ICAT Initiative for Climate Action Transparency

Just Transitions Monitoring Guide

WORLD RESOURCES INSTITUTE

Contributors and Acknowledgments

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Foreword

Transitioning to a low-carbon, resilient economy is critical to addressing the climate crisis—but it is far easier said than done. People and communities around the world are already raising concerns about the transition, from auto workers impacted by the shift to electric vehicles to farmers protesting measures that raise agricultural fuel costs amid falling crop prices. To succeed, the transition must go beyond just cutting greenhouse gas emissions and building resilience. It must be just, inclusive and designed to improve lives, ensuring this economic transformation benefits both people and the planet.

To garner widespread support for climate policies and pre-empt a potential backlash, countries and regions must embark on a just transition. For governments, this means integrating people, nature and climate goals into core economic planning and policymaking. Creating transparent processes to assess risks and consult with affected communities is essential to this effort.

Throughout the process of implementation, governments have a responsibility to transparently assess whether they are actually delivering greener, more resilient and equitable growth. Regularly monitoring the changes in quality green economy jobs, gender equity and other indicators can reassure communities and impacted stakeholders that governments are addressing their concerns and genuinely care that people benefit from the transition. This, in turn, can build more comprehensive support for pro-climate policies. By emphasizing tangible outcomes rather than intentions, monitoring efforts can help align financial systems with priority economic, social and environmental objectives, ensuring the benefits of the transition are effectively delivered.

The *ICAT Just Transitions Monitoring Guide* is a first-of-its-kind publication providing comprehensive information on monitoring the justice-related aspects of low-carbon, resilient transitions. It draws on prior experiences, in-country applications and literature to support governments in developing goals and priorities; selecting indicators and establishing targets; and effectively collecting, analyzing and communicating data to diverse audiences. Monitoring is a process. Countries can start small, beginning with a few indicators and utilizing existing data, and expand on them over time, sharing lessons with domestic and international stakeholders along the way. Many countries already possess a wealth of experience in monitoring indicators, often linked to the United Nations Sustainable Development Goals and development and environmental policies. They can build on these valuable existing processes and knowledge to comprehensively track changes in the context of climate action. We trust that this guide will help governments bolster or even kick off their transition monitoring.

Policy makers face a dilemma: they must grow the economy and create jobs while ushering in a just transition that garners sufficient public support. To navigate this challenge, governments need to monitor which strategies work and which fall short, recalibrating their approach accordingly.

Countries and regions must take the lead in driving economic transitions that prioritize people, nature and climate. Ultimately, all decisions and actions are implemented locally, requiring each community to build its own unique path to a safe and prosperous future. However, collaboration and transparency is critical in accelerating just transitions. The vision for a low-carbon, resilient world where everyone has the opportunity to thrive can only be realized by engaging all stakeholders and creating spaces to share experiences and learnings.

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Table of Contents

Executive summary 1

1. Introduction 9

2. Just transitions and monitoring framework

Defining a "just transition" 16

Monitoring framework to track just transitions 18

3. Develop the goals or priorities of a just transition

What constitutes a goal or priority for a just transition? 21

Key steps to develop goals or priorities for just transitions 23

4. Formulate targets and indicators

Develop targets for goals or priorities 32

Develop monitoring indicators 34

5. Establish data coordination and collection processes

Elements of a just transition data management framework 40

Appoint a data coordinating body 41

Organize a data collection process 43

Conduct data collection 46

6. Analyse data

Assess trends and analyse changes 50

7. Communicate and report results

Communicating results 56

Appendices

Appendix A: Definitions of "just transition" 62

Appendix B: Data template 65

Appendix C: Case studies 66

Abbreviations 70

Glossary 71

References 73

American Public Power Association/Unsplash

Executive summary

Executive summary

Executive Summary

CONTEXT

Climate policies may contribute to positive or negative, intended or unintended impacts across social, economic and environmental dimensions. These may further exacerbate (or reduce) existing social and economic inequities. As countries transition to a low-carbon, climate-resilient economy and pursue development pathways aligned with the 1.5°C Paris Agreement goal, the United Nations Framework Convention on Climate Change emphasizes that this transition be implemented in a manner that is just and inclusive while minimizing negative or social impacts (UNFCCC, 2023). A just transition towards net zero emissions, as agreed to in the Glasgow Climate Pact, can correct for and avoid perpetuating social, economic and environmental inequalities (Hickel and Slamersak, 2022; UNFCCC, 2015, 2022d). When shifting away from conventional and unsustainable production models, social and economic policies can provide support to communities, workers, vulnerable groups and businesses impacted by the transition.

ABOUT THE GUIDE

This publication provides guidance to monitor and analyse social, economic and environmental changes that may occur as countries implement policies to transition to a low-carbon, climate-resilient economy. It employs the lens of justice—distributive, procedural and restorative—to understand the changes for different groups. Identifying and tracking justice-related indicators can provide data and evidence to design policies that support positive outcomes for all affected stakeholders, minimize unintended and non-desirable changes, enhance transparency and accountability, build trust among stakeholders and facilitate access to finance. Without monitoring these indicators, decarbonization pathways can risk unintentionally causing harm to communities, perpetuating inequalities and triggering political resistance (Robins and Rydge, 2019).

Box ES.1 | **Highlights**

- It is important to ensure a just transition towards a low-carbon, climate-resilient economy; support for this transition can be strengthened by establishing a credible monitoring framework to track how it is being implemented.
- This guide provides high-level considerations for developing a framework to monitor social, economic and environmental indicators that reflect the state of the transition at the national, subnational and local level.
- A justice lens to monitor social, economic and environmental changes over time can help ensure no one is left behind during a transition.
- Just transition–related indicators help examine social, economic and environmental changes among distinct groups of people (distributive justice); how inclusive the transition is (procedural justice); and efforts to address past inequities (restorative justice).
- This guide identifies steps countries can take to better understand and monitor their progress towards achieving a just transition by identifying targets and indicators; collecting and analysing data to gather insights; and communicating results to provide evidence, inform policies and facilitate a just transition.

This guide provides a step-by-step approach to support the development of a monitoring framework that will enable governments to track the status of a just transition. Tracking key social, economic and environmental indicators shows changes over time and helps assess progress towards just transition targets. Similar to a national greenhouse gas inventory, a transition monitoring framework is a useful tool for monitoring changes in relevant indicators, but it alone cannot explain what is causing the changes. This guide does not provide a policy assessment tool meant to attribute impacts to specific policies; rather, it offers a methodology for monitoring the state of a transition to inform policy and practice. Monitoring may help identify where greater policy attention is needed when progress is off track, but it does not identify how specific policies affect people. The changes being observed may be due to a wide range of factors, including the implementation of policies as well as exogenous factors. This guide can be applied at different scales (e.g., national, subnational and regional across multiple states or countries) and for tracking different kinds of social, economic and environmental changes. Although the guide draws mostly from social, economic and environmental changes accompanying climate mitigation actions, it can also be applied to monitor similar changes accompanying adaptation and resilience policies. The guide has been developed through a combination of desktop research, interviews and consultations and exchanges and lessons from parallel national-level efforts to develop transition monitoring frameworks in Nigeria and South Africa (the authors served as technical reviewers for the Nigeria and South Africa projects).

This guide was designed for government agencies and ministries, such as those responsible for development, climate planning, data management and finance—including national, subnational, regional or local jurisdictions. The recommendations and considerations could also be used by non-governmental organizations, community service organizations and financial institutions to support government-led tracking efforts or better engage with the transition monitoring process.

UNDERSTANDING JUST TRANSITIONS

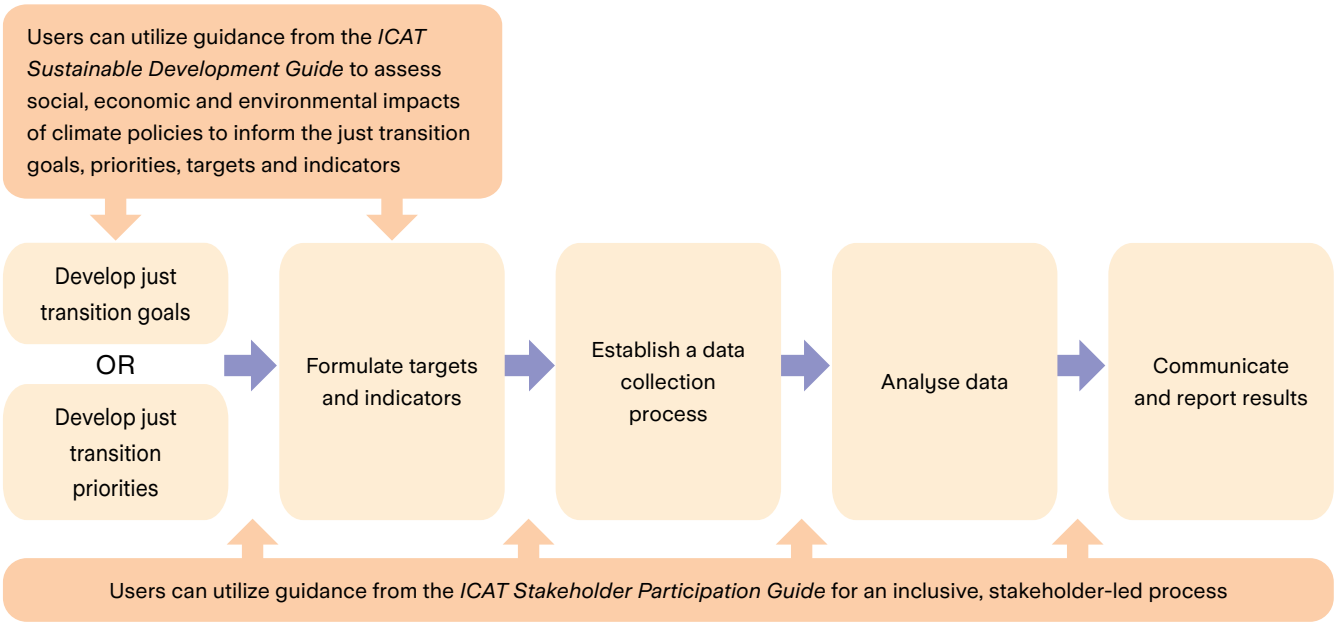
The guide provides a conceptual background to just transitions and different types of justice and introduces the monitoring framework as a method to track transitions. Although multiple definitions for “just transition” exist (Climate Justice Alliance, n.d.; Denton et al., 2022; Galanis et al., 2025; IEA, n.d.b; ILO, 2021; Just Transition Alliance, n.d.; UNFCCC, 2023), for the purposes of this guide, the term refers to addressing climate change in a fair, just and inclusive manner; creating decent work opportunities for all; leaving no one behind; and managing challenges in the process through participatory approaches and social dialogue (ILO, 2015; UNFCCC, 2023).

FIVE KEY STEPS FOR MONITORING TRANSITIONS

Monitoring just transitions entails using the lens of justice to track the social, economic and environmental changes facing communities, workers, vulnerable populations, businesses and other groups. This guide outlines the following steps for monitoring (Figure ES-1):

1. Develop just transition–related goals or priorities.
2. Formulate targets and key social, economic and environmental indicators.
3. Establish a data collection process.
4. Analyse data to understand trends.
5. Communicate information to reflect changes and inform policies and decisions.

Figure ES-1 | **Key monitoring steps for a just transition**



Source: Adapted from Kusek and Rist (2004).
Abbreviation: ICAT, Initiative for Climate Action Transparency.

Users should approach transition monitoring as a process that can evolve and become more comprehensive over time. For example, targets may be set after baseline data have been collected, more indicators may be added and new and improved data collection methods may be adopted as they become available.

DEVELOP GOALS OR PRIORITIES

Users should establish just transition goals or priorities in close collaboration with stakeholders.

Establish goals: Goals represent high-level statements of change, including equitable sharing of opportunities created during the transition as well as minimizing undesirable change across social, economic and environmental dimensions. Goals articulate the long-term, justice-oriented and inclusive change that should meet the needs of all stakeholders during the transition to a low-carbon, climate-resilient economy. By setting goals, users can define or conceptualize the just transition collaboratively with key stakeholders through an inclusive process. This includes finding out how various groups may experience the transition, how risks and opportunities may be distributed across society and how stakeholder groups perceive and apply the concept of justice in their context. The goals may address potential trade-offs and/or recognize and amplify any opportunities that should be distributed fairly.

When developing goals, users should develop process- and outcome-oriented goals. Examples of process goals include instituting transparent processes to allocate resources for just transition programmes and initiatives and conducting gender-inclusive stakeholder dialogues. Outcome goals could include improving access to zero-carbon mobility in historically underserved communities and supporting micro, small and medium-sized enterprises (MSMEs) in transitioning from fossil fuel industries to low-carbon sectors. Broadly speaking, process-oriented goals may be useful for addressing procedural justice, whereas outcome-oriented goals may lend themselves better to distributive and restorative justice.

Establish priorities: Priorities represent areas of key impacts during the transition to a low-carbon, climate-resilient economy. The guide recommends that users develop the priority areas based on an understanding of the social, economic and environmental impacts of transition policies.

However, not all impacts may be considered "priorities". Those with a higher likelihood of affecting communities or those that have a significant magnitude should be identified as priorities. Impacts can be identified through impact assessment studies and in collaboration with stakeholders. The ICAT Sustainable Development Methodology provides a methodology for assessing sustainable development impacts (ICAT, 2020b). Since priorities are related to impacts, they may not lend themselves to an outcome or process type of framing noted above for goals.

Where appropriate, new just transition goals or priorities should align with any existing objectives (e.g., in nationally determined contributions or sectoral policies). Whether users develop goals or priorities may depend on the national context as well as stakeholder expectations. Goals and priorities exist on a continuum, and users identifying priorities can choose to advance along this progression to define goals over time. The subsequent steps are similar for developing goals and priorities unless otherwise noted.

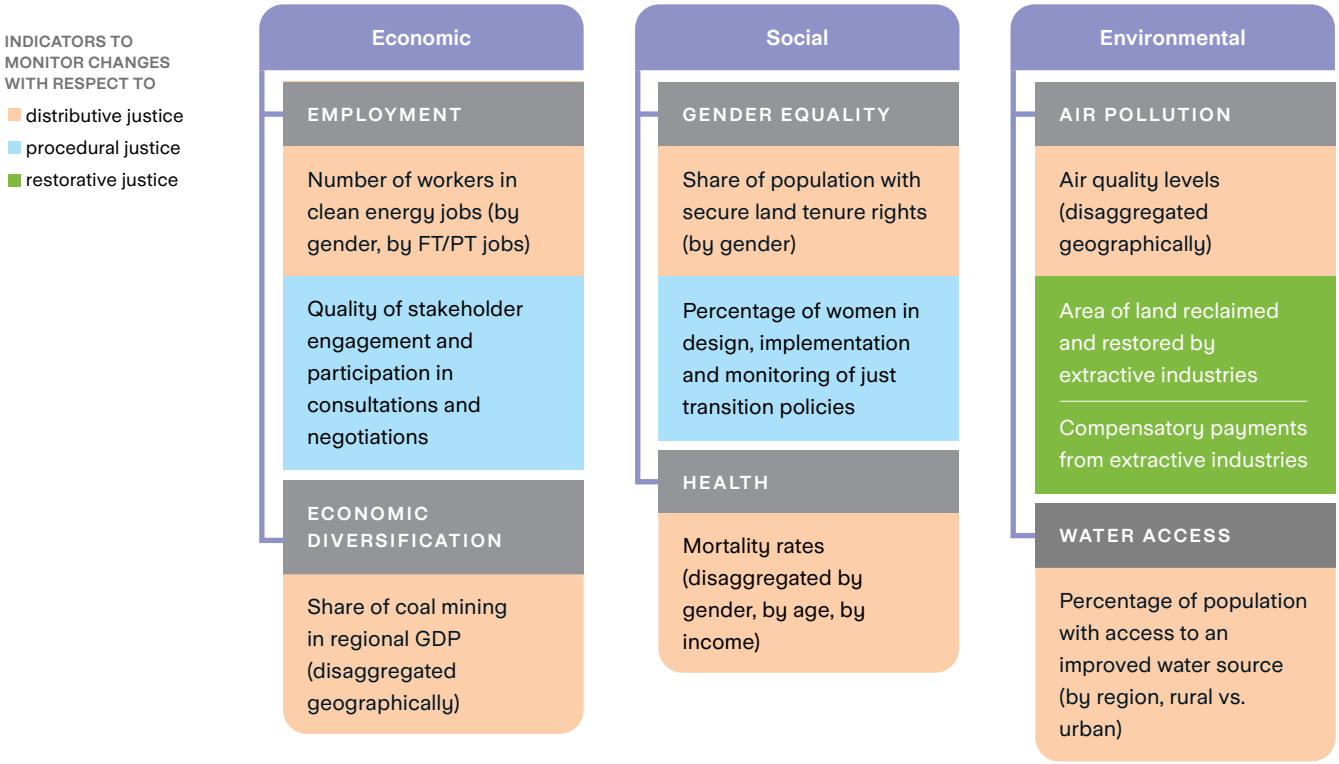
FORMULATE TARGETS AND INDICATORS

Users should set targets for goals or priorities and identify associated indicators to monitor progress (Figure ES-2). If data are not available or there are resource constraints, users can choose to first develop indicators and then establish targets. In collaboration with stakeholders, users should establish specific, measurable and time-bound targets, such as a 50 per cent increase in the number of MSMEs that provide renewable energy services over the next 10 years. Targets provide a benchmark to track movement in the desired direction.

Figure ES-2 | **Steps to define targets and indicators**

Users should seek to identify existing—and, when necessary, new—indicators that capture social, economic and environmental changes with respect to distributive, procedural and restorative justice (Figure ES-3). To monitor transitions, users should include indicators that reflect both outcome and process aspects of a just transition. Some examples include the total percentage of full-time jobs created in new sustainable industries as a proportion of total jobs, land area reforested/remediated in coal mining areas, investment in economic diversification programmes in fossil fuel–dependent regions, public-private partnerships agreed upon to promote good-quality jobs (e.g., union jobs with health benefits) in sustainable industry and the number of support measures in place for training opportunities for up- and reskilling fossil fuel workers. Indicators should be clearly defined, relevant to the target audience and decision makers, feasible to measure and distinct.

Figure ES-3 | **Illustrative examples of just transition indicators**



Source: Adapted from ICAT (2020b).
Abbreviations: FT/PT, full-time/part-time; GDP, gross domestic product.
Note: The figure includes only a few examples of areas of interest and associated indicators for illustration. It is not meant to provide a comprehensive picture of all areas of interest and indicators.

ESTABLISH A DATA COLLECTION PROCESS

The guide recommends having a data management and monitoring process for just transition indicators to streamline data collection, analysis and communication of information. As much as possible, users should build on existing monitoring processes (Figure ES-4). It is crucial to identify a central coordinating body (such as a national statistical office) that can facilitate the execution of a wide variety of functions needed for data collection (Figure ES-5). These functions can include identifying data sources for existing and new social, economic and environmental indicators; allocating resources; establishing data-sharing arrangements; and regularly collecting data at the required level of disaggregation.

Figure ES-4 | **Steps for data coordination and collection**

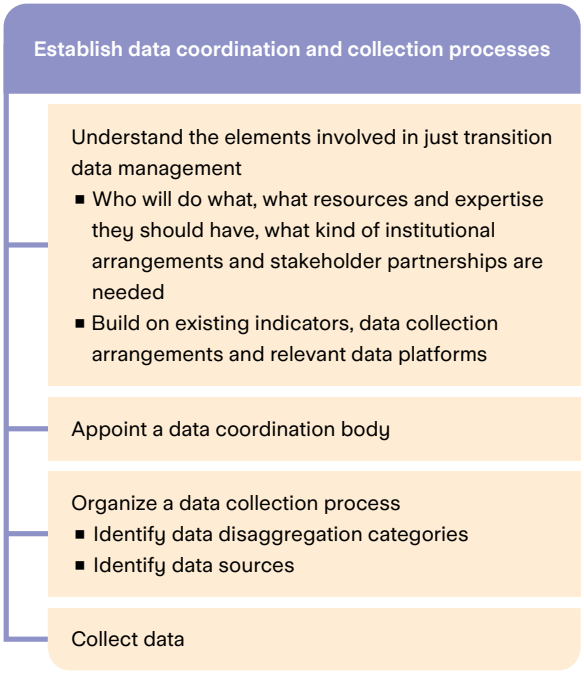
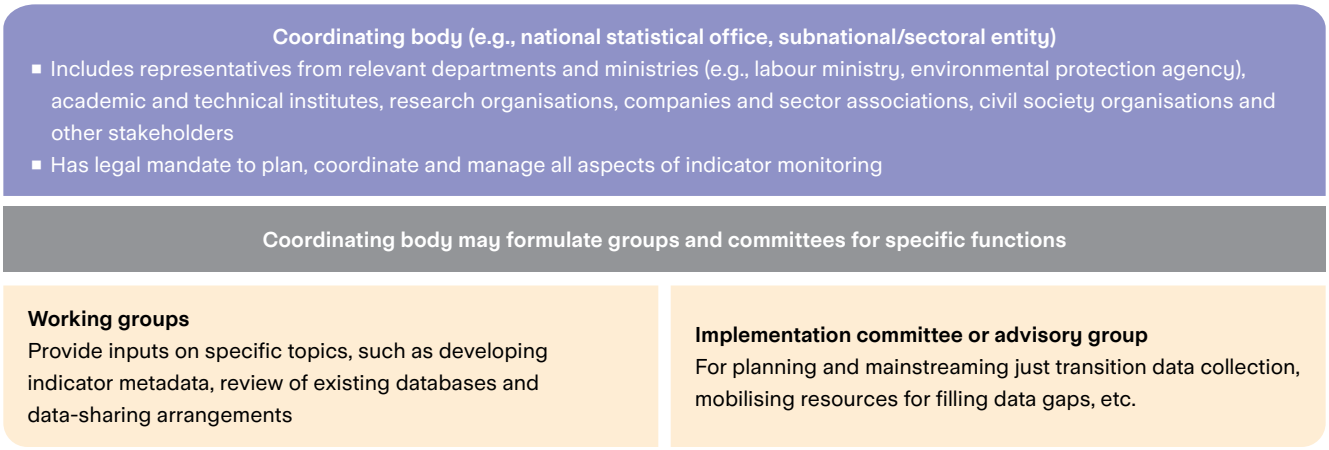


Figure ES-5 | **Coordinating body for monitoring just transition**

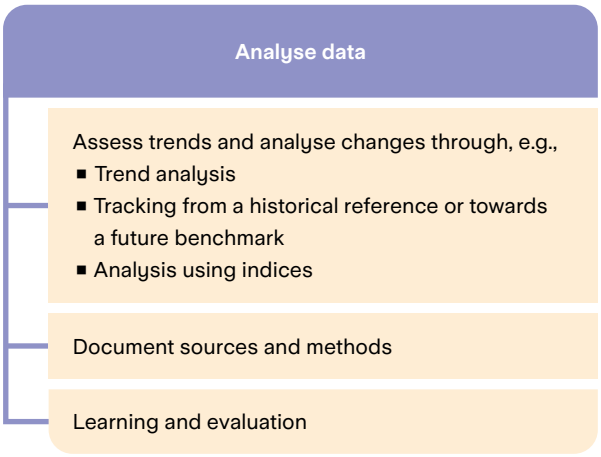


Source: Adapted from Min (2024).

ANALYSE DATA

Users should determine the method to analyse the collected data and apply consistent assumptions (Figure ES-6). Indicator data can be used to track progress against historical data or towards targets. Although trend analysis shows how indicators are changing over time, when combined with a target, the data can also help assess progress towards achieving the target. Time series data for various indicators can enable more complex analysis. Similarly, indices, which represent a compilation of indicators, can communicate interconnected results in a more accessible manner for stakeholders compared to individual indicators. Indicator analyses can inform recommendations for adjusting existing climate policies being monitored or developing new interventions (e.g., related to reskilling programmes, energy access, improving procedural aspects, etc.). Data analysis also can help identify funding and resource needs for alleviating observed negative changes and recommendations regarding where funds should be allocated to maximize benefits.

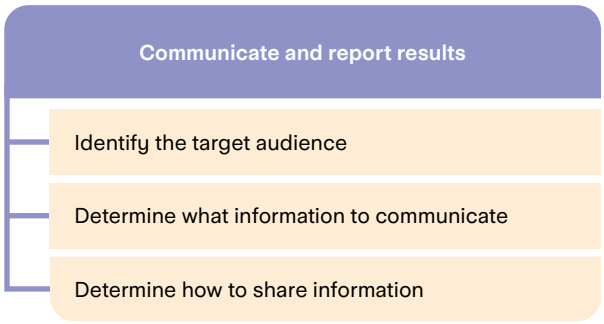
Figure ES-6 | **Steps to analyse data**



COMMUNICATE AND REPORT RESULTS

The final step is to communicate and report the monitoring results to stakeholders and policymakers (Figure ES-7). Reports summarizing data analysis results should be tailored to target audiences, which can be domestic or international as well as government agencies or other stakeholders. Users should include sufficient, relevant information to facilitate their transition monitoring. Public-facing national reports may also identify opportunities for improvement and provide information to adjust strategies to better achieve long-term goals and/or priority areas. At the international level, information on just transition indicators could be incorporated into reporting frameworks, such as the enhanced transparency framework and biennial transparency reports of the Paris Agreement (UNFCCC, 2017, 2022c).

Figure ES-7 | **Steps to communicate and report results**



Axel Fassion / CIFOR

1. Introduction

1. Introduction

As more governments transition their economies away from conventional, unsustainable development models, calls to establish a "just" and "equitable" transition towards a low-carbon, climate-resilient society continue to grow. Efforts to tackle climate change need to go beyond climate mitigation and adaptation policy alone. They should be coupled with broader social and economic policies that strengthen resilience and support historically marginalized communities, workers, businesses and those most likely to be affected during the transition-related policies. To achieve this, it is imperative that the transition be managed justly, with lives and livelihoods at the centre of planning.

In this guide, "just transition" is broadly understood as transitioning to a more sustainable economy in a fair, just and inclusive manner; creating decent work opportunities for all; leaving no one behind; and managing challenges in the process through participatory approaches and social dialogue (ILO, 2015; UNFCCC, 2023). Just transition monitoring entails using the lens of justice to track the social, economic and environmental changes facing communities, workers, vulnerable populations, businesses and other groups. Since transitioning towards a low-carbon economy will impact people, the economy and the environment, it is crucial to monitor related changes along with changes in greenhouse gas emissions.

1.1 Purpose and scope

The Initiative for Climate Action Transparency (ICAT) *Just Transitions Monitoring Guide* provides users (primarily national or subnational governments) with an approach to monitor and learn from the social, economic and environmental changes accompanying climate mitigation actions and strive for a just transition that does not leave anyone behind. This guide does not specifically address adaptation and resilience policies, but the steps discussed here could apply to either mitigation or adaptation policies. The guide is intended to help manage and minimize negative social, economic and environmental impacts on communities, workers, businesses and vulnerable populations that may occur in the wake of climate mitigation policies. It considers these changes through the lens of distributive, procedural and restorative justice (defined in Chapter 2).

Information from monitoring outcomes can be used to inform new policies and actions as well as adjust existing ones and help mitigate negative impacts. This guide provides an overview of the main elements involved in developing a just transition monitoring framework. Although the guide discusses key steps in designing such a framework, it does not focus on how to fully operationalize such a system in a jurisdiction. Operational decisions would entail discussing which financial resources may be needed and how to mobilize them; what kind of organizational and governance structure suits the situation; what types of institutional arrangements are already in place or may need to be put in place; what types of human resources, technical expertise and qualifications are needed to support it; and what roles and responsibilities are associated with such a system. These details are highly context specific and are not the subject of this guide.

1.2 Why track a transition?

Monitoring helps measure whether desired change is occurring and determines the gap that remains to reach established goals and priorities. It can be used to demonstrate how just the transition is by tracking indicators related to the creation of decent jobs, economic diversification and more. It can inform and modify transition policies to be more just, enhance accountability, build stakeholder trust through greater transparency and facilitate access to finance. These benefits are discussed in detail below.


Erik Wilde

1.2.1 INFORMING JUST TRANSITION AND DEVELOPMENT POLICIES

Monitoring indicators can inform decision-making, enhance policy coherence and contribute to the design of future policies. Gathering data on relevant indicators can help establish credible baselines, capture trends and provide insights on the direction of change across selected areas of interest. Just transition considerations are becoming more prevalent within international and national climate policy as well as in nationally determined contributions (NDCs) and long-term low-emission development strategies (LT-LEDS) (Fransen et al., 2022; Fransen, Ross and Srouji, 2022; Lee and Baumgartner, 2022). Consistently monitoring changes in social, economic and environmental indicators can facilitate policy modifications. For instance, by tracking economic diversification indicators, policymakers can better understand how coal-dependent regions are responding to fossil fuel phase-outs and economic revival policies; this information also can identify policy changes that may be needed. Sharing information on social and economic indicators can further illustrate the progress occurring towards environmentally sustainable and inclusive economies. Without such understanding, policy responses could be insufficient at best and harmful at worst (Imran, 2020).

1.2.2 ENHANCING TRANSPARENCY, ACCOUNTABILITY AND SOCIAL SUPPORT

Regular monitoring and reporting can demonstrate accountability by transparently providing information on how the just transition is faring and enhance stakeholder confidence in the process (Gugerty, Karlan and Welsh, 2016). Access to data and information helps stakeholders meaningfully engage with policymakers and hold them responsible for stated just transition goals (Alcobé et al., 2023). Transparency and accountability can thus help build trust between the government and stakeholders and strengthen social support and acceptance of transformative policies (Piggot et al., 2019). For instance, tracking and reporting indicators—such as the number of jobs created, individuals availing early retirement funds or workers acquiring new skills—can be of interest to unions seeking to protect their workers. Alternatively, monitoring and reporting can show where progress is lacking, bring more transparency to implementation and enable stakeholders to meaningfully engage on these issues. Stakeholder engagement throughout the process of developing the monitoring framework itself, such as in formulating goals and identifying indicators, can promote a sense of joint ownership of the framework.

1.2.3 ACCESSING FINANCE

By tracking just transition–related indicators, governments can monitor and document their progress towards outcomes. These outcomes may have been agreed upon as part of funding from domestic or international sources, such as South Africa's plan and Indonesia's Just Energy Transition Partnership (JETP) (JETP Indonesia, 2023; Republic of South Africa, 2022). Tracking can also demonstrate to potential investors and partners a readiness and commitment to an inclusive, equitable transition. As governments and funders mobilize financial support explicitly for just transition efforts through partnerships such as JETPs and other resources, access to data can improve their understanding of changing social and economic conditions; in turn, they can better direct funding to identified areas of need. Alternatively, this could be used to channel finance towards positive trends (Shakya and Smith, 2021). By monitoring performance through indicators and disclosing information on just transition outcomes, countries can improve the chances of securing additional finance (Alcobé et al., 2023). Some financial institutions also may encourage these

steps to guide their support for a just transition; for instance, multilateral development banks encourage monitoring processes in their "Just Transition High-Level Principles" (AfDB et al., 2021).

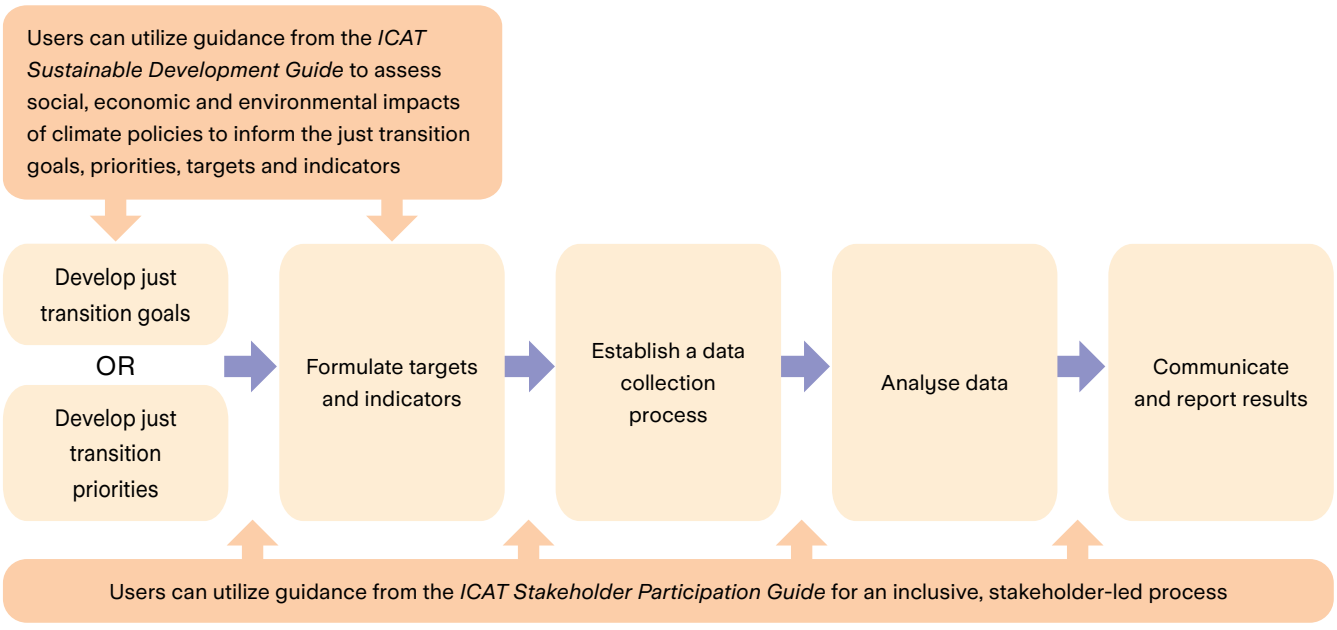
1.3 Relationship to other guides

The *Just Transitions Monitoring Guide* can be used in combination with any ICAT policy assessment guide, such as the ICAT (2020b) *Sustainable Development Methodology* and/or the Greenhouse Gas Protocol (2014) *Policy and Action Standard*. The *Policy and Action Standard* and the series of ICAT policy assessment guides for various sectors (agriculture, renewable energy, transport, forestry and buildings) describe methodologies for assessing the greenhouse gas impacts of policies. The *Sustainable Development Methodology* extends these to assessing policies' sustainable development impacts (i.e., non-greenhouse impacts) (ICAT, 2020b).

The policy assessment guides, including the *Sustainable Development Methodology*, support users in attributing greenhouse gas and sustainable development impacts to specific policies. In contrast, the *Just Transitions Monitoring Guide* does not provide a methodology for establishing a cause-and-effect relationship between individual policies and specific impacts. It focuses on tracking indicator changes over time and/or relative to their baseline/target/historical values and observing trends over a given period.

Users interested in attributing just transition–related effects to specific policies can do so by using a combination of ICAT guides—the *Just Transitions Monitoring Guide*, which has information on justice-related indicators, with the *Sustainable Development Methodology*, which supports cause-and-effect analysis. The ICAT series of policy assessment guides can also inform the development of just transition goals and/or priorities (which is the first step in the *Just Transitions Monitoring Guide*) by identifying the social, economic and environmental impacts of policies (Figure 1.1).

Figure 1.1 | **Using the *Just Transitions Monitoring Guide* with other ICAT guides**



Source: Adapted from Kusek and Rist (2004).
Abbreviation: ICAT, Initiative for Climate Action Transparency.

Further, users can consult the ICAT *Stakeholder Participation Guide* to facilitate stakeholder engagement and ensure that stakeholders are central to every step in the transition monitoring process (ICAT, 2020a). The *Just Transitions Monitoring Guide* can also be used together with the ICAT *Transformational Change Methodology* to monitor the just transition–related impacts of potentially transformational policies (ICAT, 2020c).

1.4 Intended users

Although monitoring is needed at multiple levels—national, subnational, companies—the recommendations and considerations discussed here are primarily for national policymakers and analysts, whether they are focused on economy-wide or sector-specific transition policies and actions. However, this guide could be applicable to other jurisdictions (e.g., regional or state level) to support an inclusive just transition towards their stated goals. It is intended for a variety of contexts, including developing and industrialized countries, those with defined just transition plans and those without. Likewise, donor organizations and financial institutions can use the guide to enrich their understanding of how monitoring can support just transitions and how they can allocate resources towards tracking initiatives within countries. Other stakeholders, such as research organizations, think tanks, academic institutions, trade unions and civil society organizations (CSOs), can use this guide to provide support to national and subnational policymakers and hold them accountable.

1.5 How to use this guide

The guide is designed to apply to a wide variety of contexts and be accessible to all stakeholders, wherever they are on their journey towards a just transition. It lists five key steps to developing a monitoring framework and emphasizes stakeholder engagement throughout each of these steps. Chapter 2 introduces the concept of a just transition and a monitoring framework. Chapters 3–7 discuss the individual steps to monitoring transitions.

Users who have already developed just transition goals or priorities—whether stand-alone or integrated in various policies—and do not wish to modify them further can choose to skip Chapter 3. Users who are either in the process of articulating their goals or priorities or would like to strengthen them—or do not have any goals or priorities yet—should follow all the steps, including developing goals or priorities in Chapter 3. Chapters 4–7 are relevant for all users of the guide.

1.5.1 KEY RECOMMENDATIONS

Chapters 3–7 begin with a list of recommended monitoring steps. Key recommendations pertain to considerations and steps to follow during each stage of establishing a monitoring framework. These are intended to help users comprehensively track their transition.

1.6 How this guide was developed

The guide was developed through a combination of desktop research, interviews and consultations and exchanges and lessons from parallel national-level efforts to develop just transition monitoring frameworks in Nigeria and South Africa. Research began by reviewing reports from research organizations, community organizations and governments as well as peer-reviewed publications to understand the concept of a just transition and how, as economies transition, monitoring can help highlight progress. Research was organized across four distinct areas: a landscape analysis of "just transition" definitions and contextual applications, approaches to monitoring mitigation-related changes that look beyond greenhouse gas indicators, possible just transition indicators in the literature, and just transition thematic areas (e.g., economic diversification, social equity, stakeholder engagement and labour rights). This research provided the foundational background for the guide.

The essential steps for monitoring a just transition were developed by building upon and interpreting existing work on the topic of monitoring and evaluation and adapting it to a just transition context. This included the Greenhouse Gas *Protocol Policy and Action Standard*; the ICAT policy assessment guides, including the *Sustainable Development Methodology*;

documents on measuring, reporting and verifying greenhouse gas mitigation; guidance related to the enhanced transparency framework (ETF) and biennial transparency reports (BTRs); and monitoring and evaluation approaches for environment, health, education, gender and similar topic areas. Insights were distilled to develop an initial methodology for just transition monitoring. This was further revised and strengthened by incorporating elements drawn from countries with just transition policies and those that have started to institute just transition monitoring processes (e.g., New Zealand, Scotland and South Africa).

The authors served as technical reviewers for two ICAT-supported just transition monitoring projects in Nigeria and South Africa. These projects were implemented in parallel to the *Just Transitions Monitoring Guide*'s development and provided practical information to supplement the literature review process. The projects included the development of the Just Transition Monitoring, Evaluation and Learning Framework in South Africa, which was overseen by the Presidential Climate Commission (PCC), and the Just and Gender-Inclusive Transition Monitoring, Reporting and Verification Framework in Nigeria, overseen by the Nigerian Federal Ministry of Labour and Employment (highlights from each project are included in Appendix C). In a two-way process to inform each other's work, the country project teams shared draft reports, made presentations and answered questions about minimizing monitoring burdens, integrating other monitoring processes, identifying a domestic entity to lead the process, ensuring adequate capacity and addressing potential challenges in data collection. Insights from these country projects highlighted the different approaches employed and underlined the context-specific nature of just transitions and their monitoring processes. For example, South Africa's broader Just Transition Framework offers valuable lessons; it serves as a guiding document for national just transition priorities and recognizes distributive, procedural and restorative justice as being integral to the country's just transition implementation and evaluation.

In addition to the literature review and country projects, three meetings with sectoral experts across World Resources Institute (WRI) were organized to discuss how to monitor transitions related to renewable energy, sustainable agriculture and electric vehicles. This helped inform the guide's applicability to different sectors. Finally, interviews were conducted with just transition experts from other countries and organizations to gather their insights on a range of issues, such as reasons for monitoring, decision-making processes and engaging stakeholders, how to select indicators, criteria for the monitoring exercise, constraining factors for data collection and data templates. These included interviews with colleagues from Scotland, who are working with the country's Just Transition Commission; New Zealand, who were involved with developing the Taranaki 2050 Roadmap; Brazil, who are developing a just transition monitoring plan to support the implementation of the country's national climate plan; as well as those from Nigeria and South Africa.

Early drafts of this guide were also shared with country project teams to seek feedback, which has informed the discussion in several chapters (e.g., the concept of justice and justice-related indicators). Drafts were also shared with the ICAT secretariat and colleagues in Nigeria and presented at select events. A complete list of contributors can be found in the acknowledgements.

ILO Asia-Pacific

2. Just transitions and monitoring framework

2. Just transitions and monitoring framework

This chapter introduces the concept of just transitions and the monitoring framework for tracking them.

2.1 Defining a "just transition"

As noted in Chapter 1, for the purposes of this guide, a just transition involves addressing climate change in a fair and inclusive manner, creating decent work opportunities for all,[1] leaving no one behind[2] and managing challenges in the process through participatory approaches and social dialogue (Climate Justice Alliance, n.d.; Denton et al., 2022; IEA, n.d.b; ILO, 2021; Just Transition Alliance, n.d.; UNFCCC, 2023). Appendix A provides multiple definitions of "just transition" that have been proposed by various organizations and initiatives. Modern interpretations of a just transition align in terms of their emphasis on the interconnectedness between environmental policies and social and economic changes as well as the need to protect workers and communities. This is because national and subnational policies

1 "Decent work" is defined by the International Labour Organization as productive work (formal and informal) that provides a fair income and is carried out with freedom, equity, security and human dignity (ILO, n.d.).

2 This refers to maximizing benefits of transitions across societal groups and minimizing trade-offs where costs are disproportionately borne by some (Carrasco, 2023).

to address climate change can have intended and unintended outcomes across social, economic and environmental dimensions. These outcomes are often interconnected, interdependent and potentially positive or negative in nature.

There is also broad alignment in just transition principles related to justice, equality, inclusivity and fairness; respect and dignity for vulnerable groups; safeguarding the rights of Indigenous Peoples; creating decent work opportunities; safeguarding fundamental labour principles and rights; extending social protection; fairness in energy access and use; and supporting social dialogue and democratic consultation with relevant stakeholders (Denton et al., 2022; ILO, 2015). The ideas of fair distribution (distributive justice), inclusive processes (procedural justice) and redressal of past injustices (restorative justice) are often at the core of what constitutes a just transition.

2.1.1 DISTRIBUTIVE JUSTICE

Distributive justice refers to recognizing and addressing disproportionate costs of a transition for vulnerable populations, managing trade-offs and striving for a fair allocation of goods, resources and opportunities (Banerjee and Schuitema, 2022; Heyen et al., 2021; Juhola et al., 2022). It offers insights into how marginalized groups and communities (e.g., vulnerable populations such as women, youth, those employed in jobs associated with industries in transition, etc.) are experiencing and participating in just transition processes. It focuses on the fair distribution of a transition's costs and benefits among people with competing needs and claims, and it enables inequities to be tracked, revealing how they may be changing in response to the transition. Distributive justice asks, for example, who is benefiting the most from a policy? Who is being harmed? How might this policy impact different communities with different access to resources, such as urban versus rural communities? How might this policy shift the economy of certain regions, who predominantly lives in these regions, what support systems do they have or will they need? Tracking distributive justice elements can show policymakers where intervention is needed to mitigate and minimize harms and better share the benefits of transition efforts.

2.1.2 PROCEDURAL JUSTICE

Procedural justice pertains to the application of fair, unbiased, inclusive processes so that all stakeholders can exercise their voices or be represented in policy formulation, decision-making and implementation. Procedural justice is not only concerned with what outcomes are generated but also how they are generated in terms of, for example, levels of participation and the inclusive nature of decision-making and institutional processes (Frey, Benz and Stutzer, 2004). It refers to inclusive decision-making with stakeholders to ensure that what is "just" aligns with stakeholders' perceptions (Galanis et al., 2025; Yale Law School, n.d.). It deals with how governance, policymaking, decision-making and research are undertaken; who is involved; whether there is diversity; how to be more transparent about objectives and underlying assumptions; whether there are social or political limitations to participation; and how stakeholder participation was designed (Zimm et al., 2024). Procedural justice asks, for example, are the research tools being used cultivate inclusion and diversity? Are social norms, customs and stakeholder groups—with their varied contexts—considered to facilitate and enable greater participation? Are the methods, processes and models too coarse to consider the implications of policies for different groups? Are locally recognized and trusted leaders involved in communicating with stakeholders, and are the messages and discussions packaged in a way that is contextually sensitive, relevant, timely and accessible to the audience? Is there sufficient information for decision-making, and are the limitations of results explained (Zimm et al., 2024)? Tracking procedural justice elements can yield answers to such questions.

2.1.3 RESTORATIVE JUSTICE

Restorative justice is concerned with righting historical wrongs, reducing inequities and preventing future harms. Often, multiple factors rooted in a society are responsible for and contribute to historical harm (e.g., colonialism, class structure, gender bias, etc.). This kind of justice calls for redressing barriers and increasing support so groups can participate in the economic transition process and repair existing inequities (Restorative Justice Exchange, n.d.). Restorative justice measures and policies go further than dealing with the distributional impacts and aim to address historic injustices and harm (Chan et al., 2022). Restorative justice asks, for example, who has been excluded from decision-making in the past? Which communities or groups have been harmed (e.g., suffered negative environmental impacts from development policies) or are at risk of experiencing inequities in the future? Restorative justice may be achieved through remediation or restorative actions, providing compensation for losses and ensuring accountability. Tracking restorative justice elements can reveal the progress being made to right historical wrongs.

These three types of justice are often interconnected and interdependent and should be considered together. For example, to ensure distributive justice, users should strive for stakeholder participation in the process of defining what is fair (i.e., pay attention to procedural justice). The fairness discussion should also include an understanding of which stakeholders have been historically wronged, which is part of restorative justice.

2.2 Monitoring framework to track just transitions

With this understanding of "just transition", the guide offers a monitoring framework designed to track the social, economic and environmental changes that may accompany transitions. The guide also applies a justice-based lens to examine the participatory nature of underlying processes and how distinct societal groups may experience changes. Just transition monitoring, unlike greenhouse gas emissions monitoring, emphasizes the following:

- Tracking a wider range of issues (e.g., employment, education, economic diversification, health, etc.)
- Following changes that may be occurring in different population groups (e.g., gender, youth, vulnerable communities, workers in fossil fuel industries,[3] etc.)
- Understanding how justice-related issues

3 For example, involving mining and processing of coal, oil and gas.

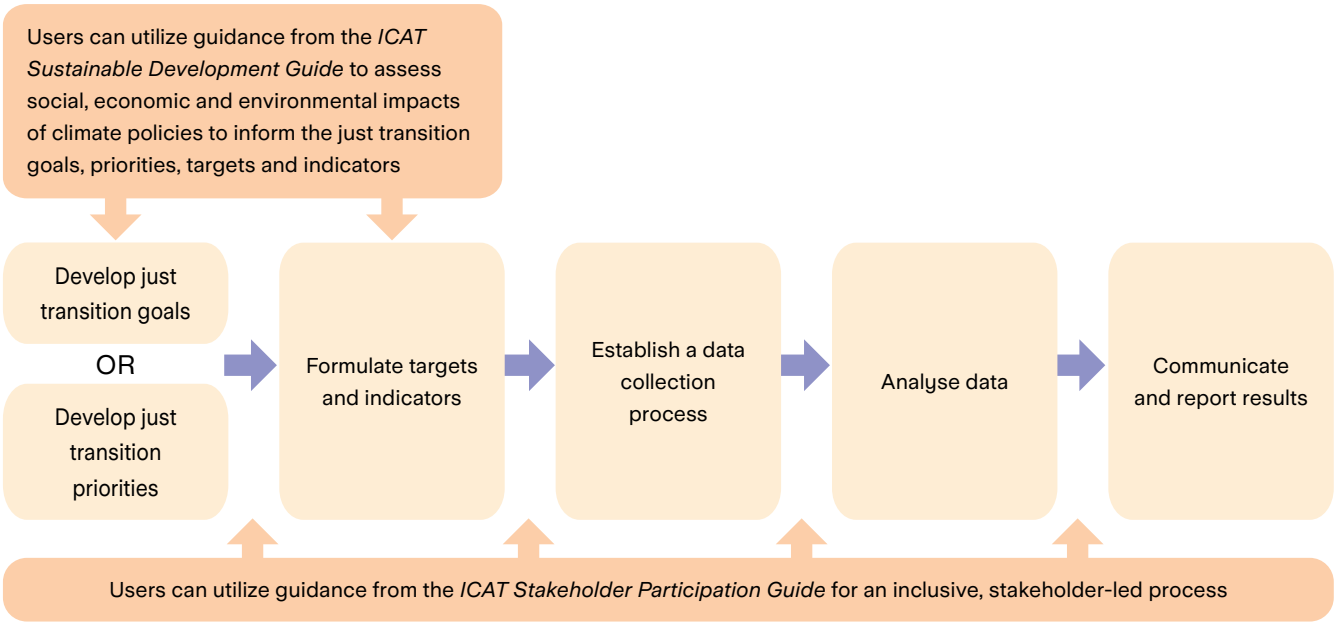
are addressed in transitions (e.g., through participatory processes and equitable sharing of costs and benefits across society)

The guide proposes the following steps to monitor transitions with a justice lens (Figure 2.1):

1. Develop just transition–related goals or priorities.
2. Formulate targets and key social, economic and environmental indicators.
3. Establish a data collection process.
4. Analyse data to understand trends.
5. Communicate information to reflect changes and inform policies and decisions.

Users should become familiar with all steps before implementing them because they build upon and influence each other. It is helpful to consider how each step adds up to monitor just transitions. Just transition monitoring can be a complex and resource-intensive effort. Therefore, the guidance for each step helps to "bound" the monitoring exercise. This prevents users from feeling overwhelmed or like they must achieve a comprehensive framework from the start. Users can adapt the monitoring framework to their context. Many governments may be able to expand upon existing monitoring efforts by considering goals, objectives and data collection processes that are already in place; these processes may have just transition considerations already incorporated but not explicitly noted as such.

Figure 2.1 | **Steps for monitoring just transitions**



Source: Adapted from Kusek and Rist (2004).
Abbreviation: ICAT, Initiative for Climate Action Transparency.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3. Develop the goals or priorities of a just transition

3. Develop the goals or priorities of a just transition

This chapter explains how to develop just transition goals or priorities to inform the just transition monitoring framework. The guidance can support users in either strengthening existing just transition goals or developing new ones. Users may opt to skip this chapter if goals or priorities related to social, economic and environmental changes and justice considerations of the transition have already been developed. However, users may consult this chapter if they would like to further develop or modify their goals.

3.1 What constitutes a goal or priority for a just transition?

Similar to the Sustainable Development Goals (SDGs) framework, which includes 17 SDGs with 169 targets and over 200 indicators, just transition goals or priorities can be used to inform targets and indicators and lay the foundation for a just transition monitoring framework (UNSD, 2024). Developing goals may require significant political buy-in; this may be challenging for some users working in jurisdictions that are in the early stages of public dialogue on just transition issues or where the government has not adopted any kind of vision statement or overarching objectives. In such cases, users may consider identifying priorities based on an understanding of the impacts of the transition. For the purposes of this guide, goals and priorities exist on a continuum of specificity. Users identifying priorities can choose to advance along this progression to define goals over time. Users may also choose to combine approaches; for example, they can establish priorities for sectors where the conversation is less advanced and set goals for sectors with greater stakeholder awareness. Whether users choose to develop goals or set priorities, they should ideally decide their approach either before engaging with stakeholders or in consultation with them. This ensures consistency throughout the process, avoids confusion and ensures that stakeholder input is tailored and practical.

Box 3.1 | **List of key steps**

- Define goals that address the justice aspects of the transition.
- Set priorities informed by impact assessments as an alternative to developing goals.
- Prepare for an inclusive process to develop goals by identifying stakeholders, building stakeholder capacity and designing a consultation process that promotes participation and engagement.
- Identify who and what could be affected by the transition.
- Develop process- and outcome-oriented goals for the just transition and validate with stakeholders.
- Publicly communicate the goals that have been developed.

3.1.1 GOALS

In the context of this guide, "goals"[4] are understood as high-level statements indicating desired outcomes across social, economic and environmental dimensions (Tunnicliffe et al., 2020). Just transition goals should articulate long-term, justice-oriented and inclusive change that should accompany the transition to address climate change. Goals may pertain to avoiding potential negative impacts as well as to equitably sharing opportunities presented by the transition. They describe how communities interpret the future in terms of their people and their place in society (PCC, 2022a; Scottish Government, 2021; Venture Taranaki, 2019). A good test of whether a goal is a just transition goal—versus a climate or other type of goal—is to check whether it specifically addresses one or more of the three types of justice: distributive, procedural or restorative justice.

4 Users may come across other terms with similar descriptions, such as "outcomes", "objectives", "aims" and "vision".

Goals should address how the needs of stakeholders will be met during the transition (ILO, 2015; Just Transition Fund, n.d.a). For example, an energy sector transition goal for meeting 100 per cent of electricity consumption with renewable energy may not be accompanied by related goals addressing the social and economic aspects of the transition; this guide does not consider such a goal to be a just transition goal (IEA, 2021; Pinker, 2020). For it to be a just transition goal, it could include, for example, goals supporting affected workers and communities:

- Provide support for workers who are laid off from the coal industry or related businesses to secure good-quality new jobs with family-sustaining incomes (CDLE, 2020).
- Provide electricity at affordable prices for all communities.
- Regularly consult with workers in the energy sector to understand their experiences and provide accommodations, trainings and job placement services.

Users can also formulate time-bound, measurable goals, which can be easier to translate to targets and can help to monitor progress. Scotland's draft Energy Strategy and Just Transition Plan includes several just transition goals to achieve by 2030 to complement the sector transformation (Scottish Government, 2023):

- Scotland's energy sector will have net-positive employment in a range of zero-carbon industries.
- Regions and communities will be empowered to participate in the energy transition in a way that meets their needs, including increasing the number of community-owned energy projects.
- The costs and benefits of the growth in Scotland's clean electricity generation will be shared equitably across society.
- Regions across Scotland will have thriving local energy economies. Scotland's energy sectors will provide fair work that recognizes equalities, respect, voice and pay. They will create opportunities for local energy employment, with a focus on supporting opportunities in vulnerable and deprived places and communities.

Users should be specific when defining the intended goals of the transition; this will make it easier to develop targets and indicators and contextualize monitoring results. Users may be ideally situated to develop goals in these instances:

- Countries or regions already have a just transition vision that has been adopted into policy or law or has been widely publicized and discussed.
- Stakeholders are already well-informed or aware of just transition issues and are ready to engage on the topic.
- Users are already aware of key priorities and are ready to develop their goals.

3.1.2 PRIORITIES

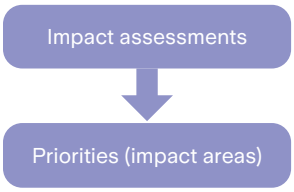
Priorities represent key impact areas that should be monitored during the transition to a low-carbon, climate-resilient economy. Not all impacts should be considered "priorities", but impacts with a high likelihood of affecting communities or of significant magnitude should be identified as priorities.[5] Users can identify just transition priorities based on impact assessment studies and in collaboration with stakeholders (Figure 3.1). In addition, users are encouraged to seek additional input and engagement with stakeholders to also monitor how benefits and opportunities are being shared. Priority areas may include jobs in the fossil fuel sector, the availability of finance in vulnerable communities or access to clean renewable energy. (In comparison, a possible goal related to the jobs priority may be "provide support for workers who are laid off from the coal industry or related businesses to secure good-quality new jobs with family-sustaining incomes" or "by 2030, Scotland's energy sector will have net-positive employment in a range of zero-carbon industries".)

The community of Taranaki, New Zealand, used a stakeholder-driven process to develop its 2050 Roadmap for a just transition to a low-emissions economy. The 2050 Roadmap identifies Taranaki's priorities, which include education opportunities, attractive jobs, maintaining current lifestyles and caring for the region and its people (Venture Taranaki, 2019). Priorities such as these can help

5 See the ICAT *Sustainable Development Methodology* for guidance on selecting impacts based on likelihood and magnitude (ICAT, 2020b, Chapter 7).

develop just transition goals or formulate targets and indicators.

Figure 3.1 | **Impact assessments inform priorities**



3.2 Key steps to develop goals or priorities for just transitions

Just transition goals and priorities will differ by country, region and sector according to local circumstances, stakeholder interests, decarbonization pathways, climate vulnerabilities and the historical structure of social and economic inequalities.

Users should emphasize opportunities and ways to engage stakeholders in the following steps (Figure 3.2) (Upham, Sovacool and Ghosh, 2022; Vatalis, Avlogiaris and Tsalis, 2022):

1. Prepare an inclusive development process for goals or priorities.
2. Identify impacts of a transition to a low-carbon, climate-resilient transition.
3. Develop either priorities or process- and outcome-oriented goals.
4. Validate with stakeholders.

3.2.1 PREPARE AN INCLUSIVE DEVELOPMENT PROCESS

Stakeholder involvement is critical to ensure procedural justice and to focus monitoring on areas that stakeholders consider to be just and equitable (ILO, 2015). This can help rebuild trust within communities that have historically been marginalized in national or regional developmental priorities and raise acceptance of climate action (Kumagai and Iorio, 2020). Users should take some preparatory measures to ensure that stakeholders are adequately engaged during the goal development process and that inputs are sought from various groups (see ICAT [2020a] for further guidance on facilitating strong stakeholder participation). These measures include identifying stakeholders, building their capacity and promoting their participation and engagement.

Figure 3.2 | **Steps to develop just transition goals or priorities**

1. Prepare an inclusive process	2. Identify impacts	3. Develop priorities or goals	4. Validate goals or priorities with stakeholders
Goals or priorities should be co-designed with stakeholders to support procedural justice	Goals or priorities should be informed by knowledge of current and future impacts and vulnerable communities to support distributive and restorative justice	Priorities: These focus on key impacts or areas of concern for monitoring Goals: Process goals ensure decision-making is fair, and outcome goals prevent negative impacts and address social, economic and environmental injustices	Review and validation by stakeholders helps to ensure procedural justice

Identify stakeholders

Users can begin by identifying stakeholders from sectors of the economy likely to be affected during the transition as well as from key at-risk communities (CIF, n.d.; ICAT, 2020a). Stakeholders can be identified through self-selection; mapping of stakeholder groups and at-risk communities; mapping of sectors likely to be affected to identify relevant businesses, workers and unions; records and population data; referrals; and expert feedback.

In South Africa, the PCC engaged workers from the coal, automobile, agriculture and tourism sectors after identifying them as being at risk based on a recent National Employment Vulnerability Assessment and the Sector Jobs Resilience Plan (PCC, 2022a). A list of relevant stakeholders may include local, state and national governments; businesses and trade associations; CSOs; traditional leaders and Indigenous communities; youth groups; women; low-income groups; groups affected by the transition; research organizations; academic institutions; labour unions; workers; members of vulnerable groups; financial organizations; and industry.

Build stakeholder capacity

Inclusivity is important, but stakeholders may have differing views of what a transition will entail and how it will affect various groups. Without a shared understanding, discussions about just transition goals and priorities may struggle to stay on track. Thus, users should build readiness among communities and societies to meaningfully engage and participate in all aspects of the transition (ICAT, 2020a). Users should also allocate adequate time and resources to enhance stakeholders' capacity to meaningfully participate in discussions. These meetings can be structured according to the capacity needs of the groups involved (Atteridge et al., 2022; ICAT, 2020a). For instance, they can involve sharing relevant background information (e.g., on climate change and its impacts, related development policies and plans to address climate change, etc.) or examining how the transition is already affecting different groups or sectors.

Promote participation and engagement

Users should design a consultation process that promotes participation and engagement by planning when, how and where stakeholder discussions occur and ensuring that stakeholders are aware of the entire process. This may be done in consultation with civil society, local leaders and representatives from vulnerable groups to adopt culturally sensitive stakeholder engagement practices and ensure that outreach efforts are inclusive, comprehensive and accessible and elicit adequate participation (ICAT, 2020b; OneWorld, 2022; Venture Taranaki, 2019). Approaches may include the following:

- Adopt consultation methods that are socially and culturally appropriate for the stakeholder group (e.g., organize consultations at times and locations that promote higher attendance across different societal groups). Some stakeholders may be better positioned to participate than others given their perceived role, relationship or vested interest in the status quo; meanwhile, others may face physical, social or economic barriers to participation (Tapella et al., 2021). Understanding these varying interests and power dynamics can create a space for every opinion to be equally heard and considered and can increase opportunities for participation for all (Tapella et al., 2021).
- Moderate discussions to balance contributions from various stakeholder groups and ensure that the voices of vulnerable groups are included, particularly when local power dynamics are skewed against them (Venture Taranaki, 2019).
- Employ diverse engagement methods and mediums—such as through public meetings, workshops, focus groups, interviews, expert elicitation, electronic surveys or social media—and decentralize consultations outside main cities, utilizing established community gathering spaces such as schools, places of worship, libraries and community centres.
- Produce outreach and communication materials in appropriate languages.
- Prepare questions that promote a deep discussion of how stakeholders interpret a just transition and what concerns and expectations they have. For example, what support does the

community need to ensure a decent life? What are stakeholders most concerned about in a just transition? What do stakeholders see as the main challenges of the transition? What sectors and policies should be considered to ensure a fair transition (Araújo et al., 2023; OneWorld, 2022)?

- South Africa presents a helpful example of various ways to encourage stakeholder participation in developing a just transition vision and framework. Their strategies could also be applied to the development of goals (Box 3.2).

3.2.2 IDENTIFY IMPACTS, INCLUDING WHO AND WHAT COULD BE AFFECTED

Several social, economic and environmental changes are likely to occur during the transition, such as those related to employment, health, social well-being, industrial competitiveness, prices of goods and services, air pollution, gender equality and others (see Box 3.3). Users should develop an understanding of the potential changes that may occur, how various groups may experience the transition and how risks and opportunities may be distributed across society (CIF, n.d.). For instance, shifts towards public, shared transport and electric vehicles may entail changes to air quality and health; the skills required for auto industry workers and the composition of the workforce (informal vs. formal) may shift; and changes may occur in the economic composition of automobile manufacturing regions and their ability to provide community welfare services (Sustainable Energy Africa, 2022; World Bank Group, 2022). Users should also identify the severity of impact—for example, whether industrial assets may be closed or repurposed, the degree of economic dependence on sectors affected by transitions, the potential for economic diversification and so forth (CIF, n.d.).

Users should identify potential changes that may occur, including positive and negative, intended and unintended, short- and long-term and in-jurisdiction and out-of-jurisdiction changes. This understanding is crucial because it can help users set goals (and targets and indicators) to manage adverse changes and capitalize on potential benefits to realize a just transition for all.

Box 3.2 | **Stakeholder participation in developing South Africa's just transition vision and framework**

While developing a just transition framework for South Africa, the Presidential Climate Commission (PCC) first provided information to the public about transitioning to net zero and then held stakeholder consultations to understand how they viewed a just transition. During this process, the PCC employed a variety of instruments over a few years, including the following:

- Workshops and events with government ministers, civil society, business, labour, traditional leadership, youth and the research community were publicly broadcast to determine the key areas of community concern.
- The PCC drew on national experts from a variety of fields, including academia, business, labour and civil society by commissioning a series of essays exploring how to achieve a just transition with a focus on sectoral resilience. Topics included open democracy with mitigation and adaptation, labour market shifts and collective bargaining, mental health considerations, integration of informal waste pickers and climate change adaptation finance.
- Smaller group consultations were conducted with workers, communities, small businesses and social partners such as local governments and impacted businesses to allow groups to discuss their own development pathways.
- Stakeholder groups and the broader community were invited to comment on the draft framework.
- A series of in-person community consultations were held to engage municipalities and traditional leaders.
- A large multi-stakeholder conference was organized to seek stakeholder support for the just transition framework.

Users can assess impacts and develop a "theory of change" to understand potential risks and how policies are likely to minimize or address those risks and contribute to desirable goals and outcomes. The ICAT *Sustainable Development Methodology* draws on the causal analysis approach—central to developing a theory of change—to assess environmental, social and economic impacts. Its methodology can be used alongside this guide to identify potential impacts for communities and sectors and to inform the development of just transition goals to address these impacts. Various forms of ex ante impact assessments may be used:

- Economy-wide assessments evaluate macroeconomic exposure to transitions using indicators such as gross domestic product (GDP), employment, distributional analysis for changes in income, jobs and health and social benefits (e.g., Agarwal et al., 2021; Espagne et al., 2021).
- Regional studies analyse impacts to specific areas and communities or analyse impacts for at-risk groups according to gender, ethnicity or race (e.g., Banerjee and Schuitema, 2022; Flochel and Gooptu, 2018; World Bank, 2003).
- Sectoral studies analyse changes in environmental, social and/or economic contexts as economic sectors transition (e.g., Vatalis, Avlogiaris and Tsalis, 2022).
- Policy impact assessments examine specific policies, such as just transition–related impacts of a policy to reduce methane emissions from livestock or assessing the impacts of climate action plans on employment or green jobs (e.g., European Commission, 2024) (see the Nigeria case study in Appendix C).

Users can complement and validate impact assessment through surveys or consultations with experts and stakeholders to identify the current climate policy effects people are experiencing.[6] Stakeholder feedback and information can be systematically gathered and analysed to identify any overarching concerns that could inform goal, target and indicator development (Hassan, 2024; iFOREST, 2022; Tladi, Kambule and Modley, 2024).

Users can further review and determine which categories of changes should be prioritized based on stakeholder concerns and a qualitative assessment of what may be critical to the just transition in their context. For example, in agricultural communities, transition-related changes in land-use policies may affect job opportunities, and livelihoods in coal communities may be at risk when phasing out fossil fuels; thus, users may establish distinct goals for each community. Alternately, they could develop a goal around managing workforce transitions more broadly. The ICAT *Sustainable Development Methodology* provides guidance on using the criteria of likelihood, magnitude and significance to qualitatively assess potential impacts to help decide what to focus on (ICAT, 2020b, Chapter 7).

6 Additional guidance on assessing policy impacts can be found in sources such as CIF (2023), Denton et al. (2022), Fanzo et al. (2021), Greenhouse Gas Protocol (2014), ICAT (2020c), iForest (2022), Just Transition Fund (n.d.), Sun et al. (2023), Tladi et al. (2024) and UNSD (2024).

Box 3.3 | **Social, economic and environmental changes that can occur during transitions**

This box presents a brief overview of the different kinds of social, economic and environmental changes that may accompany transition policies.

Social changes may include changes related to gender equality, resource access, health, culture and community, Indigenous rights and poverty. People who are already vulnerable—for example, as a result of the socially prescribed and generally unequal roles of men and women and structural discrimination—also face a greater risk of being disproportionately affected by mitigation and adaptation actions. For instance, some climate policies, such as instituting carbon taxes, promoting cleaner fuels or preventing deforestation, can place a higher financial burden on low-income households. In the context of phasing out fossil fuels, without appropriate policies and support mechanisms, communities whose livelihoods are linked to fossil fuel–intensive industries can experience social and cultural impacts (apart from financial impacts). To prevent further marginalization, policies should be inclusive and provide social safety nets.

Economic changes include those in national or regional economic activity, employment and the costs of goods and services.[a] While policies addressing current and future climate risks are intended to contribute to social and economic benefits, they often challenge the status quo and disrupt established emissions-intensive modes of production and economic activity. For instance, closing a coal power plant does not automatically generate employment in new modes of production, nor does alternative employment necessarily occur in the same regions as old employment opportunities or call for the same skill sets as those used in previous positions. Regions that were largely dependent on the fossil fuel industry may face widespread job losses, dwindling tax revenue, reduced public expenditure and overall deterioration in quality of life as their dominant sectors decline.[b] These regions may not see new economic opportunities without government-funded, targeted measures that are informed by social dialogue. These measures include economic diversification initiatives, commitments to create new jobs with fair pay and compensation, retraining of workers and support for social protection programmes.

Environmental changes may include changes related to resource extraction, land-use changes, forestry, air quality, water quality and ecological restoration. Like social and economic changes, environmental changes should be monitored during the transition. For example, the transition in electricity and transport is expected to drive a significant decrease in coal mining and fossil fuel production. But it is expected to increase the demand for critical minerals such as lithium and nickel needed for clean energy technologies such as solar panels and electric vehicles.[c] Poor mining practices for these minerals can create environmental and other problems. Consequently, monitoring environmental changes that accompany mineral extraction can help identify worsening issues such as those related to land degradation and water pollution. Monitoring can inform strategies for responsibly producing minerals and reducing demand for primary minerals through increased recycling and reuse.[d]

Sources: a. UNFCCC, 2022b; b. Saha et al., 2023; WRI, 2021; c, d. WRI, 2024.

As an example of how planning for just transition goals may be approached in a jurisdiction, see Box 3.4 for research conducted by an independent non-profit organization, the International Forum for Environment, Sustainability and Technology (iFOREST). The study was undertaken to understand how shifting away from coal might affect the coal-dependent district of Korba in western India.

Box 3.4 | **Considering impacts in a coal-dependent community**

The Korba district of Chhattisgarh state is India's top coal-producing district. It has the most coal-based power plants in the state and the highest total installed capacity. However, 50 per cent of Korba's coal mines are unprofitable, and several large mines are set to fully exhaust the available coal in the next 15–20 years; the state government has agreed to not add any further coal-based power capacity.

To better understand how shifting away from coal might affect the district and how it could be planned in a just manner, the International Forum for Environment, Sustainability and Technology (iFOREST), a civil society organization, conducted a study in the district. The study surveyed 600 households, held 21 focus group discussions and conducted formal interviews with key government and industry representatives at the district and state levels to understand the following:

- The revenue and livelihood dependence of the local community on coal and workers' profiles
- The district's dependence on coal mining for revenue, public amenities and welfare
- The opinion of various stakeholders about closing coal mines and coal-based power plants
- The potential impact of closures on jobs and the local economy
- Opportunities for income substitution and economic diversification

The study underlined the importance of early district-specific and regional planning with stakeholder representation. It also identified priority stakeholder concerns, which could be used to develop just transition goals for the district:

- Skilling, reskilling and worker assistance (e.g., retirement benefits) for the formal and informal workforce
- Transition of formal versus informal workers (e.g., securing early retirement funds, reskilling for formal workers, livelihood generation schemes and investments in new industries for informal workers)
- Economic diversification (e.g., by boosting economic activities related to agriculture, forestry and fisheries; developing low-carbon industries, such as solar; and improving income opportunities in the service sector, healthcare and tourism)
- Repurposing mining land and infrastructure for productive economic use and supporting clean industries
- Social and environmental investments to improve access to education, healthcare and basic amenities
- Public revenue substitution as coal revenue reduces through economic diversification and industrial restructuring measures
- Identifying sources to finance the transition

Source: iFOREST, 2022.

3.2.3 DEVELOP PRIORITIES OR PROCESS- AND OUTCOME-ORIENTED GOALS

When crafting just transition goals, users should develop two types of goals: process-oriented goals and outcome-oriented[7] goals (Breuer, Janetschek and Malerba, 2019). Broadly speaking, a process-oriented goal may be useful for addressing procedural justice, whereas outcome-oriented goals may lend themselves better to addressing distributive and restorative justice (Breuer, Janetschek and Malerba, 2019; European Commission, 2023a; FHWA, n.d.; Kusek and Rist, 2004):

- **Process-oriented goals** relate to processes that are necessary to ensure a positive, just outcome. They ensure decision-making is fair and does not discriminate or disadvantage vulnerable communities. Process goals describe how the just transition may be facilitated and may be more easily understood in the context of specific activities that achieving the goals may require, such as engagement of stakeholders in decisions related to their work, health and safety; social dialogue between policymakers, unions and businesses to inform just transition decisions; or due consideration for environmental safeguards and standards. Process goals can be used to identify criteria, principles or values that stakeholders deem essential to the just transition, such as transparency; effective and non-discriminatory access to justice; and protection of the rights of workers and communities facing employment shifts, loss of land rights or other impacts during transitions.
- **Outcome-oriented goals** are associated with an ideal future state to be realized. They can be crafted by reformulating specific just transition concerns raised by stakeholders or by converting potential risks into desired outcomes. Outcome goals represent overarching aims and objectives that need to happen to achieve success. They should address social, economic and environmental issues identified based on the local context and priorities (see Section 3.2.2). For example, they should deliver the economic benefits of the transition to vulnerable groups and fossil fuel–dependent communities, ensure improved access to energy, improve the mobility of people and goods and achieve an innovative economy with skills and education to realize a low-carbon transition.

Process and outcome goals can be informed by several inputs, including a national just transition vision and theory of change if they have been developed, existing just transition goals and available impact assessments. This ensures that goals are not developed in a vacuum and are rooted in the social, economic and political context. For instance, "theory of change" describes how transition policies may lead to targeted results, what kind of enabling environment may be needed and the risks that should be managed for the desired just transition goals (Fell et al., 2023; Karber, 2018) (see Appendix C for a theory of change developed for just transition outcomes in South Africa). Further, where appropriate, goals should align with existing justice-related considerations in national climate and development policies such as NDCs and LT-LEDS, sectoral policies and social and economic policies.

For users identifying priorities, the identified impact areas—which are based on impact assessment studies and are developed in close cooperation with stakeholders—constitute priorities. These may not lend themselves to a process- and outcome-oriented framing, however. Where appropriate, priorities should align with existing policies and plans (e.g., in NDCs or sectoral policies). Priorities and goals may also occur together with priorities informing the goals. Box 3.5 lists key goals containing process and outcome elements set by the Scottish government for its just transition priorities.

7 The framing draws from the ICAT Transformational Change Methodology assessment guide, which explains that impacts can result from processes and outcomes of policies that drive structural changes in society towards climate change mitigation and sustainable development goals and targets (ICAT, 2020c). According to the guide, outcome characteristics relate to the scale and sustained nature of change resulting from a policy and process characteristics can be understood as intermediate steps or means to realize transformational outcomes.

Box 3.5 | **The Scottish government's national just transition goals**

The Scottish government developed a National Just Transition Planning Framework that defines a set of goals for its priority areas:

- **Citizens, communities and place:** Empower and invigorate communities and strengthen local economies.
- **Jobs, skills and education:** Equip people with the skills, education and retraining required to support retention and create access to green, fair and high-value work.
- **Fair distribution of costs and benefits:** Address existing economic and social inequality by sharing the benefits of climate action widely while ensuring that the costs are distributed based on ability to pay.
- **Business and economy:** Support a strong, dynamic and productive economy that creates wealth and high-quality employment across Scotland, upholds the United Nations Guiding Principles on Business and Human Rights and continues to make Scotland a great place to do business.
- **Environmental protection and restoration:** Commit to act within our planetary boundaries while protecting and restoring our natural environment.
- **Adaptation and resilience:** Identify key risks from climate change and set out actions to build resilience to these risks, ensuring Scotland's economy is flexible, adaptable and responsive to the changing climate.
- **Decarbonization and efficiencies:** Contribute to resource-efficient and sustainable economic approaches that actively encourage decarbonization, support low-carbon investment and infrastructure and avoid carbon "lock-in".
- **Equality and human rights:** Further equality and human rights implementation and prevent new inequalities from arising; address fuel poverty and child poverty in a manner consistent with Scotland's statutory targets on each while widening equality and human rights across all protected characteristics.

Source: Scottish Government, 2021.

3.2.4 VALIDATE GOALS OR PRIORITIES WITH STAKEHOLDERS

Users should publicly communicate the goals or priorities that have been developed. If limited stakeholder participation is observed despite efforts, users should ensure that stakeholders are able to review and validate these goals or priorities to seek their broad support and buy-in (PCC, 2022a; Venture Taranaki, 2019). This may include opportunities to seek stakeholder inputs, such as by seeking public comments once draft goals or priorities have been prepared, demonstrating that the voices of the vulnerable and affected groups have been considered in shaping the drafts and sharing feedback received through additional stakeholder workshops.

The subsequent steps in the remainder of this guide are similar for developing goals and priorities unless otherwise noted.

4. Formulate targets and indicators

4. Formulate targets and indicators

Box 4.1 | **List of key steps**

- Develop targets with stakeholder participation across social, economic and environmental dimensions using a justice lens and ensuring that targets align with goals and priorities.
- Develop indicators pertaining to distributive, procedural and restorative justice to track progress.
- Use best practices to select indicators.

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To stay on track, users should identify relevant targets and indicators that can be monitored over time. Indicators convey how the transition is unfolding and whether desirable progress is being made. This chapter provides guidance for users to develop targets and indicators pertaining to social, economic and environmental development in line with their stated just transition goals or priorities. Development of targets and indicators should go hand in hand because measurable indicators are needed to determine progress towards targets. Users may follow an iterative process to develop targets aligned with goals or priorities and select related indicators that can be feasibly monitored over time to demonstrate achievement of targets since conditions may change over time.

4.1 Develop targets for goals or priorities

After goals or priorities are created and validated, users should develop targets to track progress (Figure 4.1). Although targets are recommended, users may choose to set them over time based on data and resource availability. In such instances, users can start with monitoring their indicators and subsequently develop targets. Targets provide benchmarks to monitor progress to understand how the transition is unfolding (Kusek and Rist, 2004). Users should aim to establish at least one target per goal or priority developed. Users should consider the scope and number of their just transition goals or priorities as well as the capacity required to monitor when determining the number of targets to be set. Sustainable development impact assessments can also inform targets and indicators (see Section 3.2.2).

4.1.1 ESSENTIAL CRITERIA FOR DEVELOPING TARGETS

SMART targets

Sometimes, setting a target may be challenging due to a lack of credible projections or varying perceptions among experts and stakeholders about

the degree of ambition that is needed or realistic. Users can adopt common best practices to set realistic targets for goals—for example, developing targets that adhere to the SMART (specific, measurable, achievable, relevant and time-bound) principles. To better understand how to apply the SMART principles, see Table 4.1 for a set of criteria that can be used to form targets (see Box 4.2 for some examples).

For further information on employing the SMART technique, see Doran (1981) and Salmon-Stephens (2021).

Alignment with just transition goals, priorities and existing policies

Targets should be informed by and aligned with the just transition goals or priorities to ensure coherence. Individual targets may be associated with individual or multiple goals or priorities. Targets may also derive from, or complement, NDCs, long-term targets, SDGs, sector-specific and/or any relevant existing policy-related goals. Some governments may already be monitoring select social, economic and environmental developments and may have set targets that can be utilized.

Targets may also respond to anticipated impacts of specific policies to monitor, and potentially deter, negative consequences associated with mitigation. (See also Section 3.2.2 on impact assessments to inform goals and Section 4.2 on developing indicators.)

Mid- to long-term targets

Users can develop mid- to long-term targets (between 5 and 15 years) that are transformational and ensure that their short-term targets (less than 5 years) help set them on the path to deep, systemic change embodied by the long-term target (ICAT, 2020c). For mid- to long-term targets, users should also define interim milestones to not lose sight of the final aim along the way. If progress is too slow, the target may not be reached. Interim milestones can provide early signs of challenges or weak progress. When progress is occurring in the right direction and at the desired pace, the corresponding indicator trend line (highlighting the change over time) aligns with the trajectory to achieve the short-term target value; this can be regularly monitored to stay on track for the mid- to long-term target values.

Figure 4.1 | **Steps to define targets and indicators**

Table 4.1 | **SMART targets**

S	Specific	What specific change does the target seek to capture? What is the intended action or outcome?
M	Measurable	How can change be measured over time to determine if the target has been met?
A	Achievable	Is the target realistic to achieve?
R	Relevant	Is this target aligned with the just transition goal or priority?
T	Time-bound	What is the deadline for achieving the target?

Source: Adapted from University of California (n.d.).

Box 4.2 | **Examples of SMART, policy-aligned and interim targets**

The following examples show how to utilize SMART (specific, measurable, achievable, relevant and time-bound), policy-aligned and interim targets to track progress. The Sustainable Development Goal (SDGs) include several targets for each of the 17 goals. For instance, these are some of the SMART targets to reach by 2030 for SDG 1 (end poverty in all its forms everywhere):[a]

- Eradicate extreme poverty for all people everywhere, currently measured as people living on less than USD 1.25 a day.
- Reduce—at least by half—the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.
- Ensure that all men and women—in particular, the poor and the vulnerable—have equal rights to economic resources as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.

In another example, Antigua and Barbuda has some outcome-oriented goals in its nationally determined contribution to "support social inclusion, gender and reduce transitional risks" that are supported by 2030 targets:[b]

- Increase the number of micro, small and medium-sized enterprises that provide energy services aligned with the objectives of the Paris Agreement (through the Sustainable Island Resources Framework Fund and using the Entrepreneurial Development Programme Fund) by 50 per cent.
- Increase the number of women-led businesses implementing renewable energy and adaptation interventions by 20 per cent.
- Provide apprenticeship programmes for 100 per cent of students at secondary and tertiary institutions.

Sources: a. UNSD, 2024; b. Government of Antigua and Barbuda, 2021.

4.2 Develop monitoring indicators

Indicators can be used to capture social, economic and environmental changes and reflect how the transition may affect communities, consumers, households, workers and economic regions. Indicators are useful to understand trends and seek insights into underlying factors, but they do not describe a cause-and-effect relationship (Singh and Vieweg, 2015). This is because change in indicator value, or lack thereof, is often influenced by a range of factors rather than a single policy or even a combination of policies. Indicators offer early warning signs of challenges and provide an opportunity to address them. Just transition–related policies are but one factor; the specific context—including multiple enabling and hindering factors and external drivers (e.g., political, economic)—also contribute to their changing status. Nevertheless, indicators provide valuable information on the direction of change and are a necessary input into causality analysis seeking to attribute impacts to individual (or groups of) policies. As noted in Chapter 1, this guide focuses on monitoring the changes that may occur as economies and sectors transition to address climate change. It does not establish a cause-and-effect relationship between policies and actions underlying the transition and the changes being observed.[8]

Policy impacts may be identified to inform indicators. Users can undertake sustainable development impact assessments (e.g., by using the ICAT *Sustainable Development Methodology*) to identify impacts and related indicators. For

8 Users interested in such a causal analysis can apply this guidance in combination with the Greenhouse Gas Protocol *Policy and Action Standard*, the ICAT series of policy impact assessment guides for sectors and the ICAT *Sustainable Development Methodology*.

instance, impact assessment may reveal that policies to reduce methane emissions from livestock or promote regenerative agriculture have potential implications for farmer livelihoods and food security (Babu and Selvaraju, 2023; Scoones, 2023). Developing corresponding indicators could then help monitor changes related to these areas.

4.2.1 ENSURE ALIGNMENT WITH TARGETS

Users should develop a set of indicators (or integrate existing indicators) to monitor and track changes over time. Indicators should be developed irrespective of whether users have formulated targets; however, where targets exist, indicators should align with them. For understanding just transition–related changes, indicators should go beyond monitoring greenhouse gas indicators, such as tons of greenhouse gas emitted or sequestered. Indicators should help monitor changes towards social, economic and environmental goals or priorities. Users should include and prioritize just transition–related indicators to monitor the following (Greenhouse Gas Protocol, 2014; IEA, 2022; Schumer et al., 2022; Singh and Vieweg, 2015):

- **Social, economic and environmental changes** (e.g., the total percentage of full-time jobs created in new sustainable industries as a proportion of total jobs, land area reforested/remediated in coal mining areas, population coverage under social protection programmes disaggregated by region and by vulnerable groups, the gender gap in sustainable industries)
- **Underlying factors (both enablers and barriers) that signal future change** (e.g., investment in economic diversification programmes in fossil fuel–dependent regions; public-private partnerships agreed upon to promote good-quality jobs in sustainable industries, such as union jobs with health benefits; the number of support measures in place for training opportunities for up- and reskilling fossil fuel workers)

4.2.2 USE BEST PRACTICES TO SELECT INDICATORS

Selected indicators should facilitate tracking changes in technology, processes, behaviour and practices across social, economic and environmental dimensions. Users should consider the following factors to develop precise, unambiguous and coherent indicators (Kusek and Rist, 2004; Singh and Vieweg, 2015):[9]

- **Clarity:** Users should select indicators that are unambiguous and unique and clearly describe them. They should be clearly defined with a narrative definition and units of measurement. Based on the indicator and how it has been defined, the data to be collected may be quantitative or qualitative. Users should also note details such as how often they should be measured (frequency of data collection), which methodology is best and which data sources are to be used.
- **Relevance:** Users should select indicators that are relevant to their just transition goals or priorities to measure movement towards achieving the desired changes. Indicator selection is related to the kind of information users want to gather, the level of disaggregation and the purpose, the likely audience for this information and the kind of analysis users plan to do with the monitoring results to serve their audience and purpose (see Section 5.3 and Chapter 6). At the same time, users should strive to limit the total number of indicators, especially new indicators, to be able to balance available resources and what may be needed for data collection and analysis across all indicators.
- **Feasibility:** Users should select indicators for which data is either already regularly collected or can be gathered in a cost-effective manner with reasonable effort (see Section 5.3). Existing indicators can be collated through literature reviews, expert interviews and by reviewing established indicator data sets. Governments may have indicators that they monitor nationally, such as the Social Progress Index in India, which uses almost 140 state- and district-level indicators to track changes across issues

9 These distil from various criteria, such as RACER (relevant, accepted, credible, easy and robust), CREAM (clear, relevant, economic, adequate and monitorable) and SPICED (subjective, participatory, interpreted and communicable, cross-checked and comparable, empowering and diverse and disaggregated) which are used to inform how indicators are formulated (Bours, 2014; Kusek and Rist, 2004; OECD, 2014; Roche, 2002; Schiavo-Campo, 1999).

such as nutrition, shelter, water and sanitation, environmental quality, inclusiveness and access to advanced education (Kapoor and Green, 2022). National and international organizations also have extensive sets of social, economic and environmental indicators monitoring data across multiple countries (such as those compiled by national statistical institutes, the World Bank's World Development Indicators,[10] the Asian Development Bank's Key Indicators Database[11] and the United Nations SDGs[12]). However, such databases are not likely to include sufficiently granular data (e.g., for vulnerable groups of people) or subnational data and may be limited in their application to monitor changes at these levels.

- **Distinctiveness:** Users should avoid duplication and ensure that indicators do not measure something already captured by other indicators. Together, the indicators should be coherent and balanced.

4.2.3 APPLY A JUSTICE LENS TO INDICATORS

Indicators can provide insight into the degree of change with respect to distributive, procedural and restorative justice aspects of the transition. Users should include indicators that monitor justice-related changes across a range of social, economic and environmental issues, such as the following (Figure 4.2):

- Upskilling, training and relocation, transition support programmes and employment and wages for workers and communities dependent on fossil fuel industries
- Growth of new sustainable industries, economic diversification, industrial competitiveness and similar issues pertaining to regional economic development
- Vulnerable groups (e.g., Indigenous groups, youth, women, low-income groups, rural communities, etc.)
- Access-related issues
- Stakeholder participation
- Governance and institutions
- Air quality and health-related issues

The three kinds of justice-related indicators are further discussed below.

Distributive justice

Monitoring disaggregated data shows whether different population groups are experiencing the changes differently and disproportionately (Heyen et al., 2021). For example, lower-income households may increase the share of disposable income they spend on energy services after the introduction of a carbon tax or a change in subsidies. But this will likely not be evident unless users collect disaggregated data by income group for energy expenditure as a share of income (Pinker, 2020). Distributive justice-related indicators, monitored through data disaggregated by demographic groups, are often more common than other justice-related indicators (Table 4.2). Users should collect information for different types of groups to highlight distributional differences. These groups may be categorized as follows (Heyen et al., 2021):

- Social and economic groups (e.g., differing income level; employment status; job category; or belonging to a vulnerable or socially disadvantaged group, such as Indigenous populations or caste-based groups)
- Demographic groups (e.g., differing education levels, gender, age, ethnicity)
- Place (e.g., rural vs. urban, high-income vs. low-income region)

Procedural justice

Procedural justice indicators relate to the recognition and participation of vulnerable groups and communities in all phases of transitions and address issues such as inclusive and participatory decision-making and access to information. These indicators can signal societal participation—especially of actors such as vulnerable and affected groups, civil society and citizens—in a way that goes beyond mere sharing of information. Power dynamics within stakeholder processes may not be equitable and may require careful examination of the stakeholder processes to avoid

10 https://databank.worldbank.org/source/world-development-indicators

11 https://kidb.adb.org/

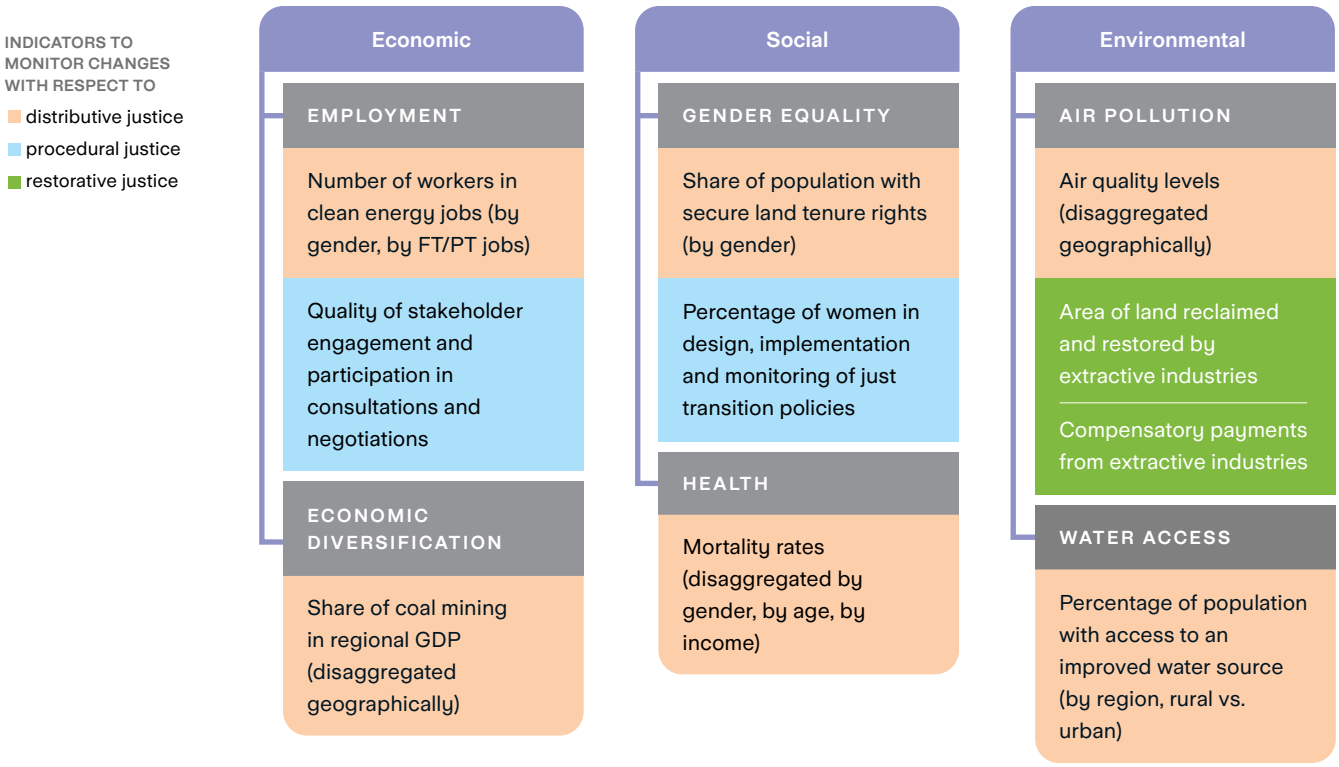
12 https://sdgs.un.org/goals

excluding groups. Procedural justice indicators can help ensure a democratic, inclusive, consultative, collaborative, accessible and fair process involving relevant stakeholders (Table 4.2).

Restorative justice

Climate-related restorative justice has mostly been discussed in the context of adaptation, loss and damage as well as in relation to environmental harm and human impact as a result of infrastructure development (e.g., financial compensation for those facing displacement due to a hydro project) and resource exploitation projects (e.g., mining) (Juhola et al., 2022; Lager et al., 2023). A broader set of indicators focused on repairing and redressing harm done to vulnerable communities and stakeholders, as well as preventing future damage by strengthening compensation and redistribution measures, are essential to restorative justice (Table 4.2).

Figure 4.2 | **Illustrative examples of just transition indicators**



Source: Adapted from ICAT (2020b).
Abbreviations: FT/PT, full-time/part-time; GDP, gross domestic product.
Note: The figure includes only a few examples of areas of interest and associated indicators for illustration. It is not meant to provide a comprehensive picture of all areas of interest and indicators.

Table 4.2 | **Illustrative list of indicators pertaining to different kinds of justices**

Distributive justice
▪ Unemployment rate in communities historically dependent on fossil fuels (disaggregated by gender, age)
▪ Access to healthcare facilities in communities undergoing economic diversification and revitalization as part of transition (degree of access) (disaggregated by region)
▪ Gender wage gap (USD) (disaggregated by type of industry/sector, region)
▪ Share of population without access to electricity (per cent) (disaggregated by region)
▪ Share of population not able to keep home adequately warm (per cent) (disaggregated by region)
▪ People engaged in education or training upon leaving fossil fuel–related workforce (as per cent of total number of people leaving fossil fuel workforce) (disaggregated by gender, income, region, age and other demographic markers)
Procedural justice
▪ Share of women in community and government decision-making positions (per cent)
▪ Degree of trust in public institutions in the jurisdiction (ordinal scale)
▪ Level of transparency in the distribution of financial grants (e.g., for compensation for lost jobs from coal phase-out) (high/medium/low)
▪ Integration of health benefits assessments in urban development/climate action plans (presence/absence)
▪ Meaningful access to administrative and judicial remedies (quality/degree of access to different groups)
▪ Partnerships established or strengthened between the private sector and education providers to support learning and employment opportunities (number)
Restorative justice
▪ Number of people receiving compensation when environmental harm has taken place (number)
▪ Amount invested in remediating contaminated sites around mines, refineries and other industries (USD)
▪ Number of transition policies that address historic injustices (e.g., investing revenue from carbon trading in low-income/less-developed regions) (number)
▪ Compensation for those who cannot be resettled into new jobs as a result of transition (USD allocated/disbursed)
▪ Share of fossil fuel companies with grievance mechanisms for employees and affected stakeholders (per cent out of total automotive companies)
▪ Compensation for communities affected by pollution (USD committed/disbursed)

Source: Adapted from EPA (2023, 2024), European Commission (2023a, 2023b), Heyen et al. (2021), ICAT (2020), Narayan (2022) and UN Global Compact (2023).
Abbreviation: USD, US dollars.
Note: Examples included here are not meant to be comprehensive in nature and do not represent priority indicators.

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5. Establish data coordination and collection processes

5. Establish data coordination and collection processes

Box 5.1 | **List of key steps**

- Understand the essential elements of a comprehensive just transition data management framework.
- Appoint an existing data coordination agency, or establish a new agency, as a core part of a just transition data management framework.
- Determine the scope, functions and responsibilities of the coordinating body.
- Establish its legal status, authority and governance structure while ensuring adequate stakeholder participation and representation.
- Identify the appropriate level of data disaggregation for indicators.
- Identify primary or secondary data sources for indicators.
- Develop metadata templates for harmonization and consistency.
- Pursue coordination and data-sharing across agencies and build internal capacity.

Abbie Trayler-Smith / Panos Pictures / DepartmentforIntDevelopment

Data is the foundation for formulating, revising and refining policy decisions based on gathered evidence (World Bank Group, n.d.a). Decision makers and stakeholders need accurate, timely, relevant, accessible and sufficiently disaggregated data and statistics to monitor just transition indicators (UNSD, 2017). Credible data for just transition indicators, collected through well-established data collection processes, can help determine baselines, identify spatial and temporal trends, assess progress, highlight correlations and patterns to be further analysed and inform policies. This chapter discusses how users can develop a data management framework for just transition indicators to streamline the collection of information. Central to the framework is a coordinating body that performs and manages a range of functions related to data collection. The chapter also discusses data disaggregation and collection methods.

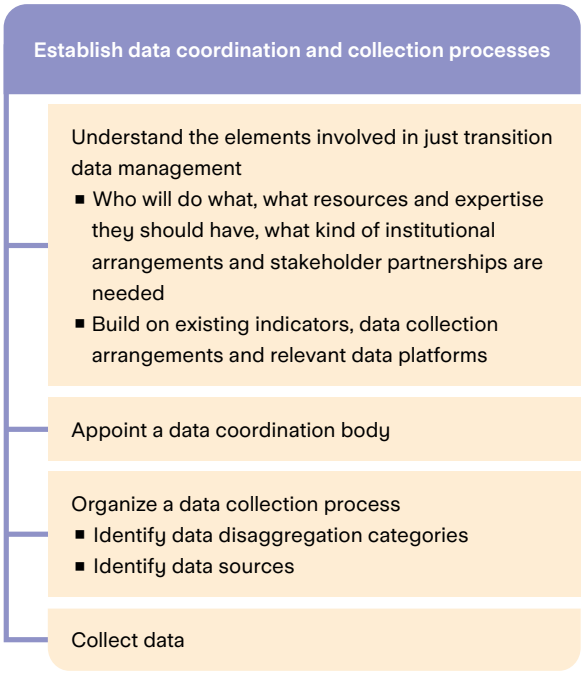
5.1 Elements of a just transition data management framework

Monitoring the wide variety of social, economic and environmental indicators requires extensive data collection. The number of just transition–related indicators can be quite large, requiring coordination across various agencies that may already be collecting this information or the creation of new methods and arrangements for new indicators. Governments should prioritize tracking and analysing some indicators over others; not every indicator that exists will be able to be tracked and analysed due to limited resources such as time or staff capacity. Ideally, this decision process should be done in close consultation with representatives from impacted stakeholder groups to ensure procedural justice. Where feasible, users should strive to build on existing indicators, data collection arrangements and relevant data platforms. One example is the platform for coordinating climate

information in Costa Rica,[13] which monitors sustainable development–related impacts, among other issues (SINAMECC, 2021). Over time, users could envisage a framework that can monitor both greenhouse gas and non-greenhouse gas indicators, including just transition indicators.

A comprehensive data management framework can clearly lay out what needs to be done, who will do it, what resources and expertise they should have and what kind of institutional arrangements and stakeholder partnerships will be needed (Figure 5.1).

Figure 5.1 | **Steps for data coordination and collection**



Governments should consider data already being collected at different governance levels relevant for monitoring social, economic and environmental indicators. However, in some cases, new data collection processes may need to be established. Existing monitoring processes—such as those related to SDGs, national greenhouse gas inventories and sectoral policies spanning social, economic and environmental issues—can be expanded as needed for tracking just transition indicators. Depending on data availability, users may find it more efficient to either adopt a more comprehensive approach or collect data and monitor in a phased manner, starting with fewer geographical units to investigate how the transition is unfolding in those locations (Kusek and Rist, 2004).

Establishing a comprehensive data collection framework is an iterative process likely to improve over time with adequate resources and capacity. For instance, when the global SDG indicator framework was first adopted in 2017, only 36 per cent of SDG indicators had internationally established methodologies or standards (Kitzmueller, Stacy and Mahler, 2021). It took three years of significant effort by the global statistics community to reach a stage where methods were available for all indicators (Kitzmueller, Stacy and Mahler, 2021).

5.2 Appoint a data coordinating body

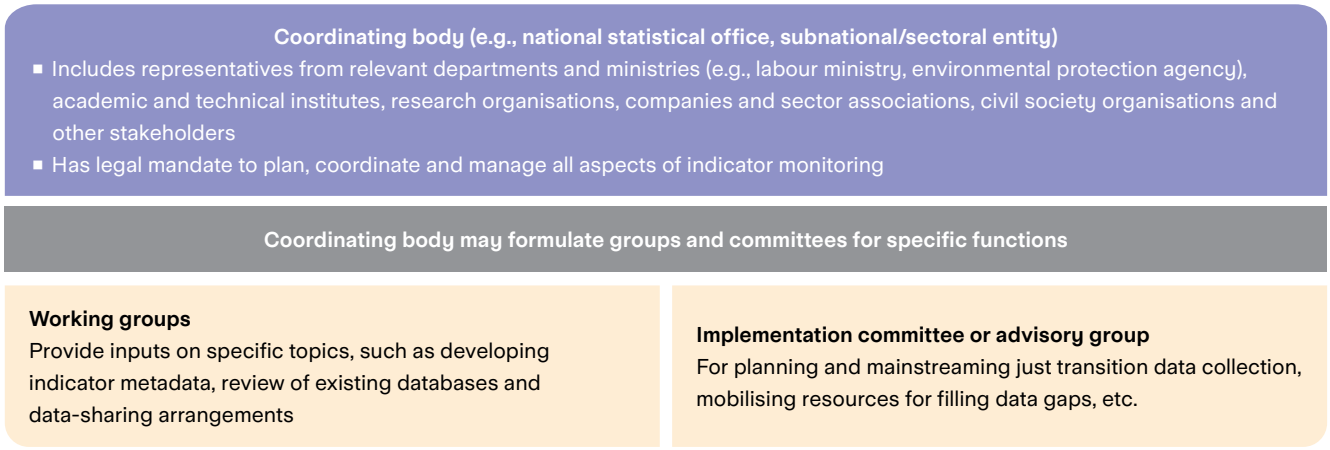
Users should appoint a data coordinating body (e.g., a national statistical office) that has the mandate to govern, manage and provide oversight for data collection, access and sharing arrangements, quality control and analysis and dissemination (Figure 5.2). Given the scope of just transition monitoring, the body should seek participation and representation from government agencies and departments (national and subnational where feasible and appropriate), non-governmental organizations, civil society groups and communities, industry, academia and others. Tasking an inclusive, representative body with convening and coordinating key decisions related to just transition data management can streamline data collection, avoid duplication and efficiently utilize limited resources. This would entail the following:

- Determining its scope, functions, constitution and responsibilities
- Establishing its legal status and authority
- Developing its governance structure

13 Costa Rica's National Climate Change Metrics System (Sistema Nacional de Métrica de Cambio Climático; SINAMECC) has four modules—mitigation, adaptation, climate finance and sustainable development—to monitor progress (SINAMECC, 2021).

An existing entity that is already tasked with generating and disseminating social and economic information (e.g., national statistical offices, national planning commissions, sectoral ministries, academic institutions, research organizations, etc.) or sectoral information (e.g., line ministries) can be responsible for coordination, with support and representation from all stakeholders. In some instances, there may already be a structure to collect information on both greenhouse gas and non-greenhouse gas metrics along with associated coordinating body that can be built upon, as was the case in Costa Rica. In some countries, national statistical offices have a decentralized network across the country that can be harnessed for just transition–relevant data. For instance, Box 5.2 illustrates the role played by Bangladesh's statistical office as the central coordinating body responsible for providing data on over 100 SDG indicators.

Figure 5.2 | **Coordinating body for monitoring just transition**



Source: Adapted from Min (2024).

Box 5.2 | **Coordinating Sustainable Development Goal data: Lessons from Bangladesh**

The Bangladesh Bureau of Statistics (BBS) has 23 regional statistical offices in larger districts, 486 subdistrict statistical offices and 23 statistical offices in metropolitan centres. As the national statistical organization, BBS is responsible for providing data for 105 Sustainable Development Goal (SDG) indicators and reviewing data provided by designated focal points in different ministries. BBS has established an SDG cell to coordinate overall SDG data-related activities in Bangladesh and foster overall coordination related to SDG-related activities, including facilitating the availability of quality data for SDG monitoring and identifying data gaps. Ministries or divisions in charge of implementing SDG targets are tagged as lead, co-lead or associate. In consultation with co-lead and associate ministries/divisions, the lead ministry or division prepares action plans to implement these targets.

To implement SDGs, Bangladesh has adopted a whole-of-society approach, which involves government agencies at national, subnational and local levels, non-governmental organizations, international non-governmental organizations, civil society organizations, development partners, the private sector, businesses, academia and professionals, political representatives and other relevant stakeholders. In addition, committees have been formed to coordinate across multiple administrative levels (e.g., division, district and subdistrict levels).

Sources: Min, 2023; UNSD, n.d.a.


Dren Pozhegu

The coordinating body should adopt an inclusive approach to carrying out its functions by ensuring adequate diverse representation from stakeholders, including civil society, academia and industry. The coordinating body may appoint expert teams, advisory bodies, working groups and other kinds of multi-stakeholder bodies to lead and support specific activities based on needs, skills and knowledge required. It should have the political and legal authority to carry out its responsibilities, which may include the following:

- Taking stock of and reviewing existing databases
- Determining data gaps and addressing them
- Establishing roles and responsibility for data monitoring and providing methodological and technical support to data collection teams
- Collecting and compiling data in a systematic manner[14] and facilitating efforts to improve disaggregation of data; for instance, to harmonize monitoring
- Synthesizing data, compiling reports and disseminating information to ensure that sufficiently disaggregated data is shared with stakeholders while following necessary data confidentiality and security procedures
- Providing oversight and coordinating reviews as needed and developing a process for continual improvement
- Building in quality checks and controls and validating data for use in policymaking and by stakeholders more widely
- Laying down institutional and organizational agreements for data-sharing
- Developing short- to mid-term budget requirements for monitoring, liaising and pursuing financial opportunities with domestic and international partners and allocating resources for various activities

14 See Cardoso (2019) for guidance on developing information systems for systematically collecting and reporting data related to climate action.

5.3 Organize a data collection process

Data collection entails identifying sources to obtain indicator data at the appropriate level of disaggregation using relevant data collection methods.

5.3.1 IDENTIFY DATA DISAGGREGATION CATEGORIES

The necessary level of disaggregation should be implicit in the indicator itself. For example, indicators such as the proportion of displaced workers supported by transition programmes (disaggregated by gender, age) or the population coverage of income support/other social

support instruments for those in fossil fuel–based industries (disaggregated by region) specify the desired disaggregation.

Some common categories of data disaggregation include gender; age; employment status; disability; education level; income level or above/below poverty threshold; type of household; urban versus rural; and level of governance, such as provincial, municipal, district or community. Data may also be disaggregated for non-population group-related metrics, such as by body of water (rivers or open water[15]) or type of ecosystem[16] (marine, terrestrial or freshwater; forests, wetlands, mountains or drylands).

Whereas national-level data can provide an overall picture and inform high-level policy decisions and resource allocation, regional data can help illuminate a region's economic strengths and weaknesses. It can point to the state of resource dependence, geographical distribution of costs and benefits, energy consumption patterns and changes in available jobs. Community-level data can reveal job displacement risks specific to distinct communities or their differences in access to clean energy. Data are also available from companies and industry associations. When locally disaggregated data are shared, CSOs can use the information to identify and advocate for the concerns of communities in just transition strategies. City-level data for indicators can offer insights into urban infrastructure and vulnerabilities and inform urban planning for sustainable transportation, energy-efficient buildings and waste management. Collecting sector-specific data (e.g., energy, manufacturing, agriculture) support targeted, sector-specific interventions. Data for a region's industrial sector can identify emissions hotspots and facilitate the adoption of sustainable, inclusive and equitable practices within industries.

Users can also develop a data disaggregation action plan that lays out how disaggregated data will be assessed and used to inform policies and resource allocation. For example, Statistics Canada developed a national data disaggregation plan with an end goal to produce detailed statistical information for the public, government and other data users that highlights the experiences and inequities experienced by specific population groups such as women and Indigenous Peoples (Statistics Canada, 2021).

Disaggregated data pertaining to social and economic status, quality of participation in various schemes and well-being may be obtained through surveys (by either conducting new surveys or reviewing existing ones) as well as administrative records, (Min, 2022; Molina, 2022). Sample household surveys can include questions to understand the participation of young people and adults in formal and non-formal education and training. Employment data can be disaggregated by abled versus disabled workers to understand whether people with disabilities are finding jobs at the same rate as the rest of the population (Min, 2022). Similarly, surveys covering small businesses could be supplemented with data on average monthly wages by gender to monitor gender-related differences (Min, 2023). Indicators on land and property can include a gender perspective by questioning who owns the land and makes decisions about its use.

Incorporating data disaggregation for categories not already being considered within a jurisdiction's statistical system or existing databases requires technical resources to conduct extensive surveys and can be quite costly. Multiple levels of disaggregation, such as data disaggregated by women of a certain Indigenous group and falling within a certain age range, can become even more challenging.

The coordinating body can establish obligations to incorporate data disaggregation within a jurisdiction's statistical processes and for institutions that are part of the national statistical system. Doing so can streamline disaggregation for select categories, as individual organizations may define these differently (e.g., the education ministry may collect data by learning outcomes only, whereas a ministry devoted to the development of women and children may need data by gender and age). This can make it difficult to consolidate or compare data.

15 SDG indicator 6.3.2: proportion of bodies with water with good ambient water quality (overall, rivers, open water bodies, groundwater).

16 SDG indicator 15.1.2: proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type.

The coordinating body can also provide guidance on levels of disaggregation in indicator metadata templates. They can constitute working groups to identify challenges and make recommendations for further disaggregation.

5.3.2 IDENTIFY DATA SOURCES

Users should identify primary or secondary data sources for individual indicators. Primary data is collected directly by the responsible authority or organization, and secondary data is collected by other organizations, often for purposes other than monitoring the policy of interest. It is important to first map existing data sources and databases that could be utilized for a given indicator and determine data gaps (e.g., data for the desired level of disaggregation may not be collected regularly). This exercise should begin at the time of indicator selection itself to find out whether data are already being collected for a given indicator, as this could influence whether the indicator is selected (see Section 4.2). Users should consider whether the existing data source is readily accessible and regularly updated; if not, they should determine how resource intensive it will be to do so. Based on the kind of data gaps that exist, users can decide whether additional resources should be used to collect new information. Table 5.1 provides some common sources.

Table 5.1 | **Common data sources**

Data sources	Examples
Existing data sets on economic indicators, employment data, environmental metrics, etc.	▪ Multi-topic household surveys conducted by national statistical offices and other agencies—often with technical support from international agencies (e.g., the World Bank, International Labour Organization [ILO], United Nations Human Settlements Programme)—or independently by national agencies (e.g., household income and expenditure surveys, demographic and health surveys, cost of living and food surveys, ILO national labour force surveys,[a] World Bank Living Standards Measurement Study[b]) ▪ Resource assessment data sets and documents (e.g., Food and Agriculture Organization Global Forest Resources Assessments,[c] regional forest resource assessments, national forest inventories) ▪ Environmental monitoring data, including geographic information systems (GIS), remote sensing or satellite earth observation data for green cover, land elevation data, sensor networks for fine particulate matter data, night-time lights data[d] for small areas to estimate poverty, spatial data on land-use changes, urban development and environmental conditions (e.g., Global Forest Watch, Forest Atlases, Atlas of Forest and Landscape Restoration Opportunities[e]) ▪ Administrative records such as land registries reported by national land institutions, civil registrations, population census, utility records, records from national line ministries and institutions (e.g., for water, sanitation, agriculture, natural resources and environment, health, public services, planning, housing, infrastructure, production, finance) ▪ Sustainable development indicators data set by country and by indicator[f]

Sources and Notes:
a. https://webapps.ilo.org/surveyLib/index.php/collections/LFS
b. https://www.worldbank.org/en/programs/lsms
c. https://www.fao.org/forest-resources-assessment/en/
d. https://www.earthdata.nasa.gov/topics/human-dimensions/nighttime-lights
e. https://www.globalforestwatch.org/; https://www.wri.org/initiatives/forest-atlases; https://www.wri.org/data/atlas-forest-and-landscape-restoration-opportunities
f. UNSD, n.d.b

Table 5.1 | **Common data sources, continued**

Data sources	Examples
Policy analysis and impact assessment studies to evaluate the effectiveness of policy measures and their impact on various regions and communities	▪ Vary from sector to sector and by region/country and could be from national, subnational and international organizations or from academics (e.g., for renewable energy impacts[g]). This data may not be updated though and may only represent information at a given point in time
Peer-reviewed literature	▪ Academic literature and research studies, though these may not always be regularly updated or country specific; data being compiled by universities and research institutions (such as analysis and studies on various just transition–related issues[h])
Industry and business data, market data, financial reports and investment data	▪ Industry-specific reports and surveys to gather data on the state of various sectors during the transition, labour market trends, job vacancies and skill requirements to understand workforce implications of transitions, investment trends (e.g., see World Benchmarking Alliance's Just Transition Assessment of 180 companies, including oil and gas companies, electric utilities and automotive manufacturers[i])
Non-traditional data sources, including from communities and citizens and new innovative data sources	▪ Citizen-generated data,[j] crowdsourcing data (e.g., the Chesapeake Bay Monitoring Project[k] in the United States trains volunteer citizens to collect water-quality data for the Chesapeake Bay watershed), social media and digital data (big data), data collected through web scraping

Sources and Notes:
g. Flochel and Gooptu, 2018; IRENA, 2023; IRENA and CEM, 2014; Karytsas, Mendrinos and Karytsas, 2020; Martinez and Komendantova, 2020
h. Bastos Lima, 2022; Kapoor and Green, 2022; Social Progress Imperative, n.d.; World Bank, n.d.; WRI, n.d.
i. World Benchmarking Alliance, 2021
j. See Jungcurt (2022) for examples of "citizen-generated data in action".
k. https://www.chesapeakemonitoringcoop.org/

5.4 Conduct data collection

Data collection methods range from informal and less structured (e.g., conversations and informal interviews with stakeholders) to formal and highly structured (e.g., censuses, assessment studies, structured interviews and surveys). Where available, users should employ established methodologies and standards and comply with applicable laws (e.g., privacy protection legislation, institutional review board standards, etc.) to collect data. They should use consistent, documented methods, sources and assumptions to allow for comparability against previous years' data or future targets. Any changes and improvements in methodologies and assumptions should also be properly documented for transparency and to avoid misinterpreting data. Users should also consider to what extent they can harmonize cycles of data collection across indicators; aligning timing can streamline processes and reduce overall resources needed to complete collection and analyses.

5.4.1 DEVELOP DATA COLLECTION TEMPLATES

The coordinating body can adopt several measures to ensure data quality. First, it can develop data collection templates for harmonization and consistency. Templates help ensure the data

collection process is standardized and hence promotes data quality. This is particularly so when multiple personnel, experts and community members are engaged in the data collection process. The coordinating body can also develop indicator metadata templates with information on the "what, where and how" for each indicator to further harmonize the data collection process (UNECE, 2013). This can be done by drawing on existing resources for indicators, such as the SDGs and Millennium Development Goals, where relevant. Table 5.2 includes some key elements included in the internationally agreed metadata template for one of the indicators (1.4.1) under SDG 1 (end poverty in all its forms everywhere).

5.4.2 COLLABORATE TO SHARE DATA AND BUILD CAPACITY

A robust data collection process requires collaboration across all levels of government. Having the legal authority and mandate to request data-sharing and collection can allow the coordinating body to facilitate institutional and organizational arrangements (e.g., letters of exchange and memoranda of understanding across ministries and other key partners). The coordinating body can enhance data quality by building capacity. Workshops can be organized to familiarize statistics producers and collection teams with indicator definitions, data sets and collection methods as well as to address data gaps. Data collection teams can be trained to submit data using digital forms. Further, the coordinating body can convene a statistics and data quality group to review and encourage the use of consistent definitions, methodologies, standards and protocols across departments and across data producers. Users should disclose their data sources and collection methods. Appendix B includes a sample template to summarize data for indicators pertaining to individual goals.

Improving statistics and data is an ongoing process that requires sufficient resources. Coordinating bodies can help secure buy-in from government leadership and key stakeholders, which can facilitate sustained flow of funds (e.g., through budgetary allocation of government funds as well as resources through development banks and funding organizations, impact investors and public-private partnerships).

The data collection process for just transition indicators also should be seen as an opportunity to continue strengthening engagement and community participation. There is value in integrating more diverse actors and incorporating different ways of gathering knowledge and information for policymaking (European Environment Agency, 2023).

Table 5.2 | **Select information in metadata template for SDG indicator 1.4.1**

Title	Illlustrative description
Indicator name	Proportion of population living in households with access to basic services
Definition	The percentage of the population residing in households with access to basic services is determined by the percentage of population utilizing public service provision systems that meet basic human needs, including clean drinking water, sanitation, hygiene, energy, transportation, waste collection, healthcare, education and information technologies.
Rationale	Governments are responsible for providing the basic services that enhance living standards and quality of life. The purpose of this indicator is to assess the accessibility to basic services and direct efforts towards their equitable provision, contributing to the eradication of poverty.
Data sources	Sources include censuses, household surveys and administrative data. Other data sets could also be used, such as compilations by international or regional initiatives,[a] studies conducted by research institutes or technical advice received during country consultations.
Data providers	Providers include national statistical offices and relevant ministries (e.g., ministries of water, health, education and environment) with support from the United Nations Human Settlements Programme and other agencies (e.g., the Joint Monitoring Programme for water supply, sanitation and hygiene by the World Health Organization/United Nations Children's Fund; United Nations Environment Programme; World Bank; African Development Bank; International Development Bank; European Bank for Reconstruction and Development; and Asian Development Bank) as well as bilateral donors (Japan International Cooperation Agency, German Agency for International Cooperation, etc.).
Disaggregation	Disaggregation by geographic location (urban/rural, subnational region, etc.) and by socioeconomic characteristics (wealth, education, ethnicity, etc.) is possible.
Limitations and treatment of missing values	Data are limited, and challenges include limited capacities in data management, data collection and monitoring.
Validation	National authorities are consulted on the estimates generated from national data sources through the country consultation process.

Source: UNSD, n.d.c
Notes: Millennium Development Goals have a similar resource for their indicators (https://databank.worldbank.org/data/embed/Millennium-Development-Goals/id/57d9407c).
a. For example, Eurostat (https://ec.europa.eu/eurostat/data/database).

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6. Analyse data

6. Analyse data

Analysing data is critical to monitoring changes that may occur while implementing transition strategies and policies. Doing so improves learning and can provide relevant information on just transition–related indicators to guide future policy decisions. This chapter provides recommendations for different ways to analyse collected data while considering objectives and resources.

Box 6.1 | **List of key steps**

- Assess trends and track changes, applying consistent assumptions and methods.
- Document sources and methods to ensure transparency and avoid misinterpretation.
- Where feasible, learn from and evaluate results to inform policies.

6.1 Assess trends and analyse changes

Once data collection methods are in place and sufficient indicator information has been gathered, users can start to review and analyse the data collected to determine the state of the transition, assess changes over time, reveal trends and determine progress (Figure 6.1). Data analysis can be performed by technical experts within government, a designated monitoring and evaluation team or by a third party or other external stakeholders. Different types of analysis will entail varying levels of effort, time and resources. Users should carefully consider how they would like to apply the data gathered for different kinds of analysis. Depending on a user's objectives, indicator data can feed into different kinds of analyses:

- **Trend analysis:** Includes determining trends, patterns and anomalies.
- **Tracking progress:** Refers to assessing progress against historical data or towards future targets.
- **Analysis using indices:** Summarizes information from several indicators into a single value to compare performance over time and across subnational regions and countries.

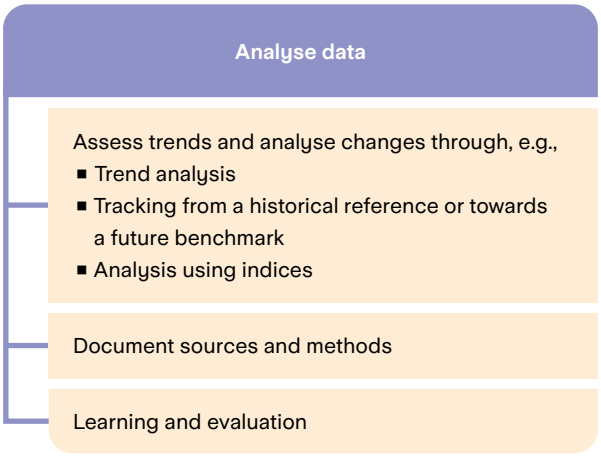
6.1.1 TREND ANALYSIS

A simple trend analysis can reveal the current state and direction of change (e.g., growing or decreasing forested land area, falling or rising poverty rates, etc.). Indicator data for a single year tell an indicator's current status and can be used to understand existing conditions for a just transition and to establish baselines for future assessments. Identifying trends, however, takes a longer, depending on the indicator. Pairing such analysis over the long-term with policy impact assessment(s) can help decision makers better understand outcomes. Users should collect indicator data over multiple years to identify trends that highlight the direction and pace of change. Users may also observe a positive or negative correlation between two indicators that can be further examined with additional analysis to help uncover potential underlying factors. With stakeholders, users can also discuss and develop an ideal/desirable trend line to help determine how indicators should be evolving over time and how far an indicator could deviate from agreed values before needing course correction. To illustrate change over time, Box 6.2 provides an example of a basic analysis using a single indicator with data collected over several years.

Indicators can point to how conditions are changing over time, but it is not possible to directly attribute identified changes to any specific policy or external factor without further analysis; this is because multiple issues may be driving the change. To attribute changes to policies, users must conduct a policy impact assessment and model a scenario's potential impact on employment by sector, economic growth or other indicator (see Chapters 1 and 4). Users who want to understand

cause and attribution should use this guide in combination with other complementary guides (e.g., the ICAT *Sustainable Development Methodology* or Greenhouse Gas Protocol *Policy and Action Standard*) to connect impacts with specific policies. The results of a policy impact assessment could be used with tracking for a comprehensive discussion of specific interventions and their impacts, along with an overview of performance with regards to a just transition.

Figure 6.1 | **Steps to analyse data**



6.1.2 TRACKING PROGRESS

Users can examine indicators alongside a historical reference point (backward-looking analysis) or a future target to be achieved (forward-looking analysis).

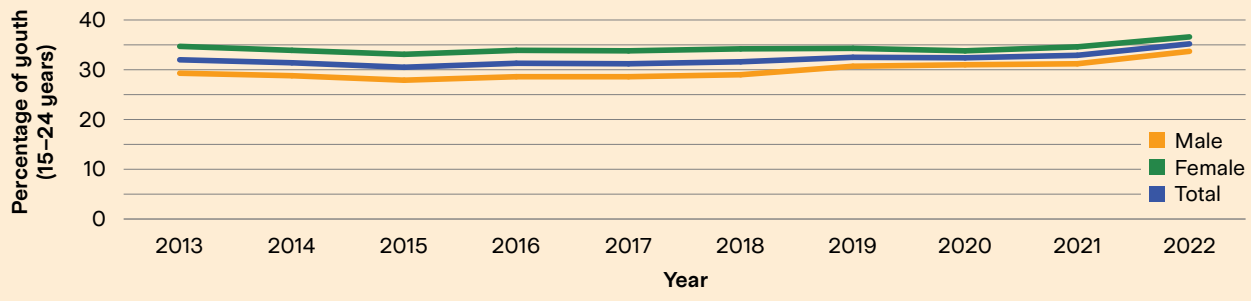
Backward-looking analysis: Users may compare an indicator's current value against a historical reference value to show whether the indicator value increases or decreases, signalling progress (or lack thereof). Because data are collected regularly, the change in value (increase or decrease) will demonstrate the level of progress—but not attribution—towards the just transition. For

Box 6.2 | **Trend analysis with indicators**

As part of South Africa's *Sustainable Development Goals: Country Report 2023*, the government considered data on 175 indicators.[a] For one of these goals, "decent work and economic growth" (which promotes sustained, inclusive and sustainable economic growth; full and productive employment; and decent work for all), the country monitors the proportion of South African youth who are not in education, employment, or training (NEET), among other indicators.[b] Figure 6.2 shows that the percentage of South Africa's NEET youth has remained relatively constant. This can be compared with regional data; for example, for 2022, South Africa's percentage (35.2 per cent) is higher than sub-Saharan Africa's (25.7 per cent).[c] Data analysis can draw attention to such disparities and create support for specific policies to improve youth education and employment.

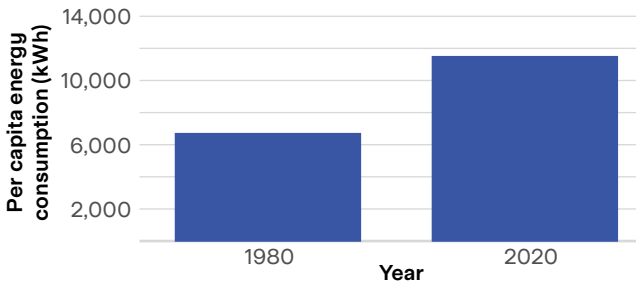
Sources:
a. Statistics South Africa, 2023
b. Statistics South Africa, 2019
c. ILO, 2023

Figure 6.2 | **South Africa's NEET youth (15–24 years) (per cent)**



Source: Statistics South Africa, 2023.

Figure 6.3 | **Backward-looking analysis of Costa Rica's per capita energy consumption**



Source: Ritchie and Roser, 2023.
Note: These figures reflect energy consumption that is the sum of all energy uses, including electricity, transport and heating.

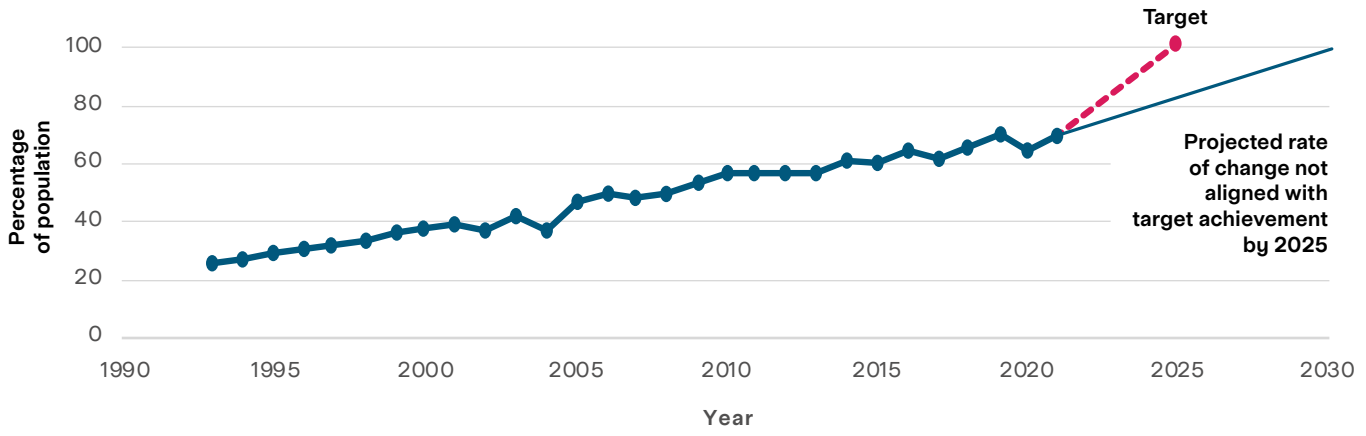
instance, a backward-looking analysis of Costa Rica's per capita energy consumption shows that energy consumption has nearly doubled over the last 40 years (Figure 6.3).

Forward-looking analysis: Users can measure how far an indicator is from future targets and if the distance is increasing or decreasing. In Chapter 4, users determined specific indicators to monitor progress towards the transition, such as volume of lending for small and medium-sized enterprises (in US dollars) or share of households without electricity. Users can determine overall positive movement towards a just transition by tracking the change in an indicator's value and level of progress towards a related target. For example, users can monitor the share of households without electricity towards a target of 100 per cent household electrification by 2040. Over time, users would want to see a narrowing of the difference between the indicator's value in a specific year and the target.

The rate of progress towards the target is also important. If the pace is too slow, the indicator value may not reach the target value by the target year, despite a net change over time. This is where interim milestones help—they provide early signs of challenges and weak growth.

Users can also draw a projected trend line that forecasts into the future based on the average historical trend, thus combining forward- and backward-looking analysis. An example is presented in Figure 6.4, which shows the percentage of the Senegalese population with access to electricity. This is one of the indicators

Figure 6.4 | **Senegalese population with access to electricity**



Sources: IEA, n.d.a; World Bank Group, n.d.b.
Note: The projected trend lines are purely illustrative and have not been modelled.

Senegal monitors for its goal of achieving universal electricity access by 2025. As the figure illustrates, the historical trend likely needs to be accelerated to achieve the 2025 target. Users can also discuss trends across multiple indicators or levels of disaggregation to provide additional analysis. For example, access to electricity among urban versus rural populations, access to electricity along with quality of access in terms of reliability and kind of appliances that can be used.

Tracking progress towards a target may not always be as straightforward. Tracking can be difficult if an indicator's rate of change is—or is expected to be—non-linear. Indicators related to the adoption of new technologies may not follow a linear path (Schumer et al., 2022). In such cases, assumptions are needed regarding the future rate of change to assess progress towards the target. Further, the goals and objectives of a just transition may shift with time. Contexts and circumstances may change, and new goals may be introduced to address unanticipated concerns. These changes may require targets to be revisited to ensure they remain relevant.

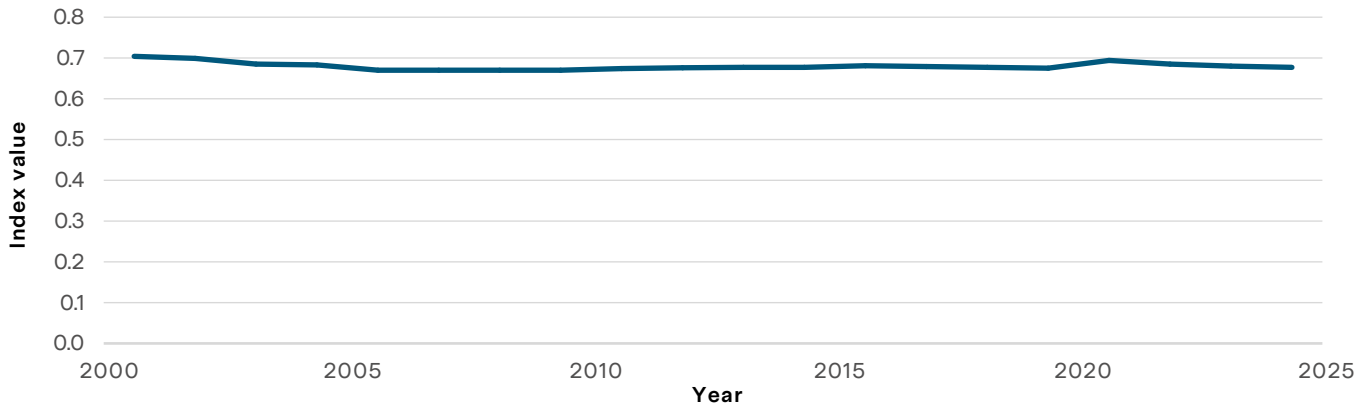
6.1.3 ANALYSIS USING INDICES

In addition to analysing individual indicators, users can form composite indices by assessing clusters of indicators to derive a single value. The index value represents the result of changes in several indicator values. Users can adapt existing indices or develop new ones with experts and stakeholders.[17] For example, the United Nations Development Programme combines several indicators—such as the maternal mortality ratio, higher education attainment levels and women's participation in the workforce—to generate a gender inequality score at the country level. Called the Gender Inequality Index (GII), it reflects gender disparities in health, empowerment and the labour market (UNDP, 2024). Figure 6.5 shows Nigeria's GII score, illustrating overall progress around gender equality.

Although using an index adds complexity to the analysis, it can help to communicate results and promote active engagement with policymakers and other key stakeholders. Not all stakeholders will have the time or the ability to review individual indicators, so indices can simplify and increase accessibility of the results. It is important to note, however, that the choice of underlying indicators affects the quality of an index, and changes in an index's value could be due to changes in one or more underlying indicators. In addition to a summary measure represented by the index value, users can include underlying indicators so that decision-makers and others have a

17 Guidance for developing composite indices is outside the scope of this guide. For more information, see OECD, European Union and JRC (2008).

Figure 6.5 | **GII index value for Nigeria**



Sources: IEA, n.d.a; World Bank Group, n.d.b.
Note: The projected trend lines are purely illustrative and have not been modelled.

nuanced understanding of the direction of change (Berik, 2022). Users should document the index methodology to facilitate a better understanding of indices and ensure transparency.

More complex analysis is likely to require greater human resources. Data analysts and experts, such as demographers, statisticians, economists and socio-anthropologists, may be needed to help design data collection efforts and process and analyse the collected data to generate actionable insights into achieving a just transition. Users may also explore collaborations with trusted academic and research institutions or CSOs to share collected data and conduct analyses based on their expertise. The additional effort required should be weighed against other competing demands on resources. More rigorous assessments also can be integrated over time once an initial tracking framework is in place.

6.1.4 LEARNING AND EVALUATION

Users can draw upon the analysis results to inform policy recommendations and adjust existing climate programmes and policies being monitored. For example, the results can act as input for updating NDCs to better reflect just transition priorities. These results can inform new interventions, such as strengthening reskilling programmes, increasing energy access and improving procedural aspects. They also can help identify funding and resource needs and provide recommendations about where funds should be allocated to maximize positive outcomes. During the transition, users can conduct a systematic assessment of the changes monitored to evaluate progress. Monitoring and analysing data provide the basis for learning and evaluation. Interpreting lessons and insights from observed trends can help facilitate understanding of the contributing factors. However, further targeted data collection may be needed to draw accurate, meaningful conclusions about the performance of transition policies and their effectiveness and impact and to leverage these lessons for future policies. The emphasis of this guide is on monitoring; it does not address the evaluation of policies for their just transition impact. Users are encouraged to consult the ICAT *Sustainable Development Methodology* (2020b, Chapter 14) for an overview of approaches for applying the results of monitoring to decision-making.

UNEP / Annie Spratt

7. Communicate and report results

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Sharing information with decision makers and stakeholders informs future policymaking, improves accountability and enhances transparency. This chapter discusses how to communicate and report the monitoring results. Users should determine their target audience and tailor their communications accordingly.

7.1 Communicating results

The final step in tracking is to communicate monitoring results and analysis. By communicating and reporting results, users can facilitate accountability and lesson sharing and inform future policy decisions, particularly when progress is off-track. Users promote transparency when they publicly communicate progress and reaffirm commitments to stated goals and targets. When accompanied by modifications to the implementation of transition policies (if needed), reporting may strengthen the confidence and trust of stakeholders, such as communities and investors. Reporting is also a practical tool to engage the public and help stakeholders keep policymakers accountable; it may also inform political campaigns, fundraising strategies, advocacy and strategic initiatives by CSOs and others. The value of reporting becomes more apparent over time as data are collected for several years and a longer series of results and trends becomes available.

Users should consider three key aspects for communicating results (Figure 7.1):

Box 7.1 | **List of key steps**

- Identify the target audience.
- Determine the specific information to be communicated, including information to track and report progress.
- Determine the format and frequency of reporting and communicating to audiences and consider other factors (e.g., capacity constraints, key decision-making opportunities).

- *Who* is the target audience? This can include members within the government or key stakeholders outside the government who should receive information or a domestic versus international audience.
- *What* specific information does each stakeholder group need and why? Policymakers may be more interested in receiving detailed reports on indicators and analysis. Impacted community groups may be more interested in learning how certain decisions were made, who was involved and the broader changes occurring.
- *How* should results be communicated? Distinct formats may be needed for individual stakeholder groups, and reporting frequency may also differ based on the audience.

Kuala Lumpur, Malaysia, provides an example of how reporting could vary for different audiences, as illustrated through its climate action planning reporting framework (Kuala Lumpur City Hall, 2021) (Table 7.1).

7.1.1 IDENTIFY THE TARGET AUDIENCE

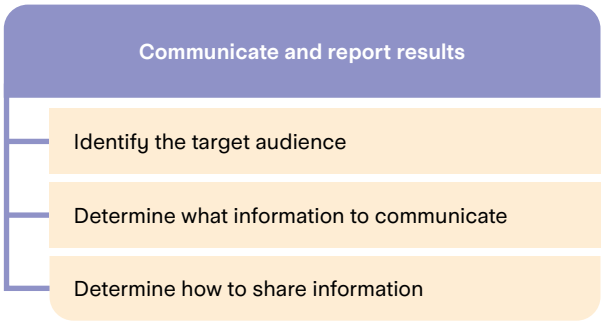
Users should determine their target audience and which stakeholder groups should be informed of monitoring results. Part of identifying target audiences is also understanding their role, what they should know about the analysis and how the

Table 7.1 | **Outline of Kuala Lumpur's climate action planning reporting framework**

Stakeholder audiences	Mayoral team	Kuala Lumpur City Hall departments	Non-governmental stakeholders	Citizens
What do they need?	▪ Progress ▪ Outcomes ▪ Cost-benefit ratios	▪ Progress ▪ Outputs ▪ Outcomes ▪ Cost-benefit ratios	▪ Outputs ▪ Outcomes ▪ Impacts ▪ Risk reduction information	▪ Risk reduction information ▪ Impacts ▪ Future scenarios
Why do they need to know this?	▪ Accountability ▪ Decision-making and planning ▪ Resource allocation ▪ Policymaking for climate action	▪ Accountability ▪ Progress reporting ▪ Resource allocation ▪ Basis for partnerships and synergies	▪ Reporting ▪ Basis for funding requests ▪ Basis for partner-ships and synergies	▪ Accountability ▪ Awareness-raising ▪ Education ▪ Behavioural change
Communication methods	▪ Executive summaries ▪ Graphs/data tables ▪ Cost-benefit ratios ▪ KPI achievement per cent	▪ Infographics ▪ Scenario and climate modelling summaries ▪ Executive summaries	▪ Infographics ▪ Scenario and climate modelling summaries ▪ Executive summaries	▪ Social media ▪ Infographics
How often?	Monthly/project based	Quarterly/monthly/ project based	Quarterly/ongoing	Quarterly/ongoing

Source: Kuala Lumpur City Hall, 2021.
Abbreviation: KPI, key performance indicator.

Figure 7.1 | **Steps to communicate and report results**



information may be of benefit to them or used in their decision-making processes. Data processes may be revised and expanded as target audiences provide feedback on the usefulness of results. Users can report on indicators for their domestic audience, including to those in government agencies and departments as well as to other domestic stakeholders, such as communities and CSOs. Reporting within government fosters institutional learning and collaboration across teams and agencies. Regular attention to reported results can help ensure that just transition issues remain a political priority. Documenting and reporting results to a government audience supports accountability and shared responsibility for whole-of-government implementation and can help inform future policy decisions. Communicating results to the public

facilitates transparency, demonstrates political commitment and can foster greater trust and confidence in government. This may also support outreach and engagement with key stakeholders to bring them into the process.

Users can also provide information to audiences outside the country (e.g., the United Nations Framework Convention on Climate Change secretariat, international funders, investors). Nations are increasingly sharing information externally about their just transition plans, although they are not yet tracking their implementation. Seventy-two countries explicitly mention a just transition in their NDCs (Fransen et al., 2023). A few countries, including Costa Rica, South Africa and Antigua and Barbuda, have included significant information on just transitions in their NDCs (Fransen et al., 2022); 25 out of 43 Annex I Parties have reported on the economic and social consequences of response measures in their 2021 biennial reporting (UNFCCC, 2022a). Increasingly, similar information may be shared in countries' future BTRs to align with reporting requirements identified through modalities, procedures and guidelines under the ETF (UNFCCC, 2022c). For example, Table 12 of the common tabular format of BTRs shares information about how to track the progress of domestic policies to address the social and economic consequences of response measures (Kiconco, 2024). Communicating information on just transition efforts and indicators could be incorporated into reports on NDC implementation for a national audience as well as internationally (through BTRs).

7.1.2 DETERMINE WHAT INFORMATION NEEDS TO BE COMMUNICATED AND REPORT RESULTS

Users should consider the information needs of different audience groups to decide what specific information to communicate. Analysts may use raw data to evaluate changes, drivers and barriers and to identify and share lessons learned and best practices. Indicator analysis, trends and related recommendations may be shared formally with policymakers to inform actions and informally with secondary target audiences for informational purposes. Public-facing national reports may highlight progress and achievements while also identifying opportunities for improvement. They also can provide a strong evidence base to adjust strategies to better achieve long-term goals. Users should track and communicate progress towards targets. This includes communicating information for social, economic and environmental indicators that have been developed with a justice lens. Therefore, users should communicate information related to stakeholder engagement as well as information disaggregated by various demographic groups—such as women, youth and other vulnerable groups—or by geographical area. Aggregated data on indicators could include installed renewable energy, land area reforested, volume of funding towards social protection benefits, reskilling programmes and full-time employment. Users can also document how stakeholder participation may have enhanced overall results to further promote transparency and strengthen community engagement.

Table 7.2 outlines information for each step in this guide that may be useful when communicating to different audiences.

Additionally, users may find it helpful to report on lessons learned, such as how to strengthen stakeholder and community engagement in tracking, opportunities for improvement, challenges and whether greater engagement influenced progress towards the overall outcomes.

Table 7.2 | **Recommended information to communicate on progress towards a just transition**

Category of information	Process-related details for transparency	Technical information on the just transition tracking framework and progress
Goals or priorities	▪ Identity and number of stakeholder groups involved in defining goals or priorities and their roles ▪ Process followed to define goals or priorities ▪ Role stakeholders played in validating goals or priorities	▪ Goals or priorities developed
Targets and Indicators	▪ How targets were created ▪ How indicators are organized ▪ Process followed to determine indicators, particularly those relevant to justice ▪ How selected indicators represent or reflect targets for goals or priorities	▪ Targets and interim milestones created ▪ Selection of indicators across social, economic, environmental and justice dimensions ▪ Connection of indicators to goals or priorities and to targets
Data collection	▪ Agencies responsible for data collection ▪ Scope, roles and responsibilities of coordination and data collection agencies ▪ Role and participation of key stakeholders in data collection and coordination ▪ How data will be stored and shared across agencies ▪ How existing data sets may be built upon	▪ Data disaggregation categories and data sources ▪ Calculation methods and assumptions ▪ Reporting standards and protocols to be used ▪ Data collection template to be used ▪ Any methodologies or assumptions to be applied to process and collate data
Analysis	▪ How data is analysed and how methodologies were developed ▪ Responsible entities and processes for monitoring ▪ Responsible entities and processes to verify data and results	▪ Methodologies used to track progress ▪ Assessment of results related to goals, targets and indicators ▪ Policy recommendations

7.1.3 DETERMINE THE BEST FORMAT TO SHARE INFORMATION

Once users have determined their target audiences and what should be communicated, they should then determine the most appropriate reporting format.

Users may consider communicating results though reports, which can take different forms and include summaries and key messages for a high-level political audience and the public. They can provide formal annual reports of trends and analyses for technical experts and government ministries and agencies. The use of reporting templates and formats can help streamline the reporting process and offer consistency, and publishing in local languages can make these reports more accessible. Alternatively, collated data tables or raw data on just transition indicators can be published online or through public platforms. This can enable an external audience to conduct their own analyses and assessments.

The use of data platforms or dedicated websites with data repositories can further provide easy access to information on indicators and targets, support data visualization and analysis by multiple stakeholders and complement periodic reports. For example, the Global SDG Indicators Data

Platform includes a global indicators database as well as annual reports to inform policy and ensure accountability of all stakeholders (Table 7.3) (UNSD, n.d.d). The annual reports assess SDGs based on the latest data, highlighting gaps and areas for action. Another example is South Africa's PCC, which has established a dedicated webpage on monitoring, evaluation and learning as it develops a tracking system.[18] The monitoring, evaluation and tracking will help the public understand how the jurisdiction is faring with regards to climate change and the just transition, highlighting the bright spots and noting where course corrections are needed to support the outcomes of South Africa's Just Transition Framework (PCC, n.d.).

A user engagement strategy may feature planned communication activities, which can include consultation workshops/meetings with stakeholders from the private sector, CSOs, media and government agencies. Such a strategy could also include advance announcements about when reports are released or a series of data literacy workshops at all decision-making levels and with communities. Surveys may be conducted to assess whether users are satisfied with the availability and quality of data and the user friendliness of the indicator dashboard/monitoring platform. Users can also hold public forums and webinars where representatives from ministries or stakeholder groups can present their analyses and facilitate discussions around the data analysis and key recommendations. They can utilize the evidence-based and data-backed insights to collaborate with sector ministries and advocate for modifications in policies to better support just transitions.

When deciding on reporting frequency, users should consider what is practical given capacity constraints, how often data is collected and the timing of key decision-making opportunities. To the extent possible, information should be shared within the wider national data disclosure, transparency and accountability ecosystem so that results can feed into established decision-making processes. For example, users could publish an annual progress report ahead of the national budgetary cycle, align it with national development planning or publish every five years in line with the NDC update and enhancement process to inform those decision-making moments.

18 https://www.climatecommission.org.za/monitoring-evaluation-learning

Table 7.3 | **The Global SDG Indicators Data Platform**

Key elements related to SDG indicator monitoring on the Global SDG Indicators Data Platform
Headline information on SDGs, targets, events, publications, actions
Annual reports on implementation progress
Reports by an independent group of scientists every four years to inform the SDG review process
Country profiles to track progress
Harmonized metadata templates for each indicator containing reference information (e.g., goal, targets, indicators, definitions and concepts, data sources and data collection methods, data collection calendar and data release calendar, data providers, data compilers, rationale and limitations, data adjustments, related indicators, responsible organizations, etc.)
Process of data collection and focal points
Lessons learned and best practices

Source: UNSD, n.d.d.

Abbreviation: SDG, Sustainable Development Goal.

Raimond Klavins /Unsplash

Appendices

Appendix A: Definitions of "just transition"

With the evolution of the just transition concept (see Figure A.1), and given its vast scope, multiple definitions exist for "just transition". They represent a range of perspectives that are influenced by different contexts and circumstances. The table below includes some commonly referenced explanations of the term. Similarly, there are different approaches that are seen to realize a just transition in practice. In some cases, the emphasis may be on altering certain rules and arrangements within existing systems (e.g., instituting skills development and training programmes; developing early retirement programmes; putting in place occupational, safety and health measures; and ensuring social protections) (CSIS and CIF, 2021; Pinker, 2020). In other instances, a just transition may involve modifying certain aspects of existing systems, such as converting a privately owned energy company to a public or worker-owned utility that features democratic participation and decision-making (CSIS and CIF, 2021; Pinker, 2020). Further still, some approaches may seek to radically overhaul the existing system by addressing economic inequality and environmental justice by decentralizing current power structures, employing democratic and community-led decisions and placing the highest priority on social well-being, health and safety (CSIS and CIF, 2021; Pinker, 2020). In fact, "just transitions" in plural acknowledges these distinct interpretations and approaches, encompassing a range of justices, principles and practices, as well as multiple social, economic and technological pathways that exist for a Paris-aligned transformation (CIF, 2021; Robins and Rydge, 2019).

Table A.1 | **Various definitions of "just transition"**

Intergovernmental Panel on Climate Change: "[A just transition] emphasizes the key principles of respect and dignity for vulnerable groups, the creation of decent jobs, social protection, employment rights, fairness in energy access and use and social dialogue and democratic consultation with relevant stakeholders, whilst coping with the effects of asset-stranding and the transition to green and clean economies. Accelerating the transition to sustainability will be enabled by explicit consideration being given to the principles of justice, equality and fairness."[a]
Climate Justice Alliance: "Just Transition is a vision-led, unifying and place-based set of principles, processes and practices that build economic and political power to shift from an extractive economy to a regenerative economy. This means approaching production and consumption cycles holistically and waste-free. The transition itself must be just and equitable; redressing past harms and creating new relationships of power for the future through reparations. If the process of transition is not just, the outcome will never be. Just Transition describes both where we are going and how we get there."[b]
Just Transition Alliance: "Just Transition is a principle, a process and a practice. The principle of just transition is that a healthy economy and a clean environment can and should co-exist. The process for achieving this vision should be a fair one that should not cost workers or community residents their health, environment, jobs, or economic assets. Any losses should be fairly compensated. And the practice of just transition means that the people who are most affected by pollution—the frontline workers and the fenceline communities—should be in the leadership of crafting policy solutions."[c]
International Trade Union Confederation: "A Just Transition secures the future and livelihoods of workers and their communities in the transition to a low-carbon economy. It is based on social dialogue between workers and their unions, employers and government and consultation with communities and civil society. A plan for Just Transition provides and guarantees better and decent jobs, social protection, more training opportunities and greater job security for all workers affected by global warming and climate change policies."[d]
International Labour Organization: "A Just Transition means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind. A Just Transition involves maximizing the social and economic opportunities of climate action, while minimizing and carefully managing any challenges—including through effective social dialogue among all groups impacted and respect for fundamental labour principles and rights."[e]
IndustriALL Global Union: "Just Transition refers to a fair and equitable pathway to a sustainable future. A Just Transition requires an array of programmes that will provide an optimistic future for all workers, especially for those in industries that may be impacted by efforts to limit greenhouse gases or by the introduction of new technologies. A Just Transition programme is meant to be an all-encompassing, flexible and integrated approach to helping workers, their families and their communities. Just Transition requires reimagining the entire economic system, not simply handing the keys to the decarbonisation efforts to global corporations seeking to continue maximizing profits over the interests of workers and their communities."[f]

Table A.1 | **Various definitions of "just transition," continued**

United Nations Framework Convention on Climate Change: "[A transition that] contribute(s) to the goals of decent work for all, social inclusion and the eradication of poverty."[g]
United Nations Framework Convention on Climate Change states that just transitions should promote sustainable development, eradication of poverty and the creation of decent work and quality jobs. They should encompass pathways that include energy, socioeconomic, workforce and other dimensions, all of which must be based on nationally defined development priorities and include social protection so as to mitigate potential impacts associated with the transition. They should include inclusive and participatory approaches, social dialogue, social protection and the recognition of labour rights.[h]

Sources:

a. Denton et al., 2022

b. Climate Justice Alliance, n.d.

c. Just Transition Alliance, n.d.

d. International Trade Union Confederation, n.d.

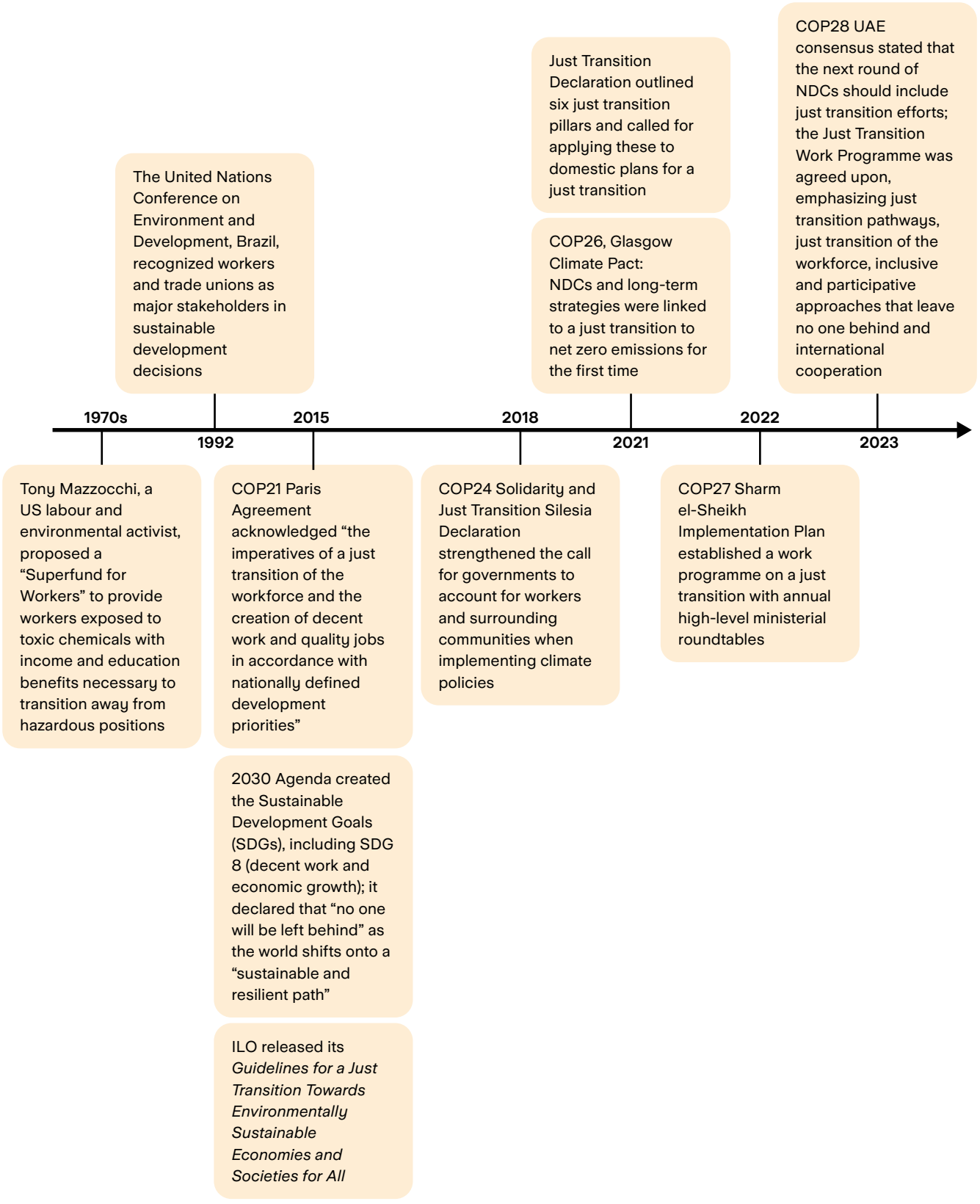
e. ILO, 2021

f. Tasini, 2022

g. UNFCCC, 2015

h. UNFCCC, 2023

Figure A.1 | **Key moments for just transition at the global level**



Sources: Fransen, Ross and Srouji, 2022; Jenkins, 2019; UK COP Presidency, 2021; UNFCCC, 2015, 2022d, 2023; Waskow et al., 2023.
Abbreviations: COP, Conference of the Parties; NDC, nationally determined contribution; UAE, United Arab Emirates.

Appendix B: Data template

Table B.1 is an example of a template to summarize monitoring data. In this example, the indicators being monitored pertain to social support programmes for vulnerable households and groups, such as elderly or disabled people, students and low-income families.

Table B.1 | **Data summary template for indicators pertaining to just transition goals**

Transition support programmes: Indicators	Unit	Baseline value/ historical data, year (unit)	Data source	Target value and year, where applicable (unit)	Value in year 1 (unit)	Value in year 2 (unit) *add more years as needed*
Population coverage of social protection schemes (national)	Per cent of total population	4 (2020)	Department of Social Welfare (DSW) administrative records	10 (2030)	4	4.5
By social protection programme (cash transfer programme to households)	Per cent of households	3.5 (2020)		8 (2030)	3.5	3.6
By social protection programme (transportation subsidy to individuals)	Per cent of total population	0.5 (2020)		5 (2030)	0.6	1
By household income—below USD 6,000 per year	Per cent of households	0.5 (2020)		10 (2020)	0.5	0.8
Time taken to grant approval to access social protection programmes (average time)	Weeks	9.5 (2020)	DSW administrative records	2 (2025)	7.5	7.5
By social protection programme (cash transfer to households)	Weeks	10 (2020)		2 (2025)	10	9.5
By social protection programme (transportation subsidy to individuals)	Weeks	9 (2020)		2 (2025)	8	8
Amount of government spending on social protection schemes (disaggregated by programmes)	Millions, USD	10 (2021)	Annual budget for DSW	30 (2025)	5	8
By social protection programme (cash transfer to households)	Millions, USD	8 (2021)		21 (2025)	3.5	6
By social protection programme (transportation subsidy to individuals)	Millions, USD	2 (2021)		9 (2025)	1.5	2

Source: Adapted from European Commission (2023).
Abbreviation: USD, US dollars.

Appendix C: Case studies

During 2022–24, ICAT supported the development of just transition monitoring frameworks in Nigeria and South Africa. The two projects were implemented in parallel with the development of this guide with the explicit goal to allow for mutual exchange and cross-pollination of ideas throughout the process. This appendix briefly outlines the main steps these national projects followed to monitor their transitions. Users can find project reports and related outputs on the ICAT website.[19]

19 For Nigeria, see https://climateactiontransparency.org/country/nigeria/. For South Africa, see https://climateactiontransparency.org/country/south-africa/.

Just and Gender-Inclusive Transition framework for Nigeria

The project team in Nigeria led the development of the Just and Gender-Inclusive Transition (JGIT) Monitoring, Reporting and Verification (MRV) Framework for the Federal Ministry of Labour and Employment's input, review and endorsement (ICAT, 2024a). The JGIT MRV Framework focuses on two major greenhouse gas–emitting sectors in Nigeria: the oil and gas sector and the agriculture sector. Agriculture contributes 21 per cent of Nigeria's GDP and employs 70 per cent of the workforce, and the oil and gas sector is a major source of revenue and foreign exchange (Tarfa et al., 2024a).

The JGIT MRV Framework seeks to monitor whether the benefits of climate action are equitably distributed among various societal groups, with a focus on vulnerable populations such as women, youth, Indigenous communities and persons with disabilities. Some of the key steps in developing the JGIT MRV Framework are shown in Figure C.1.

Figure C.1 | **Developing a framework for just transition monitoring in Nigeria**

Stakeholder mapping	Identify goals of just and gender-inclusive transition	Conduct policy impact assessment	Identify indicators	Develop MRV framework	Develop implementation plan
■ Identify labour and trade unions, private sector entities, multilateral organizations, CSOs, research institutions and universities, government ministries and departments	■ Review existing aims and objectives in policies ■ Consult stake-holders ■ Adopt relevant goals from existing national policies	■ Identify key policies ■ Assess social, economic and environmental impacts for select policies ■ Consult stake-holders	■ Social, economic and environmental indicators ■ Recommend monitoring frequency ■ Incorporate stakeholder feedback	■ Describe the tracking methodology ■ Outline theory of change	■ Lay out operational details (e.g., roles and responsibilities for data collection, processing and monitoring)

Sources: Tarfa et al., 2024b.
Abbreviations: CSO, civil society organization; MRV, monitoring, reporting and verification.

The first step in developing the framework was to map key stakeholders, such as policymakers, civil society, trade unions, vulnerable groups and businesses. Stakeholders were then informed about what was being planned, and their input was sought. From each sector (oil and gas and agriculture), a set of policies were identified that influence and define how the transition may unfold, such as the Energy Transition Plan and the National Forestry Policy. The team then carried out a systematic review of existing aims, objectives and definitions in the identified set of policies relevant for JGIT in Nigeria. They also interviewed and surveyed stakeholders to determine their priorities for a JGIT to integrate them into the framework.

Based on input from government representatives and non-governmental stakeholders, the framework was designed to align with national climate goals, including those outlined in the country's NDC,[20] LT-LEDS,[21] Climate Change Act[22] and Energy Transition Plan.[23] Although the term "just transition" is not explicitly noted in these policies, their stated goals and targets signal a shift and are relevant for a just transition. These included, for example, lifting millions of Nigerians out of poverty, driving economic growth and bringing modern energy services to the whole population, as stated in the Energy Transition Plan.

Policy impact assessments were conducted using the ICAT Sustainable Development Methodology to map the social, economic and environmental impacts of relevant oil and gas and agricultural policies. Indicators were identified to track the just transition–related impacts of policies, including the percentage of households connected to the electricity grid or off-grid systems (measured annually) and average frequency and duration of power outages experienced by households and businesses within oil and gas operational areas (measured in hours per year). A stakeholder workshop was organized to consult and seek feedback on the selection of indicators.

The project also developed an implementation road map that discussed existing data sources and included suggestions for addressing data gaps and roles and responsibilities for data collection, monitoring and quality assurance. The road map also recommended communicating results to stakeholders through continued engagement in the form of consultations, workshops, webinars and so forth.

Just Transition Monitoring, Evaluation and Learning Framework for South Africa

In South Africa, ICAT supported the development of the Just Transition Monitoring, Evaluation and Learning (JT MEL) Framework to complement South Africa's Just Transition Framework and track social, economic and environmental indicators as climate policies are implemented (ICAT, 2024b). The Just Transition Framework identified four key at-risk sectors, including the coal sector, auto sector, agriculture and tourism. The JT MEL framework is envisioned to support policy makers in monitoring both the national and subnational progress towards the just transition and the impacts to the key at-risk sectors; it also will assist them in making informed decisions.

Similar to the project in Nigeria, the team in South Africa conducted a literature review and identified key stakeholders to inform the development of the framework. In addition, the team drafted a set of principles to guide the development of the JT MEL Framework:

- **Complementary and bounded:** Where possible use existing tracking and MEL efforts to avoid duplication and ensure coordination and alignment.
- **Socially-owned framework:** Involve all partners in development to ensure social ownership, relevance and adaptability.

20 For Nigeria's First NDC (updated submission), see https://unfccc.int/documents/497791.

21 For Nigeria's LT-LEDS, see https://unfccc.int/documents/638193.

22 For Nigeria's Climate Change Act (2021), see https://climate-laws.org/document/nigeria-s-climate-change-act_5ef7.

23 For Nigeria's Energy Transition Plan, see https://www.energytransition.gov.ng.

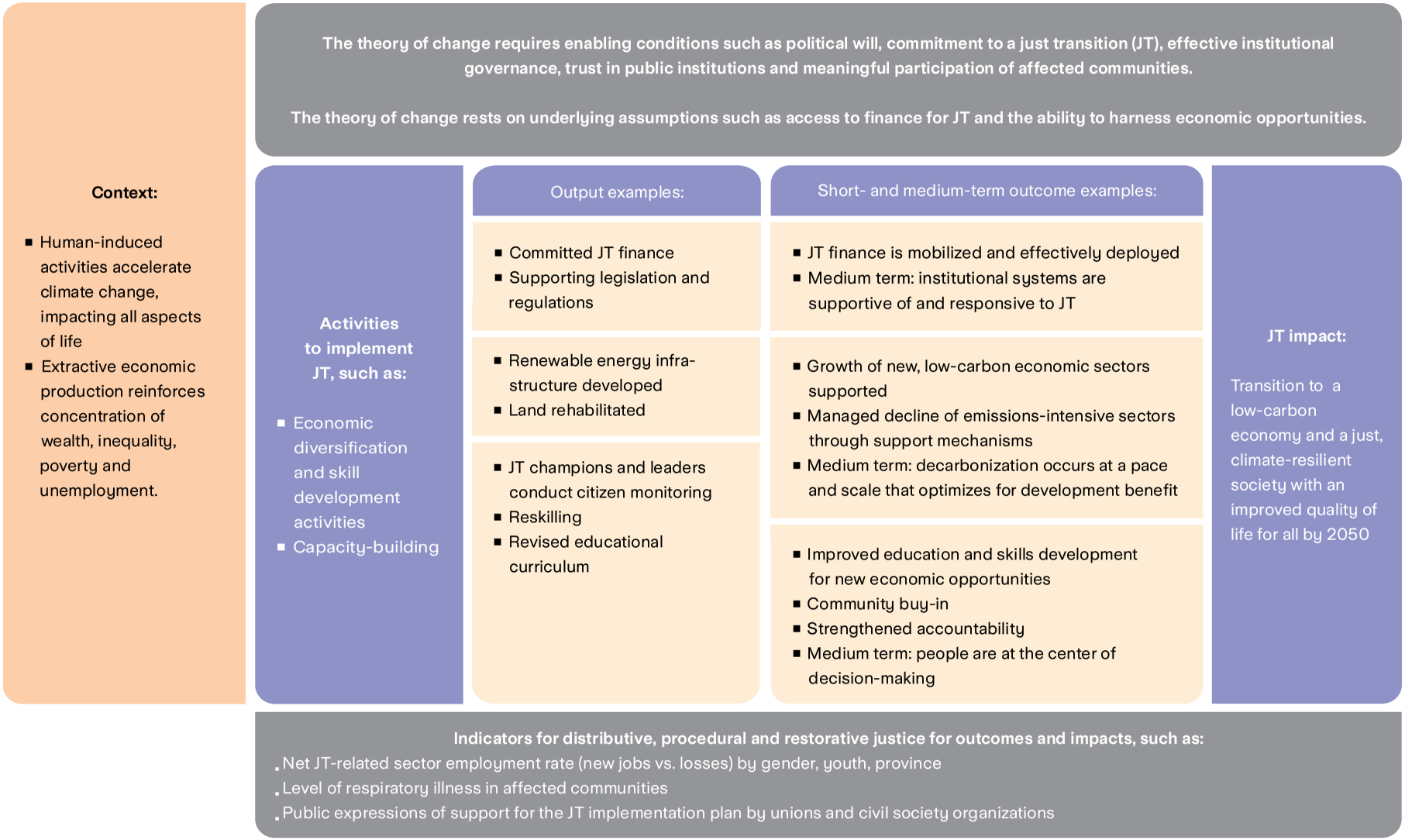
- **Enhance transparency:** Make evidence widely accessible and disclose how evidence is generated and stakeholders are engaged.
- **Enhance accountability:** Fund civil society and community-driven monitoring, track and report compliance and ensure accountability mechanisms are just and inclusive.
- **Foster understanding for course correction:** Prioritize gathering insights to strengthen approaches and strategies.
- **Justice driven and transformative:** Apply a justice lens to all aspects of the just transition and ensure all marginalized voices are heard.
- **Practical:** Prioritize tracking based on available resources and address tensions and trade-offs pragmatically and transparently.

The team worked closely with the PCC, which was constituted in December 2020 to oversee and facilitate a just and equitable transition to a low-emissions, climate-resilient economy (Republic of South Africa, n.d.). Together, they developed a theory of change for systemic change, drafted objectives, identified over 50 indicators and outlined data collection methods as well as an evaluation and learning approach. The theory of change explains that South Africa needs to achieve the following outcomes to transition to a low-carbon economy and a just, climate-resilient society with an improved quality of life for all by mid-century (Figure C.2):

- Institutional systems are supportive of and responsive to the just transition.
- Decarbonization of the economy occurs at a pace and scale that optimizes for development.
- People are the centre of decision-making to adapt to climate and its social and economic impacts.

The framework aims to enhance the understanding of how to achieve the outcomes and meet diverse needs through policies while ensuring distributive, procedural and restorative justice. The JT MEL Framework was further refined through feedback from the PCC and shared with key stakeholders for input. The framework also identifies some key indicators that could be tracked, such as racial and gender disparities in employment rates in just transition–related sectors, multidimensional poverty levels in targeted communities (e.g., Mpumalanga) and the percentage of graduates of vocational training in clean sectors finding employment within six months of graduating.

Figure C.2 | **South Africa's theory of change for a just transition**



Source: Euston-Brown et al., 2024.

Abbreviations

BBS	Bangladesh Bureau of Statistics
BTR	biennial transparency report
CSO	civil society organization
DSW	Department of Social Welfare
ETF	enhanced transparency framework
FT/PT	full-time/part-time
GDP	gross domestic product
GII	Gender Inequality Index
iFOREST	International Forum for Environment, Sustainability and Technology
ILO	International Labour Organization
JETP	Just Energy Transition Partnership
JGIT	just and gender-inclusive transition
JT	just transition
LT-LEDS	long-term low-emission development strategies
MEL	monitoring, evaluation and learning
MRV	measurement, reporting and verification
MSME	micro, small and medium-sized enterprise
NDC	nationally determined contribution
NEET	not in education, employment, or training
PCC	Presidential Climate Commission
SDG	Sustainable Development Goal
SMART	specific, measurable, achievable, relevant and time-bound

Glossary

decent work: Work (formal or informal) that is productive, provides workplace security, supports workers' personal growth and social integration, ensures gender equality, delivers fair wages/income and allows for labour organization and participation in decision-making that affects workers' lives (ILO, 2018).

distributive justice: Fair distribution of a transition's costs and benefits among people with competing needs and claims (Legal Dictionary, 2016).

inclusive: Includes all elements or items, is comprehensive and extensive (*Oxford English Dictionary*, 2024a; Wiktionary, 2024a). In recognition of unequal power dynamics, historical discrimination and disproportionate impacts of climate change, as well as the need for climate action support from a broad spectrum of society (not only the elite), social inclusivity has increasingly become a major focus of climate action in recent years. Just transition efforts seek to ensure more equitable distribution of the impacts of climate action and to create socially inclusive processes that allow broad swaths of society, but particularly impacted populations, to meaningfully participate in crafting solutions and providing input to decisions around how to address climate change and transition to low-carbon, climate-resilient economies.

indicators: A parameter that can help monitor various systems (economic, social or environmental) to identify changes and guide interventions to alter course (Encyclopedia.com, n.d.; Ferriss, 1988).

just transition: Transitioning to a low-carbon economy in a fair, just and inclusive manner by creating decent work opportunities, leaving no one behind and managing challenges in the process through effective social dialogue (ILO, 2015).

just transition vision: The articulation of how a group interprets its future in terms of its people and place in society, including what a just society means in the group's context (ILO, 2015).

leave no one behind: An active commitment that emerged from the United Nations 2030 Agenda and SDGs to empower people to have the choice and capability to participate in and benefit from human development. This is achieved by reducing vulnerabilities, eliminating intersectional discrimination and reducing inequities that undermine people's rights and potential (UNDP, 2018; UNSDG, n.d.).

monitoring transition: Monitoring the social, economic and environmental changes that accompany the implementation of transition-related strategies, policies and plans through the lens of justice to understand how "just" a transition is.

outcome goals: Goals reflective of an ideal future state to be realized (Breuer, Janetschek and Malerba 2019).

procedural justice: Fairness in the processes that resolve disputes and allocate resources; guided by respect, inclusion, impartiality and trust (adapted from Yale Law School [n.d.]).

process goals: Goals reflective of processes that are necessary to ensure a positive, just outcome (Breuer, Janetschek and Malerba 2019).

restorative justice: Repairing historical harm and minimizing future harm by transforming relationships, structures and systems (Restorative Justice Exchange, n.d.).

social dialogue: Refers to all types of negotiation, consultation or simply exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy (ILO, 2019).

theory of change: A method that explains how a given intervention, or a set of interventions, are expected to lead to a specific development change, drawing on a causal analysis based on available evidence (UNDG, 2017).

transition: A process, movement, change or shift from one state, condition, position, situation or stage to another (*Oxford English Dictionary*, 2023, 2024b; Wiktionary, 2024b).

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