

Seven principles to realize a just transition to a low-carbon economy

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SEVEN PRINCIPLES FOR A JUST TRANSITION

1. Actively encourage decarbonization.
 2. Avoid the creation of carbon lock-in and more “losers” in these sectors.
 3. Support affected regions.
 4. Support workers, their families and the wider community affected by closures or downscaling.
 5. Clean up environmental damage, and ensure that related costs are not transferred from the private to the public sector.
 6. Address existing economic and social inequalities.
 7. Ensure an inclusive and transparent planning process.
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Key messages

- The “just transition” concept captures a full sweep of issues that raise fundamental questions about matters of fairness surfacing in the global shift to a low-carbon economy – particularly for people and regions that now depend on carbon-intensive industries and sectors.
- Based on an analysis of related literatures and historic case studies of similar economic disruptions, this policy report presents seven principles of a just transition. It suggests ways to implement these principles in practice, so that regions facing decarbonization can prepare for inevitable change on the horizon, with critical investments, policy reforms and inclusive dialogue.
- International financial and technical support for transition should prioritize those regions with low capacity, lower responsibilities for historical emissions, or high dependence on carbon-intensive economic activities.
- **To achieve equity aims, all principles should be pursued in parallel, not selectively. At the same time, nothing justifies postponing the first principle: the decarbonization imperative. Delays that leave regions behind as decarbonization accelerates across the globe are inherently unjust – as are the ramifications of unchecked climate change itself.**

The transition imperative

Structural change is already under way for fossil fuel production sectors and carbon-intensive industries worldwide in the wake of the rapid decrease in the cost of renewable energy. As the pressure builds to decarbonize – and quickly to meet internationally agreed targets for limiting climate change – these changes will intensify.

Low-carbon transitions are expected to create multiple economic opportunities and deliver a range of co-benefits, such as better air quality and energy security (Karlsson et al. 2020). However, these opportunities and the costs of the transition will not be distributed evenly between and within countries (Gambhir et al. 2018; Green and Gambhir 2019). A study by the International Labour Organization, for example, shows that while the low-carbon transition will lead to an increase in employment, new jobs will not necessarily emerge in regions where carbon-intensive jobs will be phased out (ILO 2018).

If the impacts of such changes are not well managed, the low-carbon transition may cause loss and hardship, especially in communities that today rely on carbon-intensive activities, including fossil fuel extraction. On the other hand, transitions that are well managed can ensure more just outcomes – both in more fairly sharing the costs associated with change, and in bringing new opportunities to these regions. Well-targeted investments and policies should nurture economic diversification and growth in new sectors. The transition at hand also presents an opportunity to simultaneously address long-standing inequalities or vulnerabilities, and to increase social cohesion. Many of the carbon-intensive regions that face the prospect of a radical transformation of their economic structure already struggle as a result of impacts associated with globalization, privatization, and automation of the mining and industrial sectors (GSI 2018; Jonek Kowalska 2015; Sartor 2018; Snyder 2018).

Managing the major disruption that decarbonization entails will also be critical to making transitions smoother – and may be fundamental in determining the prospects for transition at all. Indeed, while fairness matters from a moral standpoint, the prospects for a successful, global low-carbon transition may well hinge on whether societies manage to address equity concerns (Gambhir et al. 2018; Healy and Barry 2017). A transition perceived as fair is more likely to also be perceived as worthwhile for the wide range of actors whose participation is essential to spur change. As the Intergovernmental Panel on Climate Change put it, “...outcomes seen as equitable can lead to more effective cooperation” (IPCC 2014, p.5).

The concept of a “just transition” is increasingly invoked in public discussion about shifting away from fossil fuels and decarbonization of industry. Such calls come from both the moral imperative of leaving no one behind, and the political imperative to reduce resistance to change among potential “losers”. “A just transition can accelerate the process of decarbonization and increase the enormous socioeconomic opportunities that come with it.

But different stakeholders use the concept to highlight different kinds of equity issues; at times, some interpretations can seem contradictory to one another. To genuinely support just transitions, a guiding framework that respects these different perspectives is needed. Moreover, societies must heed the lessons offered by decades of historical examples of industrial decline.

What defines a just transition?

The concept of just transition has its roots in the 1970s, when labour unions in the United States argued for support for workers whose jobs were threatened by environmental regulations (Sweeney and Treat 2018). In the 1990s two prominent trade unionists coined the phrase (Gambhir et al. 2018). Global trade union organizations, such as the International Trade Union Confederation, then brought the concept to debates on climate change (ITUC 2009). The Paris Agreement formally recognizes “the imperatives of a just transition of the workforce” (UNFCCC 2015).

Although workers remain an important element, the just transition concept is today considerably broader, encompassing other aspects of potential harm raised by the prospect of broad-scale transitions. The concept draws on a wide range of perspectives, which share the common theme of properly considering and managing equity issues associated with structural change (and, alternatively, of inaction).

At the local level, ensuring a just transition means avoiding the creation of new sources of carbon lock-in – that is, avoid investing in or subsidizing fossil fuel activities, or increasing the dependence of small- and medium-sized enterprises (SMEs) or public revenue on carbon-intensive industries (Healy and Barry 2017). Adding to lock-in will only add to the population of “losers” in the near future and make the task of transition even more difficult. Moreover, ensuring a just transition means understanding that some individuals and groups are already marginalized, or have lower capacities to absorb new shocks; any strategy should protect or buffer these groups by ensuring adequate social protection measures are in place (Ferrer Márquez et al. 2019; ILO 2015; Mustata 2017). Just transition also means recognizing and mitigating the effects of decarbonization on other economic actors, such as small businesses that depend either directly (e.g. via supply chains) or indirectly (e.g. via local commerce) on carbon-intensive industries (UNFCCC 2016). Just transition also involves addressing the environmental legacies that mining and heavy industry often leave behind. This means ensuring that the private sector does not simply transfer the environmental costs of contaminated lands and water to the public purse – or leave environmental damage unaddressed (Healy and Barry 2017; Just Transition Alliance 2018).

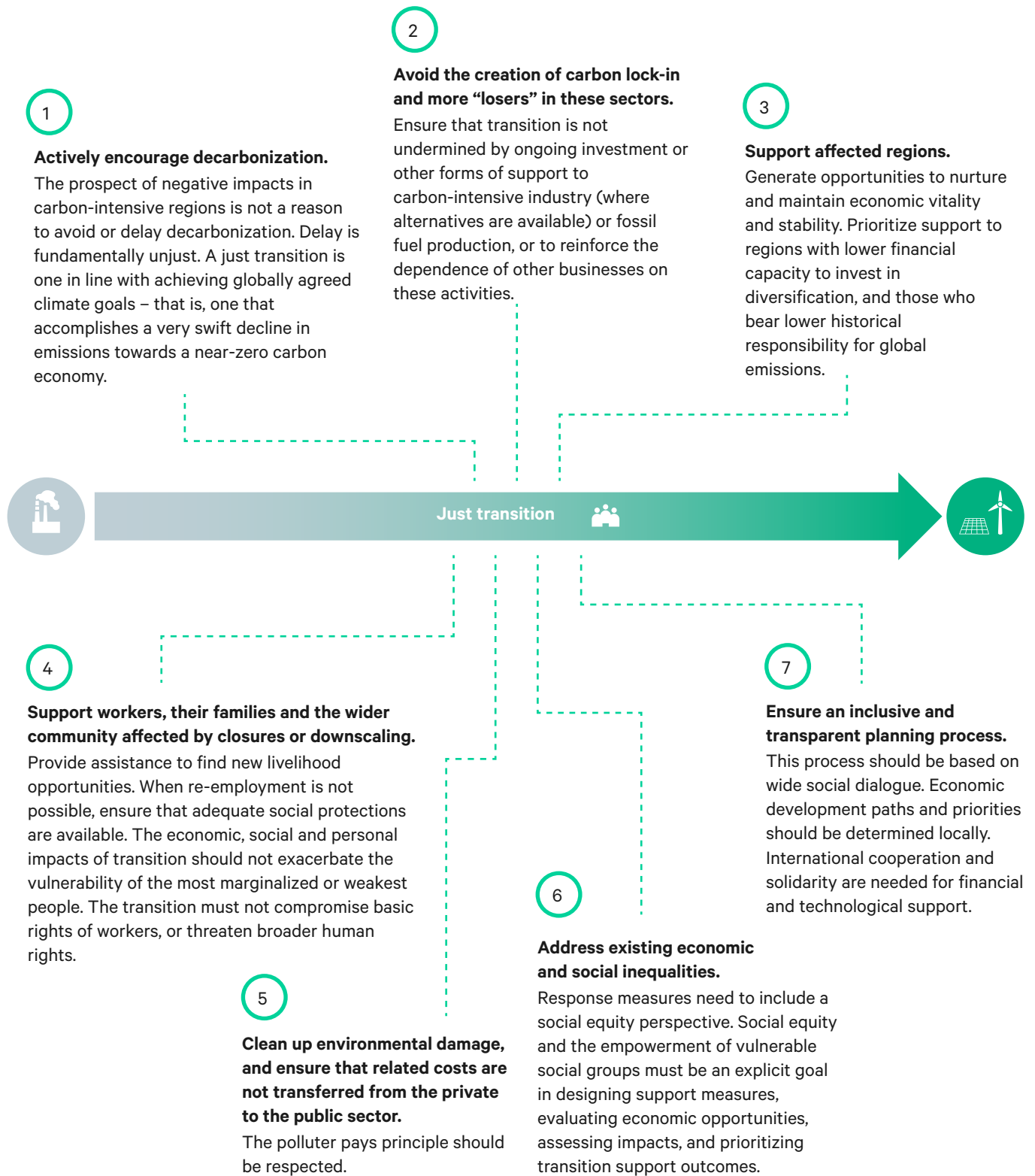
The just transition concept also integrates a number of equity issues at the international level. First, cutting greenhouse gas emissions quickly is an imperative to address the uneven distribution of burdens and costs associated with the impacts of climate change. Hence, it implies actively encouraging a low-carbon transition to protect the millions of people in many of the world’s poorest, smallest and most fragile countries, which are both the most vulnerable to the impacts of climate change, and least able to adapt to its impacts. In this view, delaying or slowing the transition away from the extraction and use of fossil fuels is fundamentally unjust (Reitzenstein et al. 2018). The concept also recognizes that some countries or regions will be more affected than others during this global effort to decarbonize. Change will involve considerable near-term costs, and different countries – and different regions within countries – have widely varying capacities needed to transition rapidly without major upheaval. To assist in managing these burdens, international financial assistance should be mobilized to help those countries that have lower financial capacity to invest in diversification and transition support, and/or lower responsibility for historical greenhouse gas emissions (Lenferna 2018; Muttitt and Kartha 2020).

Principles for just, low-carbon transition

From a wide literature review on how the concept has been used and framed by labour organizations, business organizations, researchers, civil society organizations and several country governments (see Appendix), we distil seven basic principles that – taken together – underlie the “justness” of transition. These principles highlight that supporting just transitions means not only dealing with compensation and employment measures for affected workers, but also looking for ways to ensure environmental protection and restoration, diversify industry and other economic activities, and tackle socio-economic inequity and gender inequality.

These principles provide a framework for making a reality out of the concept of just transition as economies decarbonize. Importantly, the principles should be pursued in parallel, not selectively. That means, for instance, that the absence of adequate support for workers is not in itself a reason for delaying the low-carbon transition, since such a delay would magnify inequalities associated with the impacts of climate change. A just transition means actively encouraging decarbonization at the same time as putting in place programmes and measures to ensure those affected are supported.

Figure 1. The principles of just transition



What history reveals about transition challenges

Our extensive review of historical industrial and mining closures and transitions that have taken place around the world reveals common impacts and challenges that regions face when their large industries close (Atteridge and Strambo 2020; Aung and Strambo 2020; Strambo et al. 2019). The analysis reveals a frequent reluctance of governments to engage ahead of looming crises – a key factor in the poorly managed transitions that unfolded.

The impacts of such transitions are diverse and many. For communities and regions, the socioeconomic repercussions of industrial decline and job losses include: increased poverty, inequality and social instability; out-migration that led to the decline in the size of the population; and fiscal challenges that made it difficult for local authorities to continue to provide basic services (Bontje and Musterd 2012; Caldecott et al. 2017; Carley et al. 2018; Rodríguez Torrent and Medina Hernández 2011; Runge et al. 2018; Sébastien Lechevalier 2015; Shepherd-Powell 2017). In some cases, deindustrialization leads to major political change, and links with the emergence of populist politics as a response to a sense of existential insecurity (Perchard 2013; Thorleifsson 2016).

Communities and the public sector caught up in the decline or closure of fossil fuel-related industries confront serious environmental problems and costs. Incomplete remediation of contaminated lands and waterways harms natural ecosystems and human health, and prevents new productive uses for former industrial lands. The private sector often passes the costs of its environmental liabilities to the public sector (Stacey et al. 2010; Unger 2017). Mine closures offer an example of how transitions can exacerbate existing inequalities, with unaddressed environmental damage exacerbating harm to indigenous communities already rendered vulnerable by the operational phase of mining itself (Sandlos and Keeling 2012). Moreover, the historical experience with environmental rehabilitation of former industrial and mining sites rarely adheres to the basic “polluter pays” principle that private industry, not the public, should bear the burden of the costs of remediating environmental impacts. Relevant stakeholders must actively anticipate and manage this risk (World Bank 2018). In some countries, heavy industry and/or mining sectors are dominated by publicly owned utilities, in which cases the financial burdens of environmental cleanup are already borne by the public.

For individuals and families, industrial decline has resulted not only in financial hardship but also in social isolation, the loss of a working identity, and the deterioration of mental and physical health and life expectancy (Della Bosca and Gillespie 2018; Ostry 2009; Pini et al. 2010). The distribution of these impacts varies by gender; some studies show that significant burdens transfer to women in such communities (Haney and Shkaratan 2003; Olivier 2012).

To avoid these impacts, and to make the most out of the opportunities that change brings, transition regions will almost certainly need a range of investments and other financial support mechanisms – including business support, public infrastructure investments, and debt restructuring for municipal governments to help ensure that provision of basic services continues. Affected regions will also need measures promoting economic diversification and regeneration, such as investments in new or upgraded infrastructure, programmes to expand small- and medium-sized enterprises, and fiscal and regulatory measures to attract new businesses to affected areas (Sartor 2018; Snell 2018). Empirical studies in Europe and the United States show that the successful development of new industries or new technologies in regions usually builds on inherited regional capabilities, such as existing local knowledge, skills and institutions (Berge and Weterings 2014; Boschma et al. 2015; Neffke et al. 2011), as reflected in the European Union’s “smart specialization” agenda (European Commission 2014).

To support workers, their families and other individuals, both passive and active labour policy measures are needed. Past experiences suggest that passive labour policy measures, such as early retirement, adjustment allowances and compensation schemes, are helpful in the short term

but insufficient in the long-term (Harrahill and Douglas 2019; Sartor 2018). Active labour-market policies – such as employment services, education and training, relocation support, subsidized employment, and support for the development of small- and medium-sized businesses – can improve outcomes (World Bank 2018). The best outcomes tend to emerge from multi-faceted support programmes that include re-skilling and job-seeking support, but also mental health services; and from those that are closely tied to the characteristics of the local or regional labour market (Galgóczi 2014; OECD 2017). Though support programmes frequently target direct employees only (Beatty 2016), the pursuit of a just outcome requires provision of support to a wide range of people (Piggot et al. 2019).

Operationalizing just transitions

Based on these lessons, and in light of the principles outlined above, in Table 1 we offer ideas for putting these principles into practice. These are not comprehensive, but rather indicative of the types of measures and actions that might be taken (and in some cases, avoided) to turn the rhetoric of just transition into reality.

The justness of transition comes from pursuing all of these principles and objectives simultaneously. In practice, the mission is beyond what any one institution can do alone. It will require cooperation across many different stakeholders, levels of government, and, sometimes, between countries. Well-executed programmes and investments can certainly make a difference to regions facing decarbonization, can inspire others, and can contribute to making transitions not only more just, but also more likely.

The pursuit of a just transition does not present an easy way to address the complexity and hardship inherent with major social and economic change. If anything, this approach makes the process more difficult in that it requires effort on the part of all stakeholders. However, the failure to pursue a just transition may mean that policies will lack the broad community buy-in and economic support necessary to achieve the changes needed.

Table 1. Putting just transition principles into practice

Just transition principle	Implementing and reinforcing this principle
Actively encourage decarbonization.	<p>Work actively towards decarbonizing economies as fast as possible. Invest in a clean energy transition, and in greenhouse gas reductions, particularly in hard-to-abate sectors (e.g. cement production, chemical production, steel manufacture, heavy transport, waste) that have few realistic, low-carbon substitutions available.</p> <p>Create space and support for just transition planning. Engage governments to reshape the norms around decarbonization and transition, particularly where transition debates are absent. Highlight practical steps that different stakeholders in regions facing future transition can take in anticipating change. This can help to lower resistance to decarbonization, and ensure time is used for preparation rather than avoidance.</p>
Avoid the creation of carbon lock-in and more “losers” in these sectors.	<p>Avoid new investments linked to high-carbon assets or activities. That is, do not create further carbon entanglement, or set the stage for stranded assets.</p> <p>Support programmes should not enhance the dependency of workers – or of local, regional, and national economies and political regimes – on fossil fuel-based economic activities. For example, programmes targeting SMEs that depend on carbon-intensive industries should support diversification.</p> <p>Avoid reviving or prolonging the decline of carbon-intensive industries.</p> <p>Promote fiscal reforms, particularly fossil fuel subsidy reform. Policies that promote or maintain carbon lock-in should end. This frees up more government revenue to support transition planning, and to roll out policies, investments and financial support measures for affected communities.</p>
Support affected regions.	<p>Actively support regions that today depend on high-carbon industry with finance (including investment), technical assistance and policy engagement that promotes diversification of the economy and re-skilling of workers.</p> <p>Support the private sector: Ensure tailored support to promote new and expanded SMEs. Tailor SME-targeted assistance towards opportunities that generate significant, sustainable new employment opportunities. Support diversification of SMEs dependent on carbon-intensive industries.</p> <p>Help carbon-intensive companies to diversify core activities where plausible. The private sector should bear those costs that can and should reasonably be anticipated as part of its business. Such costs include those mandated by new environmental regulations, and the effects of carbon pricing pressures (whether imposed domestically or through international supply chains). However, costs associated with voluntary changes to reduce carbon intensity might be appropriate for concessional financial support.</p> <p>Locally contextualized solutions: Ensure that decisions about major, new industrial investment consider local assets and capacities, along the lines of the European Commission’s “smart specialization” agenda. Use a bottom-up process that involves diverse stakeholders sharing knowledge with one another (i.e. the “entrepreneurial discovery process”)(European Commission 2018; Hausmann and Rodrik 2002).</p> <p>Education and research: Work with education institutions and the private sector to identify and address skills gaps that constrain private-sector growth and investment.</p> <p>Infrastructure: Finance universal infrastructure (such as transport, communication and education) that aids a wide range of beneficiaries. Focus on increasing connectivity between carbon-intensive regions and surrounding regions – particularly linking urban and rural areas. Seek opportunities to repurpose existing industrial infrastructure, where this might be an asset or magnet for new and small businesses with similar technical needs.</p> <p>Urban regeneration: Support activities that promote urban regeneration of town centres, rather than the creation of new business parks around the fringes of towns. Supporting urban renewal, and preventing decay can play an important role in maintaining or encouraging positive sentiment among the private sector, which can create a positive investment feedback loop.</p> <p>Technical and policy support: Develop guidance and policy frameworks that facilitate economic regeneration and diversification, spur job creation, and improve access to public services, particularly for vulnerable groups. Use fiscal and economic development policies to provide such support. Explore options for raising capital for regional investment in green industries and green infrastructure (e.g. issuing green bonds).</p> <p>Reform fiscal policy to ensure the maintenance of public income and resources, and guarantee the provision of key services in affected areas.</p> <p>Other efforts to strengthen institutional capacity in the public sector can also help, including addressing environmental legacies, and strengthening the rule of law and democracy.</p>

Support workers, their families and the wider community affected by closures and downscaling.	<p>Provide re-skilling to workers affected by low-carbon transitions, and ensure that these programmes are also available for workers' families and the wider community. Also, create opportunities for other forms of personal support, such as job-seeking, mental health counselling, and financial planning.</p> <p>Scale up social safety nets, particularly in regions where rapid or large-scale decarbonization is on the horizon, and where existing social protections are weak.</p>
Ensure that environmental damage is remediated, and that environmental costs are not transferred to the public sector	<p>Strengthen regulatory requirements and financial guarantees for mines and major industries in relation to site closure and environmental remediation responsibilities.</p> <p>Ensure individual mines have closure plans in place, and that financial resources for cleanup are secured by government. Further, introduce requirements that mines upgrade these plans to reflect new closure scenarios, such as externally driven closure scenarios that occur before planned end-of-mine-life.</p>
Address existing economic and social inequalities.	<p>Target support measures (such as SME initiatives, infrastructure investments, and policy reforms) to avoid higher cost burdens on the poor or other marginalized groups. Measures should actively aim to reverse trends of inequality. This means identifying and understanding pre-existing social inequalities (such as those based on gender, age, ethnicity or disability), and understanding the distributional impacts of transition and of different support measures. Transition support measures should target not only direct workers from carbon-intensive industries but also their families, contractors, and other vulnerable groups.</p> <p>Gender equality – and measures targeted at addressing gendered inequality – should be integrated into any package of transition support, including when designing support measures; evaluating employment and other economic opportunities; assessing livelihood impacts or environmental costs; and prioritizing outcomes from transition support.</p> <p>Indicators used to assess the progress of just transitions should go beyond net job creation, diversity of manufacturing, and regional economic growth. Other indicators could relate to, for instance the kinds of jobs created, who has access to them, and levels of broader community resilience and innovation.</p> <p>Fossil fuel subsidy reform, strengthening of social safety nets, and programmes such as energy efficiency measures that result in cost savings for low income households can contribute to tackling inequality and vulnerability.</p> <p>Prioritize investment support for types of public infrastructure, and the design of public infrastructure that can provide significant benefits to poorer or otherwise more marginalized members of the community.</p>
Ensure an inclusive and transparent planning process.	<p>Create opportunities for wide local engagement with transition planning, so that many different stakeholders and social groups are active participants in defining regional visions and opportunities, and in identifying challenges and risks that need to be managed. Locally driven and coordinated transitions have tended to fare better than those coordinated by national governments.</p>

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Appendix: Review of Just Transition Principles

The table below summarizes the range of concepts raised by literature on just transitions that imply principles for what a just transition is. The table is structured according to the seven principles we have distilled from this literature, to clarify the underlying sources that emphasize and define each of these principles.

Theme	Principles (Outcomes)	Reference
Decarbonize rapidly.	Phase down global extraction consistent with 1.5°C.	Muttitt and Kartha 2020
	Consider the potential outcomes of both action and inaction. Examine the likely effects on all vulnerable communities and sectors from transformation (climate action), and from global warming (inaction). Do not treat climate ambition and just transition as either-or pursuits. Consider a transition to be just only if it is fast enough to address the goal of limiting global temperature rise to 1.5°C.	Reitzenstein et al. 2018
	Reduce emissions.	Wei 2018
	Pursue a near-zero-carbon economy.	Worrall et al. 2018
	Anticipate and plan for how the workers and communities will face climate risk, and strive to build resilience. Advocate for rapid and just action on climate change, and policies and investments that support just transition.	Just Transition Centre and B Team 2018
	Follow a climate-ambition principle. Ensure that the energy transition in the nationally determine contributions (NDCs) and long-term emissions reduction strategies (LTS) reflects an ambitious attempt to achieve zero greenhouse gas emissions by 2050, and, thereby, contributes to achieving the goal of limiting temperature rise to 1.5°/2°C.	Hirsch et al. 2017
	Avoid further carbon entanglement.	Diversify the economy, and encourage the establishment of more environmentally friendly industry. Avoid maintaining dependence on fossil fuels.
End fossil fuel production subsidies that distort energy prices (i.e., fully internalize current externalities in the price of carbon energy), and, thereby, improve the cost-effectiveness of alternative fuels. Leapfrog carbon lock-in.		Healy and Barry 2017
Do not overlook or take lightly potential negative impacts. Although winners are likely to far outnumber losers, some workers will be hurt in the restructuring towards sustainability. Workers, enterprises, contractors (which are mainly small- to medium-sized enterprises), and communities that heavily depend on mining, fossil fuels and energy-intensive industries face a substantial challenge. The impacts of diversifying economies will emerge throughout the supply chain of these industries. Public policy, therefore, should seek to minimize disparities among putative winners and losers in the transition to a low-carbon economy, and to minimize job losses and other socially and economically disruptive impacts.		UNFCCC 2016
Support affected regions.	Pursue regional economic diversification strategies that emphasize re-employability of workers.	Harrahill and Douglas 2019
	Boost government and business investment in economic, social, cultural, environmental, and civic public goods and services in affected regions. Aim to facilitate new linkages (e.g. via transport and telecommunications infrastructure), revitalize public spaces, and attract and support alternative industries and new residents. Support long-term regional and national growth and prosperity.	Green and Gambhir 2019
	Generate economic vitality and stability.	Wei 2018
	Implement measures to foster sustainable and healthy communities.	Task Force on Just Transition for Canadian Coal Power Workers and Communities 2018
	Recognize that the development of fair economic, trade, health and safety and environmental policies must include both the frontline workers and fence-line communities most affected by pollution, ecological damage and economic restructuring.	Just Transition Alliance 2018
	Recognize that investing in community renewal is critical to gain the trust of and foster hope in affected regions, whether dealing with energy transition, industrial transformation, climate impacts, or disaster recovery.	Just Transition Centre 2017
	Invest in community renewal to gain the trust of and foster hope in regions and townships at the forefront of the energy transition, industrial transformation or climate impacts.	ITUC 2017
	Maximize opportunities for economic prosperity. Undertake efforts to diversify affected local, regional and national economies.	UNFCCC 2016

Create decent jobs and provide support to workers.	Offer retraining, which is vital for workers to gain necessary skills to work outside of “dirty” industries.	Harrahill and Douglas 2019
	Focus on vulnerable workers.	Green and Gambhir 2019
	Provide skills development and retraining for affected workers to facilitate labour market adjustment and more comprehensive adaptation, with an emphasis on on-the-job retraining.	
	Promote professional training and retraining for the development of skills for thorough economic restructuring, and to increase resilience to a changing climate. Strengthen social protection systems and public investment in health and education, especially in the most impoverished countries and those that have lower institutional capacities.	Ferrer Márquez et al. 2019
	Ensure and support adequate and sustainable social protection for job losses and displacement. As part of just transition plans and their implementation, prioritize retraining and redeployment of workers, and ensure and support skills development, particularly for vulnerable workers. Choose emissions reductions plans that also promote sustainable development. Pursue measures that drive environmental sustainability, job creation, decent work, social inclusion, and poverty eradication.	Just Transition Centre and B Team 2018
	Commit to jobs that are green and decent. Procure renewable energy in accordance with human rights and labour standards. Establish social-protection systems that include policies and programmes to reduce poverty, deprivation and vulnerability by helping people manage various risks.	Wei 2018
	Ensure health and safety in the workplace. Provide social protections for those who lose jobs or pensions.	Worral et al. 2018
	Support transitioning to good jobs.	Task Force on Just Transition for Canadian Coal Power Workers and Communities 2018
	Create decent and quality jobs.	Silesia Declaration 2018
	Ensure that government policies enable workers and their communities to have the skills capabilities and investments needed to thrive in the face of transformative change. Make use of passive and active labour policies.	International Chamber of Commerce 2018
	Pursue employment that offers fair income and a decent life. Ensure that most newly created jobs are comparable to those that disappear in terms of wages and level of qualifications required.	Mustata 2017
	Generate decent jobs.	Healy and Barry 2017
	Focus on creating opportunities for decent work, and addressing vulnerability. The NDC/LTS-guided energy transition strives to create decent work in sustainable infrastructure development; reflects commitments to support those who are losing jobs; and focuses specifically on those who are most vulnerable to climate risks, and those who may lose their jobs due to energy transition.	Hirsch et al. 2017
	Formalize jobs associated with rescue, restoring communities, and building resilience to climate disasters. Respect the contribution that workers in fossil fuel industries have made to today’s prosperity. Provide them with income support, retraining and redeployment opportunities, and, for older workers, secure pensions.	ITUC 2017; Just Transition Centre 2017
	Invest in decent work opportunities in sectors that reduce emissions, and help communities adapt to climate change	ITUC 2017
	Guarantee essential social protections and human rights. Ensure investment in the jobs vital to both adaptation and mitigation.	Just Transition Centre 2017
Promote the creation of more decent jobs, including, as appropriate, anticipating impacts on employment; adequate and sustainable social protection for job losses and displacement; and skills development and social dialogue, including the effective exercise of the right to organize and bargain collectively.	ILO 2015	
Provide training or re-skilling programmes, and offer adequate interim support, such as relocation aid and social protection measures. Ensure rights and social protection for all. Promote job creation and improved productivity in more labour-intensive industries that offer employment opportunities on a wide scale.	UNFCCC 2016	
Ensure that new jobs created in low carbon sectors provide “decent jobs”.	Newell and Mulvaney 2013	
Address environmental rehabilitation needs.	Ensure that the costs of achieving sustainable development, a healthy economy and clean environment are not borne by current or future victims of environmental and economic injustices and unfair free trade policies. Support the rights of workers and community residents to challenge any entity that commits economic and/or environmental injustices. These entities include governments, the military, corporations, international bodies, and mechanisms for securing corporate accountability.	Just Transition Alliance 2018
	Ensure the remediation of contaminated sites.	Healy and Barry 2017

Address (pre-existing) inequalities, including gender inequalities.	Curb extraction consistent with environmental justice.	Muttitt and Kartha 2020
	Focus on vulnerable workers and consumers.	Green and Gambhir 2019
	Craft emissions reductions plans that also promote sustainable development. Adopt measures that drive environmental sustainability, create decent jobs, and promote social inclusion and poverty eradication.	Just Transition Centre and B Team 2018
	Aim for a transformative transition.	South Africa National Planning Commission 2018
	Maintain solidarity with those disadvantaged.	Snell 2018
	Follow a social-equity principle. Adopt measures in the NDC/LTS-guided energy transition that positively impact social equity, and contribute to improving the socioeconomic integration of vulnerable groups. Employ a gender-equality principle. Undertake a gender impact assessment to avoid negative effects, and to stimulate positive effects on gender equality in the course of the NDC/LTS implementation.	Hirsch et al. 2017
	Incorporate a restorative justice perspective. Assess how to rectify injustices caused by an energy activity or transition.	Healy and Barry 2017
	Pursue social justice. Leave no-one behind.	UNFCCC 2016
	Ensure that policies and programmes consider the strong gender dimension of many environmental challenges and opportunities. Adopt specific gender policies where needed to promote equitable outcomes.	ILO 2015
	Address the potential production of injustice through existing market based efforts to tackle climate change. Consider the impact on resources and livelihoods of many poorer people in the Global South. Address energy injustice in the global fossil fuel economy.	Newell and Mulvaney 2013

Theme	Principles (Process)	Reference
Social Dialogue	Ensure that workers or workers' representatives are participants in social dialogue in ways that give them the ability to influence the process.	Harrahill and Douglas 2019
	Promote social dialogue, collective bargaining, social participation, and the search for concerted solutions in governance processes.	Ferrer Márquez et al. 2019
	Recognize that interventions must be participatory and achieved through social dialogue. Understand that change must be participatory and achieved through social dialogue.	Jenkins 2019
	Ensure transparent communications, consultation and co-design processes, including collaboration between governments, businesses, labour unions, consumer groups, and other affected stakeholders, to ensure inclusion, input and buy-in from the most affected groups.	Green and Gambhir 2019
	Respect workers, unions, communities and families. Involve workers at every stage of transition.	Task Force on Just Transition for Canadian Coal Power Workers and Communities 2018
	Ensure that disempowered groups are represented in social dialogues on the just transition, and that they have a fair and equal voice in planning and policymaking.	Worrall et al. 2018
	Promote a participatory and representative process of social dialogue involving all social partners.	Silesia Declaration 2018
	Ensure that unions play an active part in processes. Undertake strategic and social dialogue. Foster collaboration among unions, governments, employers, and community organizations.	Snell 2018
	Ensure the effective participation of social partners.	South Africa National Planning Commission 2018
	Ensure social dialogue between workers via their unions and companies, and consultation with key stakeholders.	Just Transition Centre and B Team 2018
	Include business – a key stakeholder and agent for the delivery of a just transition – in climate policy planning at all levels.	International Chamber of Commerce 2018
	Commit to social dialogue with workers and their representatives.	Wei 2018
	Ensure the involvement of workers and communities in the sectoral plans for transforming megacities Make decisions based on social dialogue with all relevant parties. Include collective bargaining with workers and their unions for workplace change, resource productivity, and skills development.	ITUC 2017
	Involve workers in the sectoral plans for the development of clean megacities. Establish processes that incorporate social dialogue with all relevant parties, collective bargaining with workers and their unions, and the monitoring of agreements that are public and legally enforceable.	Just Transition Centre 2017
	Follow a due-participation principle. Ensure multi-stakeholder participation in accordance with international good practice standards throughout the NDC/LTS process from planning to implementation and evaluation. The transition process should include a dialogue on justice issues.	Hirsch et al. 2017
Recognize that strong social consensus on sustainability goals and pathways is fundamental. Recognize that social dialogue is an integral part of the institutional framework for policy making and implementation at all levels. Ensure that adequate, informed and ongoing consultation takes place with all relevant stakeholders.	ILO 2015	
Transparency and accountability	Ensure transparency and accountability.	South Africa National Planning Commission 2018
	Make decisions based on social dialogue with all relevant parties, collective bargaining with workers and their unions, and the monitoring of agreements that are public and legally enforceable.	Just Transition Centre 2017
	Follow good governance principles. The NDC/LTS implementation process should be characterized by transparency and accountability, including an adequate cost-benefit analysis of energy transition measures.	Hirsch et al. 2017

Human and workers' rights	Consistently position just transition with principles of human rights, gender responsiveness and indigenous rights, as enshrined in the preamble of the Paris Agreement.	Jenkins 2019
	Respect international human rights and norms. Adhere to global labour standards, which are central to the just transition.	Wei 2018
	Respect, protect and promote human and gender rights, particularly work-related rights, which are the foundation for social dialogue.	Just Transition Centre and B Team 2018
	Recognize that workers, community residents, and indigenous peoples around the world have a fundamental human right to clean air, water, land, and food in their workplaces, homes and environment.	Just Transition Alliance 2018
	Guarantee essential social protection and human rights.	Just Transition Centre 2017
	Employ a "respect for human rights" principle. The energy transition and NDC/LTS implementation should respect human rights, including the fulfilment of human rights obligations deriving from international human rights treaties that the country has ratified. Employ a "do not harm" principle. Undertake a human rights impact assessment as part of the NDC/ LTS implementation process.	Hirsch et al. 2017
	Guarantee social protection and human rights.	ITUC 2017
	Respect rights, and offer social protection for all.	UNFCCC 2016
	Adhere to policies that respect, promote and realize fundamental principles and rights at work.	ILO 2015
International cooperation	Share transition costs fairly. Wealthier countries need to provide assistance to poor countries to support their climate mitigation and adaptation efforts. Reduce extraction fastest where social costs of transition are lowest. Enable international sharing of efforts to reduce extraction policy arrangements parallel to those existing under the UNFCCC.	Muttitt and Kartha 2020
	Liberalize environmental, health and labour laws. Corporate globalization knows no borders; therefore, solutions call for local, regional, national, and global solidarity.	Just Transition Alliance 2018
	Promote and foster global human solidarity	South Africa National Planning Commission 2018
	Support innovation and technology sharing to enable a rapid transformation of energy and manufacturing companies along with all other economic sectors.	ITUC 2017
	Foster international cooperation among countries.	ILO 2015
Context-specific approach	A just transition must be sensitive to cultural context.	Jenkins 2019
	Take a regional approach.	South Africa National Planning Commission 2018
	Ensure policies work together. Measures should be nationally coherent, regionally driven, and locally delivered.	Task Force on Just Transition for Canadian Coal Power Workers and Communities 2018
	Avoid a "one size fits all" approach.	International Chamber of Commerce 2018
	Tailor policymaking to local contexts.	Healy and Barry 2017
	Design transitions locally.	Mustata 2017
Recognize that there is no "one size fits all" approach.	ILO 2015	

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