



► Policy Brief

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Green jobs and just transition policy readiness assessment in India

Key points

- ▶ India has multiple pressures for a green transition. The country has the fastest growing economy in the world and will shortly have the largest population. This rapid development is placing extreme pressure on its natural resources. India is also highly vulnerable to climate change impacts such as extreme heat, sea level rise, and floods and droughts from changing rainfall patterns.
 - ▶ The labour impacts of green transition will be substantial, with strong job growth in the renewable energy and energy efficiency sector, but also job declines in carbon-intensive sectors, such as coal mining and electricity generation, as well as major restructuring of work in industrial sectors that need to transition rapidly, including manufacturing.
 - ▶ The *Green jobs and just transition policy readiness assessment* highlights uneven readiness across India, with both green jobs and the process of a just transition towards an environmentally sustainable economy and society viewed as emerging concepts, without established definitions or clear institutional mechanisms for developing green jobs.
- Recommendations emerging from this assessment include:
- ▶ **Develop definitions and information guidance about green jobs, green skills and a just transition** – Green job definitions and guidelines on how to establish and assess green jobs in various contexts across the economy should be established and broadly shared. A clear strategy is also required for collecting, analysing and disseminating data on green jobs and the employment impacts of transition.
 - ▶ **Linking skills development with green jobs and the just transition planning agenda** – Identifying and developing the appropriate range and volume of skilled individuals to support the energy transition will be a key component for a just transition. Skills development activities will need to be targeted towards those workers and communities currently in carbon-intensive sectors to provide them the means to access new labour market opportunities. There is a need to actively engage workers' organisations in the planning and implementation of these activities.
 - ▶ **Activating private sector actors for promoting green jobs and just transition** – Activating the private sector in developing green jobs will require access to new knowledge and skills as well as incentives (including financial incentives) to innovate and introduce cleaner production and resource efficient activities.

About the project

Green jobs are a high priority for India. The country has ambitious climate commitments to decarbonize their economy and decouple emissions from socio-economic development, as well as to build resilience to the impacts of climate change. India is ranked as the fifth-most vulnerable country to climate change impacts. Many sectors are in different stages of creating and implementing policies and strategies to drive sustainability.

India joined the UN Partnership for Action on Green Economy (PAGE) programme¹ in 2018, with the Ministry of Environment, Forest and Climate Change (MOEFCC) as the implementing partner. PAGE's main objective is to enable countries to design economic policies and national development plans to achieve the Sustainable Development Goals and to comply with global sustainability agreements on decarbonization, biodiversity, and other environmental concerns.

The ILO's activities focus on promoting green jobs and ensuring a just transition towards environmentally sustainable economies and societies. Green jobs are jobs that are good for people, good for the economy, and good for the environment. They are both a mechanism to achieve sustainable development, as well as an outcome, in that they can provide the double dividend of just and decent employment creation with reduced environmental impacts.

Developing a supportive policy ecosystem to enable future green jobs growth and to ensure a just transition is critical; yet in many policy areas and for many jurisdictions, green jobs and a just transition are new concepts and require activities to build awareness and capacity before they can be fully developed.

The ILO as part of PAGE India project activities undertook a Green Jobs Policy Readiness Assessment, to develop a baseline perspective of the current green jobs and just transition policy frameworks in India. The objectives of the assessment included:

- Providing a snapshot of green jobs and just transition policy frameworks and activities in India, including policy coverage and policy coherence.
- Assessing "readiness" and highlighting areas of best practice and opportunities for supporting green jobs and just transitions.
- Examining a specific geographical context for a just transition – Jharkhand State. Currently the

state has high levels of coal mining employment and is looking for avenues for economic diversification to support a just transition in the region.

Policy assessment is a critical activity because, as with other sustainability policy issues, the ability to deliver and implement policy encouraging green jobs and just transitions require:

- policy coordination across previously unconnected and fragmented sectors and parts/levels of government;
- integration of ecological, social and economic concerns in policy; and
- reform of institutional settings and compositions to better support the development and implementation of activities to address greening and a just transition.

Figure 1. About green jobs



Source: ILO, "What Is a Green Job?", 13 April 2016.

¹ The Partnership for Action on Green Economy (PAGE) was launched in 2013 as a response to the call at Rio+20 to support those countries wishing to embark on greener and more inclusive growth trajectories. PAGE brings together five UN agencies – UN Environment Programme, International Labour Organization, UN Development Programme, UN Industrial Development Organization, and UN Institute for Training and Research – whose mandates, expertise and networks combined can offer integrated and holistic support to countries on inclusive green economy, ensuring coherence and avoiding duplication.

Results and conclusions

Defining and measuring green jobs?

The ILO defines green jobs as decent jobs in economic sectors and activities that contribute to the preservation and restoration of the environment in traditional sectors such as agriculture and manufacturing and in new, emerging green sectors such as renewable energy and energy efficiency (see figure 1). Decent jobs refer to work that meets the ILO decent work criteria; that is, work that pays a fair income, guarantees a secure form of employment and safe working conditions, ensures equal opportunities and treatment for all, includes social protection for the workers and their families, offers prospects for personal development and encourages social integration, and workers are free to express their concerns and to organize.²



Government-funded handloom weaving training for women at the Primary Weavers Cooperative Society at Pithoria cluster, Jharkhand @ILO/K. Raman 2023

Assessing the decent work aspects of green jobs requires looking at the characteristics of green employment at three different levels – individual, enterprise and economy.

At the individual job level, one needs to assess whether the new employment is fairly remunerated and with all the relevant workplace benefits and rights, and whether workers have a safe working environment in which to undertake their work.

At the enterprise level, one needs to assess enterprise commitments and capacity to support decent working conditions alongside environmental sustainability – including fair wages, safe working environments with health risks minimized and free from all forms of discrimination and violence and harassment. To ensure

safe working conditions there is a need to include climate change risks in occupational safety and health (OSH) policies, and new occupations in renewable energy or energy efficiency must have their occupational risks and hazards mapped and mitigated. Other relevant commitments and actions include those aimed at addressing gender equality, providing career development and training, and supporting social dialogue processes for enterprise decision-making.

At the economy level, one needs to assess how employment generation and upgrading employment quality are linked to the green development agenda within the economy. The focus needs to not only be on employment creation but also employment quality, which can be improved by increasing formalization of employment, ensuring that regulatory and policy systems develop a supportive culture for rights at work, and ensuring that policy mechanisms provide for social protection and social dialogue processes.

Green jobs in India

In India the current understanding of green jobs in the policy system is mostly conceptual and linked with employment that is also beneficial for environmental sustainability. The link between green jobs and the need for employment that also meets decent work standards is not mainstreamed. The only officially available definition of “green jobs” among policy documents is by the Skills Council for Green Jobs, and has been developed from the ILO definition. There is lack of clarity around whether all jobs in a green sector can be considered “green”. The Ministry of Labour and Employment looks forward to creating a methodology to map green jobs among the existing classification of occupations.

Institutional coordinating mechanisms for considering employment in greening strategies and green jobs policy coordination include high-level inter-ministerial committees such as the Apex Committee for Implementation of Paris Agreement, consisting of 14 ministries, and sector-specific committees led by the planning commission NITI Aayog. There is no active coordination body for green jobs. The involvement of trade unions and workers’ organizations in these mechanisms, and generally in informing green jobs planning, is very low and needs to be increased.

Clear definitions of a just transition are also not available in policy documents, and the discourse around a just transition is led by civil society actors with a focus on the

² ILO, *Decent Work Indicators: Guidelines for Producers and Users of Statistical and Legal Framework Indicator*, 2nd ed., 2013.

energy and transport sectors. The most advanced discussions on a just transition within the Government is with the Ministry of Coal, which is working on an eight-year just transition project with the World Bank and has instituted a Just Transition Cell to overlook these activities, although Trade Union have not yet been consulted in the formulation of these plans. Government stakeholders from the energy sector identified that in-depth understanding of the direct and indirect impacts on industries and livelihoods (including the many informal workers in the sector) associated with energy transition is essential to just transition planning, including developing re-skilling and economic diversification plans.

Decarbonization strategies

Priority sectors for greening were identified by the National Action Plan on Climate Change (2008) and NITI Aayog's "Strategy for New India" (2018). These priority sectors include energy, green transportation, built environment, sanitation and waste management, water resources, agriculture, and pollution control. The strongest policy advances and budgetary allocations for green jobs are in the renewable energy, electric vehicles, energy efficiency, waste management and circular economy sectors. Other sectors with a green focus are agriculture, tourism, textiles, finance and rural development. Stronger greening policies are required in the industry and construction sectors.

Renewable energy policy

In the renewable energy sector, government policy has focused on the provision of tax incentives for the installation of renewable generation, renewables purchase and generation obligations, transmission waivers, opening up green energy access to smaller consumers, and promotion of domestic manufacturing through production-linked incentive schemes that are encouraging infrastructure installation and jobs. These policies are encouraging new employment in the renewable energy sector, and there is also planning to identify new skills needs and pathways for skill development in the sector, especially in the rooftop solar programme and decentralized renewable energy policy.

Industry policies

In the electric vehicles sector, the Government's FAME-II scheme for subsidizing electric vehicles and the Production-Linked Incentive scheme to promote indigenous battery and auto component manufacturing

have laid a solid platform to develop a progressive value chain for job creation in this new sector.

In the broader industry setting, the Perform-Achieve-Trade (PAT) scheme and the National Resource Efficiency Plan provide a framework for the decarbonization of industries.

Investment in green sectors of clean energy, clean transportation, and energy efficiency have been rising year on year, and public investment accounted for 43 per cent of total investment in these sectors in 2019–20³. However, total annual green financing in India is just 25 per cent of the financing required to achieve the NDCs by 2030. As such, focus needs to be placed on using public funding to mobilize resources from the private sector.⁴

Business and entrepreneurship support

Support for green entrepreneurs in India is varied. Civil society and UN agencies have implemented multiple green entrepreneurship training and incubation programmes. A few government financial assistance schemes exist for green enterprises, mostly by the Small Industries Development Bank of India. The Ministry of Micro, Small and Medium Enterprises has also implemented some schemes to promote greening, such as the Zero Effect Zero Defect (ZED) scheme which encourages low-carbon manufacturing. Overall green entrepreneurial support requires a strategic roadmap to propel advances and to coordinate entrepreneurial activities towards a green transition, especially for small and medium-sized enterprises.

Skills development and training activities

The National Policy on Skill Development and Entrepreneurship (2015) does not contain an explicit strategy for developing green skills/entrepreneurship, and includes only a brief mention of training support for certain green jobs. To address the need for green skills, the Government in 2015 set up the Skill Council for Green Jobs (SCGJ) to develop competency frameworks for occupations in renewable energy, sustainable development and environmental issues.⁵ The SCGJ includes members from government ministries, employer associations, individual employers and academia, and serves as a national coordination body for green skills development that identifies skills needs within the green business sector and implements nationwide, industry-led collaborative skills and entrepreneur development initiatives. While the

³ Neha Khanna, Dhruva Purkayastha, and Shreyans Jain, *Landscape of Green Finance in India: India's Green Investment Flows in FY 2019–20* (Climate Policy Initiative, 2022).

⁴ Khanna, Purkayastha, and Jain 2022.

⁵ India, Ministry of Skill Development and Entrepreneurship, *National Policy in Skill Development and Entrepreneurship 2015*, 2015.

immediate priority of the SCGJ is to skill the workforce for green jobs in priority sectors, discussions are underway to shift the mindset from “green jobs” to “green skills” in order to help the decarbonization of any sector. SCGJ acknowledges the need for a green skills roadmap which is aligned to India’s climate ambitions, and highlights the need for closer collaboration between industry and skilling bodies.

Other specific public green skills development policies and programmes include the Green Skills Development Programme of the MOEFCC, which provides employment access for youth in environment and forest sectors – including zoos, sanctuaries, national parks, industry, ecotourism, organic agriculture, waste management, education, and research.⁶ In addition, the Ministry of New and Renewable Energy has introduced the Suryamitra Skills Development Programme (SSDP) to develop skills of youth in the solar energy sector. As of July 2021, some 78,000 trainees had been certified, with an additional 9,000 expected to be certified in wind energy, solar water pumping, biogas and biomass, and small hydro. The Ozone Cell at the MOEFCC, the Ministry of Skill Development and Entrepreneurship, and the Electronic Sector Skill Council of India (ESSCI) has also developed an upskilling certification course to train 100,000 air conditioner service technicians in more energy efficient air conditioner operation (38,000 had been trained as of March 2021).⁷

Since 2010, the private sector has also been actively involved in green skill development primarily focused on meeting internal demand for these skills. The present Government has placed great emphasis on privately owned small businesses developing green skills, with a range of initiatives and incentives for this skill development in businesses.

Implications and recommendations

India has developed a macroeconomic green agenda, and strategies, plans and measures in relation to the green economy are well developed in specific sectors, such as for renewable energy. A just transition will require system level change, and assessing the existing capacity of policy and associated institutions (Government and other constituents and stakeholders) to undertake greening and

just transition planning is a necessary first step in building capacity for green jobs.

The study findings highlight that India’s green jobs and just transition policy readiness status is uneven. There is no widely held definition of green jobs or of a just transition, nor are there guidelines on assessing the employment impacts of greening at the national, sectoral and regional levels, beyond some examples of think-tanks estimating renewable energy jobs. Some individual sectoral policies are in place – yet there is no coherence or linkages between these policies and the macroeconomic greening ambitions.

Policy area	Readiness context in India ⁸
Development policies establish the green agenda	<ul style="list-style-type: none"> Green policies integrated into national development framework; National Electricity Plan, Green Hydrogen Mission, National Resource Efficiency Plan, MOEFCC regulations are all in line with achieving NDCs.
Industrial and sector policies for greening	<ul style="list-style-type: none"> Target sectors for green jobs scoped out by various agencies; Sectoral green policies present for energy, transport, energy efficiency, waste management; Green policies are in progress/not fully developed for other sectors.
Enterprise policies and initiatives for greening	<ul style="list-style-type: none"> No specific policies/incentives/assistance for green enterprises in Government’s Startup India Programme; Few green funding avenues exist; MSME greening and business resilience programmes to be strengthened.
Skills development for greening	<ul style="list-style-type: none"> Skills Council for Green Jobs defines green skills, and conducts skills gap assessments, on-the-job trainings, green jobs certifications; Strong HR policy in place for skilling workforce in renewable energy sector; Government focus is on women and unemployed youth.
Active labour market programmes for greening	<ul style="list-style-type: none"> Green jobs labour market information by geography/demography not collected by Government; Just transition plans initiated for energy sector by Ministry of Coal and World Bank; Platforms created for posting renewable energy jobs; Policies/initiatives framed for decentralized renewable energy livelihoods.

⁶ India, MOEFCC, “Green Skills Development Programme”.

⁷ India, MOEFCC, *Annual Report 2020–21*, 2021, 263.

⁸ This table provides a colour coded summary of the findings, with green representing significant elements of the framework element in place and readiness for activities to promote green jobs and just transition, yellow representing need for additional processes and policies which in many cases are identified/in development, grey representing no adequate policy elements identifiable from analysis to date.

OSH for climate change issues	<ul style="list-style-type: none"> ILO Occupational Safety and Health Convention, 1981 (No. 155), and Promotional Framework for Occupational Safety and Health, 2006 (No. 187), not ratified, even though OSH is fundamental principle and right at work; OSH policies in place in private and public sector renewable energy companies; OSH under-addressed in upcoming green sectors.
Social protection	<ul style="list-style-type: none"> New Labour Code for New India expands scope for social protection; Ministry of Labour and Employment's E-Shram portal captures data of workers in unorganized sector; Specific social protection strategies for individuals and communities affected by climate change and green transition need to be strengthened, including provision of support for re-skilling and re-employment.
Cross-cutting issues: Labour rights and standards, and social dialogue processes in greening	<ul style="list-style-type: none"> Labour rights not clearly included in green jobs policies; India has ratified the ILO Tripartite Consultation (International Labour Standards) Convention, 1976 (No. 144); Social dialogue involving workers' organizations is low for implementation of green policies; Policy coordination bodies exist but are not active; Policy coherence is strong in priority sectors.

Based on this assessment, the following recommendations are made for green employment policy and industry support to further develop the green jobs potential and just transition planning in India.

Recommendation 1 - Develop definitions and assessment guidance about green jobs, green skills and a just transition. The definition would need to include decent work aspects and delineate green jobs in “green” and “non-green” sectors to provide a framework to map green jobs in current and upcoming occupations. The employment impacts of greening need to be assessed at the national, state and sectoral levels. These assessments will estimate future green jobs opportunities and where transition risks exist, and allow for the development of skilling and employment policies. Analysis of green jobs will have to be done across sectoral value chains. Challenges associated with ensuring green and decent work in global supply chains, for instance, when importing raw materials for the manufacturing of solar panels/batteries, need to be addressed. For a just transition, sectors undergoing green transition need to be identified and just transition definitions need to be framed for each, with the aim of providing new employment avenues to impacted workers. Just Transition planning should be a result of tripartite

consultations with government, employers’ organisations, and workers’ organisations, and relevant civil society organisations who have demonstrated green job creation.

Recommendation 2 - Linking skills development with green jobs and the just transition planning agenda. A strategic roadmap is required to ensure that a skilled workforce is available to meet India’s NDCs and green targets. To scale up training programmes, the Skills Council for Green Jobs needs to be supported by stronger industry collaborations in training and recruitment, by strengthening infrastructure and the capacities of the training partner network, and by mapping green skilling demand at local levels to ensure local training provisions are available to meet localized demand.

Recommendation 3 - Activating private sector actors for promoting green jobs and just transition. Activating the private sector in developing green jobs will require access to new knowledge and skills as well as incentives (including financial incentives) to innovate and introduce cleaner production and resource-efficient activities. Innovation will require new capabilities within enterprises and sectors, including new knowledge sources and well-functioning inter-firm networks to support diffusion of innovations and best practices within and across sectors and business types (including small businesses). Policy objectives aimed at private sector activation will need to be well embedded and developed in the policy mix, including measures for building and supporting business networks for green innovation diffusion.

There is a strong need for specific support for green entrepreneurship in India through financial and mentorship assistance. Providing micro-, small- and medium-sized enterprises (MSMEs) with training and financial incentives to green their businesses, creating green public procurement targets, and implementing policies to improve the climate resilience of MSMEs in vulnerable geographies will increase scope for green jobs.

Recommendation 4 - Individual and institutional capacity-building for just transition planning. This study highlights how different levels of awareness and understanding of a just transition among different actors in the economy is hampering effective, just and inclusive energy transition planning. To mobilize support and to ensure meaningful participation from workers and business owners, targeted awareness-raising and capacity-building on green jobs, Just Transition, and response to climate change impacts are essential. In addition, capacity-building for policymakers is also critical, since just transition planning will require new sets of skills for each of these groups.

Recommendation 5 - Strengthening coherence between greening and labour market policies.

Employment policies need to be more clearly linked to the green economy agenda and there needs to be an active role for trade unions and workers' organizations in developing plans and policies for green jobs. Active labour market policies need to be prioritized for jobs, occupations and sectors that will be negatively impacted by decarbonization. The Government's portal on green jobs opportunities (SCGJ Rozgar) and on career guidance (National Career Service) can be translated into regional languages, and socialized among vocational training institutes, colleges and at the district level, providing a good example of emerging coherence between greening and labour market activities.

Recommendation 6 - Creating decent work conditions through OSH, gender equality, and social protection policies for the green transition.

OSH training for new green sectors such as floating solar photovoltaics and e-waste handling are still emerging, and need to be further mainstreamed and adopted by the sectors concerned. Special attention needs to be given to OSH in the emerging supply chains for green industries, which may be exploitative. Gender equality should be pillar of green and Just Transition planning – aspects of gender pay gap, inclusion of women across the value chain, building technical and managerial skills amongst women, promoting women groups and providing them access to finance need to be considered. In the shift towards a greener economy, strategic social protection measures need to be designed for those whose jobs have been lost or are being transformed, with special attention focused on informal workers. For instance, coal mining workers whose mines are shutting down can be provided with compensation packages, temporary and time-bound social protection packages can be designed to provide a financial cushion for those who are upskilling/reskilling themselves with new green skills, and alternate employment options and reskilling avenues can be provided for those wanting to work within the region where job losses have occurred. The Ministry of Labour and Employment's E-Shram portal, with over 290 million registered workers, can help formulate schemes beneficial to informal workers.

Challenge

The Trade Union movement has played a critical role in India's economic development through the organization and education of workers, and contribution to the labour law and legislation. However, the Indian workforce currently faces issues of increasing informal and contractual workforce, gender inequality, inadequate

creation of decent work, and lack of permeation of social security benefits to the workforce, amongst others. Central Trade Unions voice that tripartism and social dialogue across sectors including those undergoing green transitions is irregular and insufficient, and the prevalence of union-busting and de-registration are undermining the value of Trade Unions and need to be curbed.

For a Just Transition towards low-carbon development, involvement of Trade Unions in planning and implementation of strategies is key.

Methodology

This project utilized a qualitative policy readiness assessment methodology – Green Jobs and Just Transition Policy Readiness Assessment. These assessments map and analyse existing policy systems for green jobs and just transition planning. This form of policy readiness assessment is important, because a supportive policy ecosystem is critical for enabling future green jobs growth and ensuring a just transition; yet in many policy areas and jurisdictions, green jobs and a just transition are new concepts and require activities to build awareness and capacity before they can be fully developed and implemented.

Therefore, assessing the existing capacity of policy and of associated institutions (governments and other constituents and stakeholders) to undertake greening in labour markets and to plan for a just transition is a necessary component in building capacity for green jobs. The policy readiness assessment can take a specific sector focus and/or a geographic focus to allow for analysis of regional and local policies and how these interact with the national level policy framework.

The methodology begins with analysis of the existing policy context and the narrative of its development, as well as policy stakeholder mapping. Then a series of key informant interviews and focus group discussions are conducted, specifically focused on the policy ecosystem for green jobs and just transition – this also includes identifying gaps, forthcoming policy measures, and analysis of the coordination and coherence of this policy ecosystem. This assessment develops a baseline perspective of the current green jobs and just transition policy framework and can inform other assessment activities, interventions and capacity-building.

This study was undertaken in 2022 and included a range of interviews and focus groups with a tripartite validation workshop in 2023.

Other useful resources

- ▶ ASEAN and ILO. 2021. *Regional Study of Green Jobs Policy Readiness in ASEAN: Final Report*.
- ▶ ILO. 2015. *Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All*.
- ▶ ———. 2018. *World Employment and Social Outlook 2018: Greening with Jobs*.
- ▶ Sharpe, Samantha A., and Cristina M. Martinez-Fernandez. 2021. "The Implications of Green Employment: Making a Just Transition in ASEAN". *Sustainability* 13 (13): 7389.

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