive restructuring of the global economy and the socio-political systems that underpin fossil fuel extraction. These systems are often viewed as fundamental contributors to both environmental degradation and social inequality (Feola 2020). This approach advocates for alternative development models that challenge the prevailing economic focus on continuous growth. Examples include embracing concepts like sufficiency or degrowth (Escobar 2015), shifting beyond GDP as the primary measure of prosperity (Oates et al. 2023; UN Women 2023), and reimagining human-nature relationships to foster more sustainable and equitable futures (Ordóñez et al. 2022). This broader vision of just transitions seeks not only to mitigate the effects of climate change but also to fundamentally reshape the structures that drive unsustainable practices.

Transformative change is defined as ‘a fundamental, system-wide reorganisation across technological, economic, and social factors, including paradigms, goals, and values’ (IPBES 2019). In such a context, a transformative just transition would thus be a framework for an economic system aligned with ecological sustainability and human and natural wellbeing. Characteristics of such a transformation might include: the reduction of production and consumption to levels that are

compatible with natural ecological limits; the restoration of ecosystems by enabling natural recovery processes; the shift away from economic systems that prioritise growth, profit, and the private accumulation of resources at the expense of broader social and environmental values; the implementation of zero-waste systems based on cradle-to-cradle production, use, and recycling; and the acknowledgement of the importance of local, Indigenous, and/or place-based environmental stewardship (Escobar 2018; Indigenous Environmental Network 2017; Jones et al. 2024). It would aim to ensure that in all economic and human activities, the health of ecosystems and the integrity of natural systems are primary considerations.

While workers and work-related issues remain important in such an approach, a transformative understanding of just transitions goes beyond this by advocating for the dismantling of interconnected systems of structural oppression (such as racism, patriarchy, and classism) that are deeply rooted in contemporary societies. In addition to changes in policy, transformative potential is to be found in grassroots empowerment, everyday resistance, and the power of movements; culture, tradition, and Indigenous or local knowledge are also considered essential elements of the transformation process. The transformation extends beyond environmental concerns to address issues of social justice and equality. Marginalised social groups like women, Indigenous peoples, and LGBTQIA+ communities often invoke the idea of transformative just transitions. Although the specific pathways to achieve transformation vary depending on context and societal baselines, the ultimate goal of a transformative just transition is to overcome the systems and structures that perpetuate environmental problems and social injustice.

Box 8. Maintain – Reform – Transform: An example from the mining sector

As the global economy shifts towards a greater reliance on renewable energy and low-carbon technologies, the demand for critical raw materials and minerals will grow (de Haes & Lucas 2024). These materials – such as lithium, cobalt, and rare earth elements – are essential for the production of batteries, wind turbines, and other key components of the energy transition. However, the mining of these resources often has significant environmental and social impacts, particularly in regions heavily dependent on extractive industries. A just transition in the mining sector is therefore required both to ensure that the benefits of this transition are equitably shared, and also to prevent further harm to vulnerable workers, communities, and ecosystems. There are different ways of approaching this transition.

Maintain: greening the status quo
A 'maintain' approach in the mining industry would focus on greening existing operations while preserving the current economic and social structures. Mining companies might be encouraged or required to adopt cleaner technologies, reduce emissions, and improve energy efficiency in their operations, but without altering the fundamental business model. Job losses due to the shift away from coal or other non-renewable minerals could be addressed through compensation or by creating green jobs in adjacent sectors. This approach would largely rely on voluntary, market-driven actions, such as corporate-led sustainability initiatives, with minimal disruption to the global supply chain and market dynamics.

Reform: overhauling governance and labour practices
In a 'reform' scenario, the focus would shift to achieving greater equity within the mining sector by restructuring governance and labour practices. This could involve stronger regulations, worker protections, and social dialogue to address rising inequalities within mining communities,

particularly in regions heavily dependent on fossil fuel extraction. A managerial reform might see increased participation of affected workers and communities in decision-making processes, ensuring that job transitions, retraining programmes, and social safety nets are put in place. A more structural reform could involve collective ownership models for new renewable energy projects, allowing mining-dependent communities to share in the benefits of the low-carbon transition. Here, the economic model remains largely intact, but efforts are made to distribute benefits more equitably and address the social impacts of decarbonisation.

Transform: reimagining economic models and human-nature relations
A 'transform' approach would represent a fundamental rethinking of the role of mining in society and the economy. Instead of merely reducing the environmental impact of mining operations, this approach would advocate for scaling back resource extraction to align with ecological limits and prioritising regenerative practices. It could involve shifting to circular economic models where materials are reused and recycled, drastically reducing the need for new mining activities. Mining communities might pivot towards alternative forms of livelihood, rooted in sustainable local economies that prioritise ecological stewardship over resource extraction. Indigenous or local knowledge would play a critical role in reimagining human-nature relations, with a focus on restoring ecosystems and dismantling the systems of exploitation that have driven unsustainable mining practices. The goal would be to realign economic activities with the health of the planet and social justice, going far beyond the immediate impacts of the energy transition.

4 Considerations for just transitions in practice

The previous chapter outlined the key theories and principles that underpin just transitions discussions. These concepts can be used to understand and adjust actions undertaken for the sustainability transition. So, what might this look like in practical terms? This following section examines critical just transitions considerations across some of the most significant ongoing transboundary transitions, particularly the shift towards a low-carbon energy future and the transition of global supply chains towards more equitable and sustainable forms.

4.1 Climate change and the energy transition

A lot of research and actions related to just transitions have been focused on the decarbonisation of the energy sector (Parliamentary Office of Science and Technology et al. 2023), reflecting the urgent need to address climate change through emission reductions. This emphasis is particularly relevant given the stark global inequalities in both per capita emissions and vulnerability to the impacts of a changing climate.

At the heart of discussions around climate change mitigation lies the question of how to distribute responsibilities in a way that is perceived as fair. International frameworks such as the Paris Agreement underscore the importance of including issues related to justice and equity, for example by calling for climate action that accounts for the principle of common but differentiated responsibilities. This principle recognises that different countries should have different climate targets, yet does not specify on exactly what basis this should be assessed.

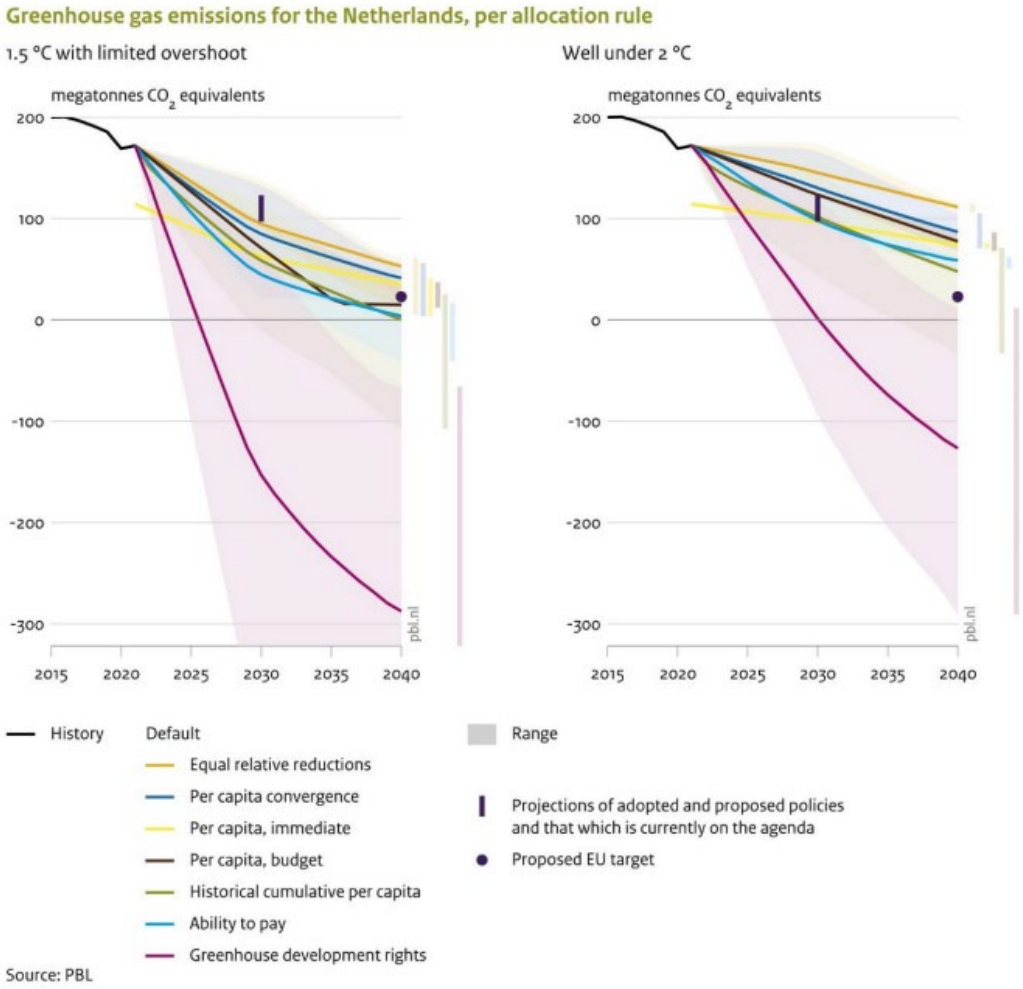
Various methods have been proposed to calculate what constitutes a 'fair share' of mitigation efforts, ranging from per capita emissions reductions to targets that allocate a larger share of reductions to countries that have more historical responsibility or greater economic capacity to act (Holz et al. 2018; Rajamani et al. 2021). These approaches aim to account for countries' differing abilities to reduce emissions, whilst also acknowledging that high-income countries, which have disproportionately contributed to historical emissions, should lead in mitigation efforts (Den Elzen et al. 2005). Decisions about which accounting principles to prioritise often stem from normative choices that are deeply influenced by differing perspectives on justice.

Box 9. A just emissions reduction target for the Netherlands NL

Several justice principles are relevant for setting emissions reduction targets, including equality, capability, responsibility, the right to development, and continuity, all linked to international environmental law and Common But Differentiated Responsibilities (CBDR). Different emissions reduction targets, known as allocation rules, can be derived from these principles, reflecting varying justice perspectives. Examples include equal relative reductions, per capita allocations, historical-cumulative per capita allocations, ability to pay, and the Greenhouse Development Rights framework. These rules aim to balance countries' diverse capacities, responsibilities, and rights in

climate mitigation. Each approach has its advantages and challenges, shaped by normative choices and assumptions about fairness.

In this context, calculating a fair share of emissions reductions for the Netherlands proves to be complex, as illustrated by the varying outcomes of different allocation rules. For instance, the 'Historical Cumulative Per Capita' rule, which reflects historical emissions responsibility, shows a significant disparity based on the reference year chosen – 1990 versus earlier years, such as 1950 or 1850. This variation holds significant implications from a justice perspective; on the one hand, emissions from distant years may no longer be present in the atmosphere, suggesting that including them in current emissions targets could be unjust from a distributional standpoint. On the other hand, the Netherlands has economically benefited from carbon-intensive growth in countries impacted by colonial rule, indicating that a recognitional and restorative approach to justice may necessitate greater accountability. Ultimately, the absence of a universally accepted just reduction target leads to a wide spectrum of potential targets, heavily influenced by differing interpretations of justice principles and the overarching goals of the Paris Agreement.



Discussions surrounding accounting principles in climate mitigation policies often emphasise distributive justice, focusing primarily on the equitable allocation of resources and responsibilities.

This approach risks upholding established power structures, albeit in a greener manner (Castán Broto 2022). Climate justice advocates argue for a more transformative approach that addresses the root causes of inequality and historical injustices stemming from colonialism and industrialisation. For instance, research shows that, when emissions produced in territories under colonial rule are considered, the cumulative emissions of countries like the Netherlands increase significantly (Carbon Brief 2023). This historical perspective challenges the narrow focus on current emissions and calls for both a more comprehensive understanding of responsibility and a greater recognition of the past harms endured by countries affected by historical exploitation.

Table 3
Examples of possible justice considerations for energy and the climate

Type of justice	Justice consideration
Distributive justice	The impacts of climate change vary widely between countries, populations, and generations, and the ability of different groups to adapt to these consequences also differs based on factors such as wealth, access to technologies, and governance arrangements (Fleurbaey et al. 2014; PBL 2024). Furthermore, without a robust distributive justice framework, climate policies could increase economic inequalities, leading to greater hardship for communities reliant on carbon-intensive industries. Ensuring fair distribution of the benefits and burdens of climate action is therefore crucial to ensure the legitimacy of policy (Martens 2023) and to prevent exacerbating existing or creating new disparities (IPCC 2014).
Procedural justice	Climate policies often impact vulnerable communities that are not adequately represented in decision-making processes. Engaging these communities in the planning and implementation of climate actions is essential to ensure that their voices are heard and their needs are addressed. However, countries and populations differ in the influence they have on international decision-making processes that are largely responsible for setting climate targets (Fleurbaey et al. 2014).
Recognitional justice	Many communities, particularly Indigenous peoples and local groups, have long contributed to climate solutions through traditional knowledge and sustainable practices that are frequently overlooked by mainstream climate policy. Recognising and integrating these contributions is vital for equitable climate action (Mafongoya & Ajayi 2017).
Restorative justice	Different groups and countries have contributed to climate change in varying degrees; even today, there are vast differences in per capita emissions (PBL 2024). Recognising and addressing the historical injustices caused by past industrial activities – in particular the associated economic welfare that different groups have or have not been afforded on the basis of those activities – is necessary to support communities that have suffered disproportionately from climate impacts. Restorative measures could include compensation and support for recovery and adaptation.

Type of justice	Justice consideration
Other justice considerations	Focusing on technical solutions like renewable energy or carbon capture will be more reformative if accompanied by attention to broader social justice issues, such as equitable access to these technologies. A more transformative approach might include reimagining energy systems to prioritise local ownership and empowerment, promoting more sustainable consumption patterns, and recognising and compensating groups that have been systemically disadvantaged by the climate crises.

4.2 Circularity and transforming global supply chains

The global nature of many supply chains, especially those involving the import of materials from low- and middle-income countries, presents both opportunities and challenges from a justice perspective. It is increasingly considered essential to incorporate justice considerations to ensure that the transition to a sustainable global economy does not replicate the extractive and exploitative practices of the unsustainable linear economy (Pansera et al. 2024; Schroeder & Barrie 2022). Although these supply chains can generate economic benefits such as employment, they may also result in adverse effects such as environmental degradation, deforestation, and poor labour conditions (de Haes & Lucas 2024; Heffron 2020; Pedersen et al. 2021).

In the case of the Netherlands, the carbon and land footprints associated with Dutch supply chains extend far beyond its national borders. Consumption-based emissions are typically higher than the country's direct territorial emissions (from activities within its own borders), particularly due to its role as a global trading hub. This means that while the Netherlands' domestic emissions are substantial, a considerable portion of its overall emissions is driven by the global supply chains in which it participates (IEA 2020). Similarly, land used globally for food production, animal feed, and raw materials consumed in the Netherlands, amounts to three times the country's physical size. This global land use contributes to biodiversity loss and deforestation, particularly in low- and middle-income countries (Hanemaaijer 2023). The ecological and social impacts of Dutch consumption disproportionately affect vulnerable communities abroad.

The supply chains for ‘green’ technologies also present new challenges. For instance, extracting minerals such as lithium, cobalt, and nickel – critical for the production of renewable energy technologies – often leads to significant environmental damage and social harm (de Haes & Lucas 2024). Examples include deforestation linked to nickel mining in Papua New Guinea and water depletion caused by lithium mining in Chile. In the Democratic Republic of Congo, cobalt mining is associated with hazardous working conditions and child labour. Reliance on these supply chains creates a dilemma; although these minerals are essential for the green transition, their extraction may perpetuate existing injustices. However, restricting mining operations can simultaneously lead to job losses in regions where alternative options are limited.

Circularity is an oft-cited potential solution to the issues created by resource extraction in these supply chains. Adopting circular economy principles can help reduce the demand for raw materials by promoting recycling, reusing, and extending the lifespan of materials. Yet the circular economy

concept has faced criticism for inadequately representing voices and knowledge from the Global South, where many already advocate for a regenerative society focused on sustainability and ecological balance (Corvellec et al. 2021). Moreover, the circular economy often overlooks the informal sector, which has already historically engaged in reduction, reuse, and recycling practices (Lucas et al. 2021; Oates et al. 2023). Recognising the contributions of this sector is vital, as it embodies principles of circularity that predate formal initiatives (Zisopoulos et al. 2023).

In addition to mitigating the negative impacts of the Dutch economy internationally, a just international development agenda could support partner countries in pursuing their own sustainability goals. Addressing the underlying dynamics of global supply chains – rather than simply 'greening' them – will be crucial to ensure that the transition does not reinforce existing inequalities (see also Box 8 in Section 3.3.2).

Table 4
Examples of possible justice considerations for international supply chains

Type of justice	Justice consideration
Distributive justice	Unequal distribution of profits and environmental burdens in supply chains can harm low-wage workers and communities where occupational and environmental legislation is not stringent enough, or where it is not enforced. Equitable distribution of sustainability benefits is essential to prevent deepening global inequalities (ILO 2021). Failure to address impact distribution may lead to economic decline and job losses in extractive regions (Lucas et al. 2021; OECD 2020; UNEP & IRP 2020).
Procedural justice	Workers and local communities are often excluded from decision-making processes in supply chains. Involving these groups in discussions regarding labour practices and environmental impacts can ensure their rights and interests are considered (Corvellec et al. 2021).
Recognitional justice	Many individuals and communities already participate in circular practices that may not be acknowledged in policy frameworks, such as waste pickers or those involved in domestic repair labour (Azevedo 2017; Oates et al. 2023). These actors often perform important activities (such as waste collection) and have valuable knowledge regarding so-called circular practices but are typically under-recognised for their contributions (Carenzo 2020).
Restorative justice	Historical exploitation in global supply chains – such as colonial resource extraction and unfair labour practices – has left lasting harm on many communities. Restorative justice seeks to address these historical inequities through reparative measures like fair trade practices, compensation for exploited workers, and investment in sustainable development for affected regions (Hazrati & Heffron 2021).
Other justice considerations	A reformative transition would likely go beyond the maintenance of current production patterns, also aiming to address power imbalances between corporations and vulnerable workers. A transformative approach, on the other hand, would question existing consumption patterns and their connection to global inequities. Focusing exclusively on technical and managerial solutions, such as recycling methods and business standards, may divert attention from

Type of justice	Justice consideration
	more impactful and holistic approaches that foster stronger connections between communities and the environment in global supply chains.

4.3 Nature in just transitions

The relationship between human society and nature is complex, encompassing various values that inform understandings of environmental stewardship, resource management, and social equity. As summarised in the Nature Future Frameworks, different viewpoints are nature for society; nature for nature; and nature as culture/one with nature (PBL 2018).

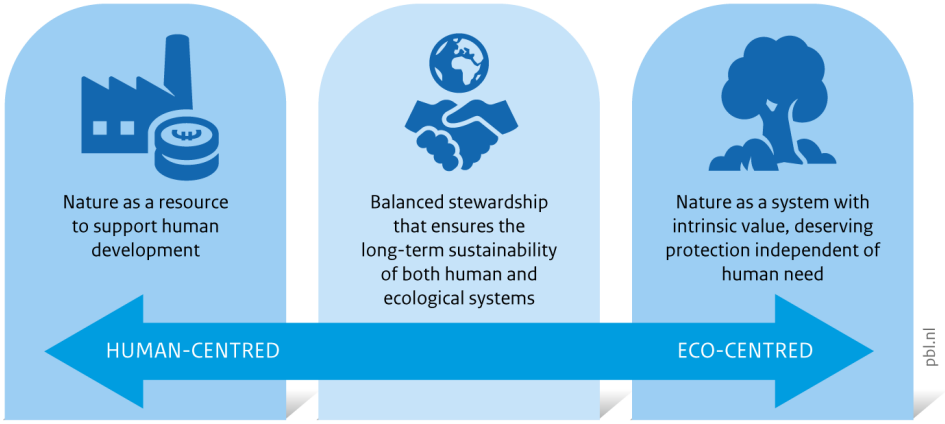
An instrumental view on nature (nature for society) considers the practical benefits that ecosystems provide to humans, including essential services such as clean water, air, and resources for food and energy (Figure 8). This approach aligns with economic theories that quantify nature's contributions to human welfare. Just transitions that incorporate such utilitarian values would likely focus on sustainable resource management practices that ensure the continued provision of these ecosystem services. For example, transitioning to renewable energy sources can be seen as a way to harness nature's resources without depleting them, hence aligning economic growth with ecological sustainability. Instrumental views on nature commonly attempt to quantify the financial benefits derived from natural resources and ecosystem services. This perspective is often used to justify conservation efforts and sustainable practices by highlighting the cost of environmental degradation. Just transitions that emphasise the economic value of nature can drive investments in green technologies and sustainable industries. Policies that incorporate natural capital accounting can lead to better resource allocation and encourage businesses to adopt environmentally friendly practices.

The intrinsic value of nature (nature for nature) is based on the perspective that the natural world has inherent worth, independent of its utility to humans. Philosophical frameworks such as deep ecology emphasise the moral imperative to protect ecosystems for their own sake. In just transition initiatives, this value might be reflected in policies aimed at protecting biodiversity and preserving natural habitats, for instance through conservation efforts that prioritise ecological health over economic gain.

The relational value of nature (nature as culture) highlights the interconnectedness of humans and ecosystems, emphasising the mutually beneficial relationship between these entities rather than viewing nature as separate from society. This perspective suggests that human wellbeing is deeply tied to healthy ecosystems and social relationships. Many cultures, particularly Indigenous communities, emphasise the cultural and spiritual value of nature, viewing it as integral to their identity, traditions, and worldviews. This perspective challenges reductionist views that prioritise economic or intrinsic values instead. Just transitions that acknowledge relational values foster community engagement and participatory decision-making processes. For example, community-led initiatives that focus on local food systems or urban green spaces can promote resilience, enhance social ties, and improve ecological health (de Bruin & Dengerink 2020). They likely also incorporate cultural values by recognising Indigenous land rights, traditional ecological knowledge, and the spiritual connection some communities have with their environment. Policies that empower Indigenous stewardship and land management often help facilitate transitions that both respect these values and contribute to greater ecological sustainability (Mapfumo et al. 2017).

Figure 8

Different perspectives on the value of nature



Source: PBL

Just transitions can be applied in different ways, ranging from anthropocentric (i.e. human-centred) to ecocentric (i.e. nature-centred). Departing from each of these different perspectives will likely lead to different understandings of what a transition looks like and how that can be equitably achieved, and, accordingly, will require different policy approaches (PBL 2018).

4.4 Trade-offs

Pursuing just transitions toward sustainability inevitably involves navigating inherent trade-offs between various actions and outcomes (De Neve & Sachs 2020). As different stakeholders prioritise different transitions with distinct dimensions of justice, conflicts may arise regarding which should take precedence. For instance, a focus on economic growth might conflict with environmental protection efforts, while social equity initiatives could challenge established economic structures. Examples of some of these trade-offs are given in Table 5, and ways of managing these trade-offs in practice are addressed in the following chapter.

Table 5
Examples of possible trade-offs between and challenges

	Energy and climate	Global supply chains	Nature
Energy and climate		Stricter climate policies in one region may cause production to shift to countries with looser regulations, resulting in lower global emissions reductions (known as carbon leakage) and potentially leading to increased pollution in those countries, which in turn might disproportionately impact marginalised communities. The rapid scaling of renewable energy infrastructure (e.g. wind turbines,	The transition to renewable energy sources, such as bioenergy, may encourage large-scale biofuel production. This can lead to land-use changes, like deforestation or the conversion of natural habitats into agricultural land. This can also affect those Indigenous communities and rural populations who rely on

	Energy and climate	Global supply chains	Nature
		solar panels) could lead to significant waste if proper end-of-life recycling systems are not in place. Without sustainable recycling practices, local communities near landfill sites – often low-income and minority populations – are more likely to experience health and environmental impacts from waste.	forest resources for their livelihoods.
Global supply chains	In ensuring fair treatment and pay for workers, higher costs may limit accessibility to sustainable goods, particularly for lower-income consumers. Furthermore, it may slow down the procurement of materials, such as critical raw materials, needed for renewable energy.		Recycling processes themselves can sometimes have negative environmental impacts. For example, the recycling of e-waste can result in hazardous emissions, posing risks to local ecosystems and human health.
Nature	Biodiversity conservation efforts may limit the availability of land for large-scale green energy projects, presenting a trade-off between protecting ecosystems and meeting climate mitigation goals.	Strict nature protection policies, such as limiting deforestation or restricting mining in ecologically sensitive areas, can negatively affect local economies, particularly in regions dependent on resource extraction industries. In LMICs in particular, environmental conservation may constrain access to natural resources that are central to local livelihoods, such as timber, minerals, or agricultural land.	

5 Reflections for policy

Just transitions is an inherently contested term

Despite the widespread acceptance of the need for just transitions, significant practical challenges persist. What someone considers fair is strongly based on their own worldview, background, and experience, all of which affect their positionality. It is often very subjective and can be determined by various factors including, as mentioned, their background and experience, but also their upbringing, environment, knowledge, and relationships. The sort of policy that is chosen to uphold just transition principles may therefore be strongly related to who is involved in the formation and implementation. Though what exactly constitutes a just transition is framed differently by different groups, all approaches share the idea that (i) the transition to a more sustainable and low-carbon world is necessary, and (ii) the said transition will have far-reaching ramifications for society and the economy.

The lack of a universally agreed-upon definition of a just transition is both a challenge and a strength

Currently, there is no universally agreed-upon definition of the term, and interpretations can vary widely among stakeholders. While the broad and adaptable nature of the concept can foster flexibility and encourage debate, creating space for a myriad of imaginaries for sustainable futures, it also presents challenges. The lack of a clear, shared definition can complicate implementation and may lead to instances of 'greenwashing', where the term is used superficially without the actualisation of accompanying actions to address systemic inequalities and environmental issues (White 2020). This risks undermining the movement's connection to the experiences and needs of those most directly impacted by transitions. This can result, in turn, in the concept becoming abstracted and disconnected from the real-world challenges faced by the very groups it seeks to protect. Furthermore, it increases the risk of it being co-opted or appropriated by broader, less focused agendas that fail to address the specific needs of those who have long been involved in and are most impacted by the transitions.

An important consideration for organisations that want to contribute to the pursuit of a just transition may therefore be to clearly define their own interpretation and understanding of the concept. This is important even if the understanding is intended to be flexible; managing just transitions effectively does not necessarily require the selection of a single perspective but rather an acknowledgement that various perspectives coexist. This is in itself a standpoint on just transitions and making it explicit will help with both the setting of (internal) organisational just transition goals as well as help to enhance the definitional clarity of the field in general.

A flexible just transitions framework could enhance understanding

Developing a shared baseline understanding of just transitions could be a useful step in providing a common foundation while remaining adaptable to varied contexts. This might take the form of an open-ended framework that outlines core principles – such as the different types of justice, and the idea of incorporating equity, inclusivity, and ecological sustainability – while leaving room for flexibility in exactly how these principles are applied across different regions, sectors, and governance levels. Such a framework could serve as a guiding tool for policymakers to ensure that their interventions are aligned with a shared vision of justice while allowing for local adaptation. Multi-stakeholder dialogues, bringing together government actors with businesses, civil society,

and different communities – particularly those most affected by the transitions, including internationally – would be an important step in the co-creation of a dynamic understanding of just transitions.

Just transitions considerations extend beyond national borders and are especially overlooked in policies that directly or indirectly impact LMICs

Much of the focus of just transitions work thus far has been on efforts within national or clearly defined borders (e.g. 'a just transition for South Africa' or the Just Transition Mechanism of the EU) (Chan et al. 2024). However, as the interconnectedness of global society becomes more evident, the concept is increasingly recognised within international sustainability agendas. This shift highlights the necessity of examining the socioeconomic and environmental impacts of both domestic and foreign policies, particularly regarding the implications for LMICs, which are especially vulnerable to these changes (Circle Economy 2022; UNCTAD 2022).

Further developing the international element of this is crucial. Today's world is inextricably interconnected and interdependent; global supply chains, climate impacts, and energy systems transcend national borders, and so too must understandings of just transitions (Chan et al. 2024). A growing recognition of the need to integrate international perspectives further serves to highlight the importance of balancing domestic priorities with global equity, particularly through ensuring that LMICs do not disproportionately suffer the burdens of sustainability efforts and that they are treated as equal participants in the transition challenge.

Policy coherence for development can be utilised to prevent unintended and unjust consequences for LMICs in the sustainability transition

To prevent unintended and unjust impacts on LMICs in the sustainability transition, policy coherence for development (PCD) can play a vital role. Coordinating domestic and international policies across sectors and aligning them with development goals could help to avoid conflicts between sustainability efforts and development priorities. The importance of policy coherence in the international development agendas of high-income countries like the Netherlands (IOB 2023) is underscored by the prominence of discussions on coherence at the global level; frameworks set out in international human rights treaties (including the recent UN General Assembly recognition of the universal human right to a clean, healthy, and sustainable environment) emphasise that the goals and results of development policies should not be undermined by other government policies.

Shifting patterns of inequality and critiques of traditional aid-focused development call for a more relational approach, acknowledging North-South interconnectedness (Horner & Hulme 2019). The Sustainable Development Goals highlight actions needed within high-income countries, especially in sustainable production and consumption (SDG 12), climate (SDG 13), and conservation (SDG 15). This broader approach does not reduce aid budgets but strengthens alignment across policy areas to support sustainable development goals (OECD 2019).

Achieving effective PCD also requires internal coherence between different policy areas and actors, from government agencies to businesses and local organisations. However, challenges remain, particularly when centralised programmes fail to adapt to local contexts, risking a one-size-fits-all approach. Strengthening local ownership, promoting cross-sectoral collaboration, and integrating embassy-led and centralised programmes can enhance the impact and fairness of international development efforts.

Involving LMICs in just transition efforts is essential, not only from a moral standpoint

As well as the ethical imperative of ensuring no one is left behind in the transition to a more sustainable world, engaging LMICs in just transitions can serve practical and strategic reasons that align with the interests of policymakers in higher-income countries. Many sustainability challenges, such as climate change, biodiversity loss, and resource depletion, do not respect national borders. Engaging LMICs ensures a more comprehensive approach to these issues, as their participation can lead to more effective and sustainable solutions. Supporting just transitions in these nations also contributes to global stability by minimising economic hardships and environmental degradation that can lead to social unrest and migration patterns that resonate globally. Committing to just transitions in LMICs enhances the international standing of higher-income countries, showcasing their dedication to equity and fairness while fulfilling obligations under international frameworks such as the SDGs and the Paris Agreement. Ultimately, supporting LMICs in their sustainability efforts is not only a matter of justice but also a strategic move that benefits both (bilateral) national interests and the global community at large.

There is no single governance solution for a just transition

Various governance-related challenges are likely to emerge when designing policy to contribute to just transitions (European Environment Agency 2024). As shown above, justice is an inherently complex and multifaceted concept. Accepting its multidimensionality, however, also means accepting that there can be no universal or generalisable principles of justice. A more utilitarian approach to justice might consider efforts taken to benefit society as a whole to be just, but this can obscure existing inequities at the level of the community or even the individual. Rather, what is just in a given situation can only be determined based on a thorough understanding of how the dimensions of justice apply to different groups in a given context. For example, conservation practices that protect natural ecosystems are in the interests of the global community but can prevent local communities from accessing natural resources upon which they rely for sustenance (Mabele 2019). This is a challenge when designing and implementing policy as it precludes the production of a set of easily imposed generic justice guidelines and instead means that any initiative must be contextually grounded.

There will always be tensions and trade-offs in pursuing just transitions

In practice, there will likely always be tensions and conflicts, meaning trade-offs will have to be made when seeking just outcomes (see Table 5 for examples of these trade-offs in relation to the major transitions discussed above). For example, balancing inclusivity and efficiency is widely noted as a challenge in the pursuit of just transitions (Stevis & Felli 2020), with there being tension between the time required for a thorough, consultative process on the one hand, and the need for urgent action on the other. This leads some to conclude that trade-offs may be required in the fairness of the process in order to accelerate policy development. However, viewpoints being overlooked or inadequately addressed can impede policymaking and hence heighten the risk of policy failure. This was demonstrated, for example, by the 'Gilets Jaune' (Yellow Vests) protests in France in 2018, where a proposed carbon tax increase on diesel fuel sparked outrage among protestors, highlighting perceived injustices and disparities in tax burdens and ultimately leading to the cancellation of the planned tax increases by the French Government (Just Transition Research Collaborative 2018). In general, it is agreed that the minimum necessary conditions for managing this are transparency in the rationale behind the decision, accountability on the part of the decision-makers, and the meaningful consultation and compensation of any affected groups (European Environment Agency 2024).

To the extent possible, identifying potential negative side effects and ways to mitigate these is desirable. However, when addressing 'wicked problems' like those related to global environmental challenges, there is always a risk of unintended consequences. Some of these consequences can be objectively identified and quantified, such as environmental degradation, economic loss, or health issues that arise from the implementation of specific policies. Others may be perceived as negative by certain groups or individuals. This perception often arises from the legitimacy challenges associated with policies enacted in the name of just transitions. Citizens may not regard such policies as legitimate for several reasons (Martens et al. 2023); for example, they may experience personal disadvantages due to these policies (distributive justice), believe that the processes leading to the implementation of these policies are unjust (procedural justice), or be sceptical about the benefits these initiatives claim to provide. Evaluating policies solely based on their (quantifiable) effectiveness and efficiency can thus overlook the values that matter most to citizens. Where it transpires that it is not possible to identify problems in advance, reactive measures will need to be taken to mitigate any negative impacts and compensate those who are adversely affected. As a result, the pursuit of just transitions requires sustained commitment and ongoing assessment, making it inherently open-ended and continuous.

Possible steps to be taken going forward, particularly within the context of foreign and development policy, could include:

- Develop a shared baseline understanding of a just transition, taking into account the different perspectives of justice and the various possible transition pathways
- Strengthen understanding of the connections between domestic and international policy and the associated implications for global just transitions
- Explore the justice-related trade-offs and synergies between transition-related activities
- Incorporate a diverse range of worldviews and justice considerations – including and especially those with origins in LMICs and other marginalised communities – into policy reflection

In conclusion, discussions on just transitions remain complex and evolving, with the concept serving both as a flexible framework and a source of debate

The lack of a universally accepted definition allows for diverse interpretations, reflecting the varied priorities of stakeholders across different regions and sectors. However, this openness also creates practical challenges, especially in aligning policies and ensuring meaningful accountability. A framework that incorporates core principles – such as fairness, inclusivity, and sustainability – while allowing for adaptation for regional, sectoral, and institutional diversity, may be essential for governments to mitigate risks like greenwashing, foster clarity in goal setting, and enhance the effectiveness of cooperation across sectors.

References

AIV (2023), *Klimaatrechtvaardigheid als noodzaak [Climate justice as necessity]*. The Hague: Adviesraad Internationale Vraagstukken.

Akgüç, M., K. Arabadjieva, & B. Galgoczi (2022), 'Why the EU's patchy 'just transition' framework is not up to meeting its climate ambitions', *SSRN Electronic Journal*.

Alford-Jones, K. (2022), 'How injustice can lead to energy policy failure: A case study from Guatemala', *Energy Policy*, 164(112849).

Ansell, C., E. Sørensen, & J. Torfing (2017), 'Improving policy implementation through collaborative policymaking', *Policy & Politics*, 45(3): pp. 467-486.

Avelino, F., K. Wijsman, F. van Steenbergen, S. Jhagroe, J. Wittmayer, S. Akerboom, K. Bogner, E.F. Jansen, N. Frantzeskaki, & A. Kalfagianni (2024), 'Just sustainability transitions: Politics, power, and prefiguration in transformative change toward justice and sustainability', *Annual Review of Environment and Resources*, 49: pp. 519–547.

Azevedo, G. (2017), 'Waste picker organisations and their contribution to the circular economy: Two case studies from a Global South perspective', *Resources*, 6(52).

Bainton, N., D. Kemp, E. Lèbre, J.R. Owen, & G. Marston (2021), 'The energy-extractives nexus and the just transition', *Sustainable Development*, 29(4): pp. 624-634.

Barca, S. (2015), 'Greening the job: Trade unions, climate change, and the political ecology of labour', in R.L. Bryant (ed), *The International Handbook of Political Ecology*, Cheltenham: Edward Elgar Publishing.

Bergh, J. C. J. M. van den, B. Truffer, & G. Kallis (2011), 'Environmental innovation and societal transitions: Introduction and overview', *Environmental Innovation and Societal Transitions*, 1(1): pp. 1-23.

Bos, K. van den, L. van der Velden, & E.A. Lind (2014), 'On the role of perceived procedural justice in citizens' reactions to government decisions and the handling of conflicts', *Utrecht Law Review*, 10(4).

Carbon Brief (2023), *How colonial rule radically shifts historical responsibility for climate change*, London: Carbon Brief.

Carenzo, G. (2020), 'Waste pickers at the heart of the circular economy: A perspective of inclusive recycling from the Global South', *Worldwide Waste Journal of Interdisciplinary Studies*, 3(1): pp. 1-14.

Castán Broto, V. (2022), '*Splintering urbanism* and climate breakdown', *Journal of Urban Technology*, 29(1): pp. 87-93.

Chan, T., A. J. Wang, & C. Higham (2024), *Mapping justice in national climate action: A global overview of just transition policies*, London: Just Transition Finance Lab and Grantham Institute.

Circle Economy (2022), *Thinking beyond borders to achieve social justice in a global circular economy*.

Convention on Biological Diversity (2024), *Biodiversity COP 16: Important agreements reached towards making 'peace with nature'*, Record of proceedings of the UN Biodiversity Conference 2024, Cali: Convention on Biological Diversity.

Corvellec, H., A.F. Stowell, & N. Johansson (2021), 'Critiques of the circular economy', *Journal of Industrial Ecology*, 26(2): pp. 421-432.

de Bruin and Dengerink (2020), *The impact of urbanisation on food systems in West and East Africa: Opportunities to improve rural livelihoods*, The Hague PBL Netherlands Environmental Assessment Agency.

de Haes, S., & P. Lucas (2024), *Environmental impacts of extraction and processing of raw materials for the energy transition*, The Hague: PBL Netherlands Environmental Assessment Agency.

De Neve, J.-E., & J.D. Sachs (2020), 'The SDGs and human wellbeing: A global analysis of synergies, trade-offs, and regional differences', *Scientific Reports*, 10(1).

Den Elzen, M. G. J., M. Schaeffer, & P.L. Lucas (2005), 'Differentiating future commitments on the basis of countries' relative historical responsibility for climate change: Uncertainties in the 'Brazilian Proposal' in the context of policy implementation', *Climatic Change*, 71(3): pp. 277-301.

DNB (2021), *Carbon pricing*, Amsterdam: De Nederlandsche Bank.

Duan, Y., B. Xi, X. Xu, & S. Xuan (2024), 'The impact of government subsidies on green innovation performance in new energy enterprises: A digital transformation perspective', *International Review of Economics & Finance*, 94(103414).

EDGAR (2023), *GHG emissions of all world countries*, EDGAR: Emissions Database for Global Atmospheric Research, Brussels: European Commission.

Escobar, A. (2015), 'Degrowth, postdevelopment, and transitions: A preliminary conversation', *Sustainability Science*, 10(3): pp. 451-462.

Escobar, A. (2018), *Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds*, Durham, NC: Duke University Press.

European Commission (2019), *The European Green Deal*, COM(2019) 640 final, Brussels: European Commission.

European Commission (2021), *France, Germany, UK, US, and EU launch ground-breaking international just energy transition with South Africa*, Brussels: European Commission.

European Environment Agency (2019), *Sustainability transitions: Policy and practice*, Copenhagen: European Environment Agency.

European Environment Agency (2024), *Delivering justice in sustainability transitions*, Copenhagen: European Environment Agency.

European Training Foundation (2023), *Skills for the green transition: Evidence from the EU neighbourhood*.

Feola, G. (2020), 'Capitalism in sustainability transitions research: Time for a critical turn?', *Environmental Innovation and Societal Transitions*, 35: pp. 241–250.

Fleurbaey, M., S. Kartha, S. Bolwig, Y.L. Chee, Y. Chen, E. Corbera, F. Lecocq, W. Lutz, M.S. Muylaert, R.B. Norgaard, C. Okereke, & A. Sagar (2014), 'Sustainable development and equity', in: *Climate change 2014: Mitigation of climate change, working group III contribution to the IPCC Fifth Assessment Report*, Cambridge: Cambridge University Press.

FOA & FILAC (2021), *Forest governance by indigenous and tribal peoples. An opportunity for climate action in Latin America and the Caribbean*, Santiago: FAO.

Gazley, B. (2017), 'The current state of interorganisational collaboration: Lessons for human service research and management', *Human service organisations: Management, leadership & governance*, 41(1): pp. 1-5.

Geels, F. (2018), 'Socio-technical transitions to sustainability', in: H. Shugart (ed), *Oxford Research Encyclopedia of Environmental Science*, Oxford: Oxford University Press.

Ghosh, B., M. Ramos-Mejía, R. C. Machado, S. L. Yuana, & K. Schiller. (2021), 'Decolonising traditions in the Global South: Towards more epistemic diversity in transitions research', *Environmental Innovation and Societal Transitions*, 41: pp. 106-109.

Gibbs (2009), 'Using restorative justice to resolve historical injustices of Indigenous peoples', *Contemporary Justice Review*, 12(1): pp. 45-57.

Hanemaaijer, A., M. Kishna, J. Koch, P. Lucas, T. Rood, K. Schotten, & M. van Sluisveld (2023), *Integrale Circulaire Economie Rapportage 2023*, The Hague: PBL Netherlands Environmental Assessment Agency.

Hajer, M. (2011), *The energetic society: In search of a governance philosophy for a clean economy*, The Hague: PBL Netherlands Environmental Assessment Agency.

Haluska, A. (2023), 'Restorative justice and the rights of nature: Using Indigenous legal traditions to influence cultural change and promote environmental protection', *Mitchell Hamline Law Review*, 49(1).

Hazrati, M., & R.J. Heffron (2021), 'Conceptualising restorative justice in the energy transition: Changing the perspectives of fossil fuels', Energy Research & Social Science, 78(102115).

Heffron, R. J. (2020), 'The role of justice in developing critical minerals', *The Extractive Industries and Society*, 7(3): pp. 855-863.

Heffron, R. J., & D. McCauley (2018), 'What is the 'Just Transition'?', *Geoforum*, 88: pp. 74-77.

Hegger, Dries. L. T., J. van Vliet, & B.J.M. van Vliet (2007), 'Niche management and its contribution to regime change: The case of innovation in sanitation', *Technology Analysis & Strategic Management*, 19(6): pp. 729-746.

Holz, C., S. Kartha, & T. Athanasiou (2018), 'Fairly sharing 1.5: National fair shares of a 1.5 °C-compliant global mitigation effort', *International Environmental Agreements: Politics, Law, and Economics*, 18(1): pp. 117-134.

Honneth, A. (2004) 'Recognition and justice', *Acta Sociologica*, 47(4): pp. 351–364.

Horner, R., & D. Hulme (2019), 'From international to global development: New geographies of 21st century development', *Development and Change*, 50(2): pp. 347-378.

Howarth, C., P. Bryant, A. Corner, S. Fankhauser, A. Gouldson, L. Whitmarsh, & R. Willis (2020), 'Building a social mandate for climate action: Lessons from COVID-19', *Environmental and Resource Economics*, 76(4): pp. 1107-1115.

Hudson, B., D. Hunter, & S. Peckham (2019), 'Policy failure and the policy-implementation gap: Can policy support programmes help?', *Policy Design and Practice*, 2(1): pp. 1-14.

IEA (2020), *The Netherlands—Countries & Regions*, Paris: International Energy Agency.

IISD (2022), *Indigenous peoples: Defending an environment for all*, Winnipeg: International Institute for Sustainable Development.

ILO (2015), *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, Geneva: International Labour Organisation.

ILO (2021), *Reports of the General Discussion Working Party: Inequalities and the world of work*, Record of proceedings of the International Labour Conference – 109th Session, 2021, Geneva: International Labour Organisation.

Indigenous Environmental Network, (2017), *Indigenous Just Transition principles*, Bemidji: Indigenous Environmental Network.

IOB (2023), *Results – evaluation action plan on policy coherence for developments*, The Hague: Policy and Operations Evaluation Department (IOB).

IPBES (2019), *Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

IPBES (2021), *Scoping report for a thematic assessment of the underlying causes of biodiversity loss and the determinants of transformative change and options for achieving the 2050 Vision for Biodiversity (transformative change assessment)*, Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

IPCC (2014), *Climate change 2014: Impacts, adaptation, and vulnerability, IPCC working group II contribution to the IPCC Fifth Assessment Report, part A: Global and sectoral aspects*, Geneva: Intergovernmental Panel on Climate Change.

IPCC (2023), *Climate Change 2023: Synthesis Report, contribution of Working Groups I, II, and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Geneva: Intergovernmental Panel on Climate Change.

Jones, R., P. Reid, & A. Macmillan (2024), 'An Indigenous climate justice policy analysis tool', *Climate Policy*, 24(8): pp. 1080-1095.

Just Transition Research Collaborative (2018), *Mapping Just Transition(s) to a low-carbon world*.

Kemp, R., J. Schot, & R. Hoogma (1998), 'Regime shifts to sustainability through processes of niche formation: The approach of strategic niche management', *Technology Analysis & Strategic Management*, 10(2): pp. 175-198.

Köhler, J., F. Geels, F. Kern, J. Markard, E. Onsongo, A. Wieczorek, F. Alkemade, F. Avelino, A. Bergek, F. Boons, L. Fünfschilling, D. Hess, G. Holtz, S. Hyysalo, K. Jenkins, P. Kivimaa, M. Martiskainen, A. McMeekin, M.S. Mühlemeier, ... & P. Wells (2019), 'An agenda for sustainability transitions research: State of the art and future directions', *Environmental Innovation and Societal Transitions*, 31: pp. 1-32.

Krause, D., D. Stevis, K. Hujo, & E. Morena (2022), 'Just transitions for a new eco-social contract: Analysing the relations between welfare regimes and transition pathways', *Transfer: European Review of Labour and Research*, 28(3).

Lucas, P., H. Brink, & M. van Oorschot (2021), *Addressing international impacts of the Dutch circular economy transition*, The Hague: PBL Netherlands Environmental Assessment Agency.

Maas, T., & P. Lucas (2021), *Global Green Recovery, from global narrative to international policy*, The Hague: PBL Netherlands Environmental Assessment Agency.

Mabele, M. (2019), *Green transformations, charcoal and social justice in rural east-central Tanzania*, working paper, Brighton: STEPS Centre.

Mafongoya, P. L., & O.C. Alayi (2017), *Indigenous knowledge systems and climate change management in Africa*, Wageningen: CTA.

Mapfumo, P., M. Onyango, S. K. Honkponou, E. H. El Mzouri, A. Githeko, L. Rabeharisoa, J. Obando, N. Omolo, A. Majule, F. Denton, J. Ayers, & A. Agrawal, (2017), 'Pathways to transformational change in the face of climate impacts: An analytical framework', *Climate and Development*, 9(5): pp. 439-451.

Martens, A., K. Vringer, J. Porsius, & J. Tennekes (2023), *Legitimiteit van beleid in beleidsevaluaties [Legitimacy of policy in policy evaluations]*, The Hague: PBL Netherlands Environmental Assessment Agency.

McCoy, J., T. Rahman, & M. Somer (2018), 'Polarization and the Global Crisis of Democracy: Common Patterns, Dynamics, and Pernicious Consequences for Democratic Polities', *American Behavioral Scientist*, 62(1): pp. 16-42.

Morena, E., D. Krause, & D. Stevis (2020), *Just Transitions: Social Justice in the Shift Towards a Low-Carbon World*, London: Pluto Press.

Newell, P., & D. Mulvaney (2013), 'The political economy of the 'just transition'', *The Geographical Journal*, 179(2): pp. 132-140.

Oates, L., A. Edwards, A. Ersoy, & E. van Bueren (2022), 'A corpus-assisted discourse analysis of sustainability transitions in urban basic infrastructure services', *European Journal of Spatial Development*, 19(4): pp. 44-71.

Oates, L., P. Kasaji, H. Sseviiri, A. Sudmant, A. Ersoy, & E. van Bueren (2023), 'Pluralising the urban waste economy: Insights from community-based enterprises in Ahmedabad (India) and Kampala (Uganda)', *Environment and Urbanization*, 35(2).

OECD (2019), *Recommendation of the council on policy coherence for sustainable development*, Paris: Organisation for Economic Co-Operation and Development.

OECD (2020), *Workshop on international trade and the circular economy summary report*, Paris: Organisation for Economic Co-Operation and Development.

Ordóñez, M. F., K. Shannon, & V. d'Auria (2022), 'The materialisation of the Buen Vivir and the rights of nature: Rhetoric and realities of Guayaquil Ecológico urban regeneration project', *City, Territory and Architecture*, 9(1): p. 1.

Oxfam (2016), *Achieving natural resource justice*, Nairobi: Oxfam.

Pansera, M., S. Barca, B. Martinez Alvarez, E. Leonardi, G. D'Alisa, T. Meira, & P. Guillibert (2024), 'Toward a just circular economy: Conceptualising environmental labour and gender justice in circularity studies', *Sustainability: Science, Practice and Policy*, 20(1).

Parliamentary Office of Science and Technology, H. Grub, & J. Wentworth (2023), *What is a just transition for environmental targets?*, London: Parliamentary Office of Science and Technology.

PBL (2018), *Report on the workshop 'Next stages in developing nature futures'*, The Hague: PBL Netherlands Environmental Assessment Agency.

PBL (2024), *Wat zijn rechtvaardige en haalbare klimaatdoelen voor Nederland? [What are just and feasible climate goals for the Netherlands?]*, The Hague: PBL Netherlands Environmental Assessment Agency.

Pedersen, A. F., J.Ø. Nielsen, F. Mempel, S.L. Bager, J.B. Jonsson, & E. Corbera (2021), 'The ambiguity of transparency in the artisanal and small-scale mining sector of Tanzania', *The Extractive Industries and Society*, 8(4).

Presidential Climate Commission (2022), *A Framework for a Just Transition in South Africa*.

Przybylinski, S., & J. Olhsson (2023), 'Indigenous approaches to justice', in: J. Ohlsson & S. Przybylinksi (eds), *Theorising justice: A primer for social scientists*, Bristol: Bristol University Press.

Rajamani, L., L. Jeffery, N. Höhne, F. Hans, A. Glass, G. Ganti, & A. Geiges (2021), 'National 'fair shares' in reducing greenhouse gas emissions within the principled framework of international environmental law', *Climate Policy*, 21(8): pp. 983-1004.

Raven, R. P. J. M. (2012), 'Analysing emerging sustainable energy niches in Europe: A strategic niche management perspective', in: G.P.J. Verbong & D. Loorbach (eds), *Governing the energy transition: Reality, illusion or necessity?*, Abingdon: Routledge Taylor & Francis Group.

Rockstrom, R. (2023), 'Earth beyond six of nine planetary boundaries', *Science Advances*, 9(37).

Schlosberg, D. (2009), *Defining environmental justice: theories, movements and nature*, Oxford: Oxford University Press.

Schroeder, P., & J. Barrie (2022), 'Is going circular just? Environmental justice and just transition – key elements for an inclusive circular economy', *Field Actions Science Reports*, 24: pp. 20-25.

Special Rapporteur on the Rights of Indigenous Peoples (2023), *Green financing – a just transition to protect the rights of Indigenous peoples*, New York City: United Nations.

Stevis, D., & R. Felli (2020), 'Planetary just transition? How inclusive and how just?', *Earth System Governance*, 6.

Strambo, C. (2020), *Just transition and the geopolitics of decarbonisation in the EU*, Stockholm: Stockholm Environment Institute

Sumaila, B. (2019), 'Just transformation to sustainability', *Sustainability*, 11(14).

Sweetman, C., & M. Ezpeleta (2017), 'Introduction: Natural resource justice', *Gender & Development*, 25(3): pp. 353-366.

Swilling, M. (2019), *The age of sustainability: Just transitions in a complex world*, London: Routledge.

Swilling, M., & E. Annecke (2012), *Just transitions: Explorations of sustainability in an unfair world*, Cape Town: UCT Press.

Temper, L., & D. Del Bene (2016), 'Transforming knowledge creation for environmental and epistemic justice', *Current Opinion in Environmental Sustainability*, 20: pp. 41-49.

UNCTAD (2022), *A Global Just Transition; Climate and development goals in a world of extreme inequalities*, Geneva: United Nations Conference on Trade and Development.

UNEP & IRP (2020), *Sustainable trade in resources: Global material flows, circularity and trade*, Nairobi: United Nations Environmental Programme.

UNFCCC (2015), *Paris Agreement to the United Nations Framework Convention on Climate Change*, Rio de Janeiro and New York City: United Nations Framework Convention on Climate Change.

UN Women (2023), *Gender-response approaches to foreign policy and the 2030 agenda*: Feminist foreign policies, New York City: United Nations Women.

White, D. (2020), 'Just transitions/design for transitions: Preliminary notes on a design politics for a Green New Deal', *Capitalism Nature Socialism*, 31(2): pp. 20-39.

Wieczorek, A. J. (2018), 'Sustainability transitions in developing countries: Major insights and their implications for research and policy', *Environmental Science & Policy*, 84: pp. 204-216.

WRR. (2023), *Rechtvaardigheid in klimaatbeleid. Over de verdeling van klimaatkosten [Justice in climate policy: About the distribution of climate costs]*, The Hague: Wetenschappelijke Raad voor het Regeringsbeleid.

Zisopoulos, F. K., B. Steuer, R. Abussafy, S. Toboso-Chavero, Z. Liu, X. Tong, & D. Schraven (2023), 'Informal recyclers as stakeholders in a circular economy', *Journal of Cleaner Production*, 415: pp. 1-15.