

## SAFEGUARDING WORKERS IN THE GREEN TRANSITION : LABOUR PROTECTION AND SKILL DEVELOPMENT FOR A SUSTAINABLE FUTURE

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### INTRODUCTION:

Rising global temperature and increase in extreme weather conditions have been pushing climate change to the forefront. It has become a policy of debate throughout the world today. The COVID 19 pandemic pressured us with enormous challenges but at the same time it also provided us with an opportunity to build back the economy and society into a much more strong and resilient one. Many countries around the world have taken strong steps to make this recovery not only rich in job and employment generation but also green. Many governments have been taking initiatives and bringing in strong measures to reduce GreenHouse Gas Emission and have made commitments to attain Net Zero Emission by 2050<sup>298</sup>.



<sup>298</sup> OECD, Labour and Social Policies for the Green Transition: A Conceptual Framework (2023), available at <https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/07/labour-and-social-policies-for-the-green-transitionbfeac5cb/028ffbeb-en.pdf>

These targets will have varying economic impacts on industries. They will have to adopt a more eco-friendly method of production. Industries that are major emitters of GHG may see a scale back considering the extent of their emission. For example, regions may see key industries like coal mining or steelmaking may scale back, while other regions may see an expansion of new industries like the renewable energy industries. This transition may inevitably have an impact on the labourers. Green transition can lead to reallocation of jobs and capital. The workers may have to go through major changes. Workers may have to move between jobs and sectors, they may have to reskill to adapt to the new changes. During this process there are high chances of them losing their jobs. Conversely, some workers may benefit from new job opportunities that may come their way during the process of transition.

This paper intends to explore the effect of green transition on the labor market. This paper would also provide recommendations for the protection of the workers and ways to enhance their skills to make sure that they do not scale back and lose their jobs during transition.

### Research Problem

The transition towards a green economy is a crucial step in combating climate change and ensuring environmental sustainability. This shift poses significant challenges for workers particularly those in emission-intensive industries such as coal mining, steel production, and traditional manufacturing. The reallocation of jobs and capital during this green transition leads to job displacement, skill gaps, income insecurity, labor market inequalities. Despite various government policies and skill development initiatives in India, workers in traditional industries face barriers to transitioning into green jobs due to a lack of adequate training, legal protections, and social security measures. The absence of a comprehensive legal framework for just transition further increases the risks of unemployment, wage reductions and

exploitation of vulnerable groups of labor. This research aims to examine the impact of the green transition on the workforce and propose strategies for skill development and labor protection to ensure an inclusive and just transition.

### Research Objectives:

1. To examine the impact of the green transition on the labor markets in terms of employment opportunities and job displacement across various sectors in India .
2. To analyze the role of government policies, legal frameworks and skill development programs in ensuring a just transition for workers.
3. To assess the challenges faced by workers like job quality, income security, occupational health and safety in emerging green industries.
4. To propose policy recommendations for strengthening labor protections, reskilling initiatives and equitable employment opportunities in the green economy.

### Research Questions:

1. What are the key labor market challenges posed by the green transition, and which sectors are most affected?
2. How effective are existing government policies and legal frameworks in protecting workers during the transition to a green economy?
3. What measures can be implemented to safeguard worker rights, improve job security, and enhance working conditions in green industries?
4. How can legal reforms help establish a just transition framework that ensures social security, fair wages, and sustainable employment opportunities?

### What is green transition:

Green transition refers to the process of shifting from an economy that is primarily based on fossil fuel or environmentally harmful practices to a one that is more eco friendly, sustainable

and low carbon. In simple terms green transition means a process where the governments take one step forward to protect the environment by reducing their GHG emissions and adopt a more eco-friendly way of production. This transition will lead to significant changes across various sectors including energy, transport. Agriculture and many more. The main aim of green transition is to reduce environmental impact and to promote sustainability.

### **Need for Green Transition In India:**

India's environment protection performance has not been good over the years. Every year the Yale Center for Environmental Law & Policy put out their Environment Protection Index. India has ranked 176 out of 180 countries in environment protection. This shows the sad state of affairs of the country in its commitment towards protection of the environment. India has been taking several initiatives to improve its condition. Following are the reasons for the need for Green transition in India.

### **1. Commitment towards Sustainable Development Goals:**

India has made a commitment to attain all Sustainable Development Goals by 2030 along with all other countries of the world. Green Transition aligns with SDG Goal 13 that deals with Climate Action. Green jobs also contribute to Millennium Development Goals which include poverty reduction and environmental protection. Sectors like energy, agriculture and transportation amongst others are moving toward greener practices. This necessitates the need for green skills for job allocation.

### **2. Climate Change and India's Preparedness:**

As of 2022 India stands in the 121st position out of 163 countries when it comes to SDG preparedness. India is the third-largest greenhouse gas emitter with about 96 percent of emission

from five major sectors. It is not easy for India to attain net-zero emissions by 2050. It will require

long term efforts and strict regulations for emission intensive industries.

### **3. IPCC Report Findings:**

The Intergovernmental Panel On Climate Change (IPCC) report has listed India as a Climate- Vulnerable hotspot. This means that India is exposed to extreme weather conditions. There are high possibilities for extreme flooding and heat waves across the country. Urban areas which include cities like Mumbai, Ahmedabad and Chennai have heightened risks due to rapid population growth and infrastructure strain by 2050.

### **What are Green Jobs:**

Green jobs are described as "jobs that contribute to conserve or restore the environment."

India was one of the first nations in the Asia-Pacific region to work with the ILO on the Green Jobs Initiative in a global partnership established in 2007 This collaboration was made possible by the Multi-Stakeholder Task Force on Climate Change and Green Jobs, which was presided over by the Ministry of Labor and Employment. According to the ILO (2016), green jobs are decent jobs that contribute to preserving or restoring the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency. Green jobs limit greenhouse gas emissions, minimize waste and pollution, protect and restore ecosystems, and support adaptation to the effects of climate change.

Thus, Green jobs are those that contribute towards the conservation and restoration of the environment. There is no legal definition for Green Jobs in India, hence it is safe to look into the definition of the International Labor Organisation.

## Key Sectors impacted during Green Transition:

### 1. Energy sector:

Energy sectors are based on fossil fuel roles such as coal-mining, oil extraction and thermal power plant operations. This sector is the major contributor of pollution as its activities are energy intensive. These sectors will have to switch to green alternatives. The greener alternatives would be Solar panel manufacturing and installation, Wind turbine production and maintenance and other renewable plant operations like hydro, thermal and biomass.

### 2. Agricultural Sector:

The agricultural sector would have to switch to greener methods of farming. Farmers using the Conventional method of farming use chemicals, pesticides and fertilisers that are harmful to the environment as it pollutes the soil. The greener alternatives would be organic farming and sustainable agricultural practices. This change could open avenues of jobs in agroforestry and soil conservation techniques.

### 3. Transportation Sector:

Transportation sector is one of the major contributors of pollution in India. Traditional jobs in this sector would include manufacturing and maintenance of internal combustion engine vehicles. Green alternatives in this sector would be manufacturing and servicing electric vehicles (EVs).

### 4. Construction Sector:

Conventional building techniques produce high carbon and also high waste. This sector would also have to transform into a greener practice considering its emission of waste and pollution. The industry may have to transform into green building design and construction using eco-friendly materials. Buildings may have to include solar panels and green roofs.

## 5. Manufacturing Sector:

The manufacturing sector may have to transform itself from energy intensive production processes

to green alternatives like clean manufacturing technologies and production of renewable energy

equipment.

### Impact of Green Transition on the Workers:

Green transition happening in the above mentioned sectors will impact the workers working in the

respective sectors. It is crucial to address the problems that workers might have to face. Following are a

few important ones:

#### 1. Job Quality in the Green Transition

Not all green jobs guarantee better working conditions for the workers. For instance let us take

Workers working in the production and installation of solar panels. They will be exposed to

hazardous substances and heat stress. Workers in wind turbine maintenance face risks of falls and

electrical injuries. Recently there has been an increase in the demand for electric vehicles (EVs).

This throws workers in battery production and recycling to toxic substances like lithium and cobalt.

This would have a long-term impact on the health of the workers. Workers would have to expose

themselves to all of the above mentioned dangers. This has not been taken into consideration by the

Indian Government.

## 2. Skills and Reskilling for the Green Economy

Reskilling is essential as many skills in emission-intensive jobs are not directly transferable to green jobs. Workers need to skill themselves to adapt to the greener jobs. Lack of skill is a major concern as there is a possibility for them to lose their jobs if they do not acquire the necessary skill demanded by the sector. For instance, in a solar power plant the workers are expected to have skills related to the installation, maintenance, and design of the solar energy systems. Technicians need to be trained in photovoltaic systems, battery storage, and understanding solar panel design and efficiency. Workers in the wind energy sector must be skilled in the installation, maintenance, and repair of wind turbines. This includes knowledge of aerodynamics, mechanical engineering, and electrical systems. In the construction sector workers will need skills related to green building materials, energy-efficient design, and sustainable construction practices.

## 3. Labour Market Impact:

Workers in emission-intensive industries face job displacement and income loss. Coal mining, cement production, steel manufacturing, and fossil fuel-based power generation are at the heart of Indian economies. These industries provide jobs for millions of workers across India. Recently, governments and businesses have been implementing policies to reduce greenhouse gas emissions in these sectors. Hence, the workers in these sectors face profound challenges like job displacement and income loss. With the rise of renewable energy sources like solar, wind and

hydropower the demand for coal, oil and gas has been steadily declining. Countries are also phasing out fossil fuel subsidies and imposing stricter emissions regulations. This is making these industries less competitive.

For instance, Jharkhand and Chhattisgarh are two states in India which are heavily reliant on coal mining. This could have severe economic

disruptions in these states that in turn will impact the economy of the country. Green transition would impact the rural areas more than that of the urban areas. This is because most of the emission intensive industries or climate sensitive sectors (e.g. agriculture) are located in the rural areas. They face greater employment and income risks compared to urban areas as Urban regions benefit more from knowledge-intensive,

## Government Policies and Private Sector Policies for Upskilling Labor:

### 1. National Policy and Coordination:

The government has come up with the National Policy on Skill Development and Entrepreneurship in the year 2015. This policy did not explicitly focus on green skills but it laid down the foundation for sustainable development and green entrepreneurship in India.

Ministry of Skill Development and Entrepreneurship, National Policy on Skill Development and Entrepreneurship (Govt. of India 2015)

### 2. Skills Council for Green Jobs (SCGJ):

This Council was established in 2015. This aims to train 1 million people in green technologies and upskill/retrain 2 million by 2030.

### 3. Government's Green Skilling Initiatives:

The government has come up with two important programs that aim at developing solar energy

technicians. One is the Green Skills Development Programs that was introduced by the government in 2017 and the other is the Suryamitra Skills Development Programme which was brought in 2021. The GSDP aims at targeting youth employment in the environment and forest sector like the Zoos, Eco tourism etc. the SSDP has trained around 78000 solar energy technicians as of 2021<sup>299</sup>.

<sup>299</sup> Ministry of Skill Development and Entrepreneurship, Skills Council for Green Jobs, Govt. of India (2015), available at <https://www.msde.gov.in/special-initiatives/skills-council-green-jobs>

#### 4. Private Sectors Role:

Companies provide in house skilling to develop their green skill programs to meet internal and market demands.

#### 5. Women and Youth Empowerment

The government has come up with Women-only training institutes, gender-sensitive guidelines and earmarked intake quotas for women. Barefoot College (Rajasthan) has trained around 1,700 women as solar engineers. SEWA's Hariyali Green Villages Project aims at Promoting clean energy and trains women as solar technicians. Finally the Udaipur Urja Initiative has Trained more than 200 women as clean energy entrepreneurs.

#### 6. Integration into Education

The National Education Policy 2020 has updated its school curriculum to include topics like

climate change, waste management, and sustainable living. Higher education incorporates courses on renewable energy, water conservation, and environmental preservation. Renewable Energy Fellowships and short term skill training programs introduced by MNRE<sup>300</sup>.

#### What are the Gaps in the Current Governmental policies and Legislations:

While India has taken significant strides in promoting green jobs and skilling through various policies, the absence of a dedicated legal framework for green jobs and just transition poses several challenges:

#### 1. Absence of a Comprehensive Green Jobs Law

Policies like the National Skill Development Policy (2015) and National Action Plan on Climate

Change (NAPCC) include provisions for green skilling and employment, but they lack legal enforceability. Programmes such as Suryamitra and Green Skills Development Programme are

largely policy-driven and do not operate under a formal statutory mandate. There are no accountability mechanisms for stakeholders (governments, industries, training bodies).

#### 2. Weak Legal Mandate for Just Transition

No laws in India mandate the protection, reskilling or compensation for workers in industries

adversely affected by climate change. Currently the participation of the trade union in the decision making is very limited and most times they are not even consulted before the Industry decides to go for a transition. This leads to displacement of workers without guaranteed re-employment or adequate safety nets.

#### 3. Gaps in Green Job Definition and Regulation

There is no legal definition for the term Green Jobs in India. The term "green jobs" lacks a clear

and legally binding definition in India. Most green job initiatives are sector-specific and each sector tends to have their own definition of what a green job is. This leads to Inconsistent understanding and application of green job concepts across sectors.

#### 4. Lack of Legal Standards for Green Skills Certification

Skilling programmes organised by the government are driven by organizations like SCGJ but are not legally standardized. Certification processes are not legally enforced, leading to non-uniform training quality. This leads to reduced employability of workers due to a lack of industry recognized certification. This also increases the gaps in trust between employers and employees on skill standards.

#### 5. Absence of Labour Rights in Green Sectors

No laws explicitly cover worker protections in emerging green industries like solar manufacturing, EVs or bio-energy. Most of these sectors have contractual workers leading to job vulnerability, low wages and poor working conditions of these workers. This leads to labour exploitation and violations especially among

<sup>300</sup> Ministry of New and Renewable Energy, Suryamitra Skills Development Programme, Govt. of India (2021), available at <https://mnre.gov.in/suryamitra>

marginalized groups like women, youth, and Scheduled Castes/Tribes.

### **The Industrial Disputes Act, 1947**

The purpose of this act is to regulate industrial relations, including the resolution of disputes between employers and workers. It provides guidelines for the termination of employment, retrenchment and lay-offs as well as the establishment of labor unions. The increasing reliance on contractual and temporary workers in green sectors, such as solar and EV manufacturing means that these workers do not benefit from the protections under this Act. This is especially problematic because contractual workers are more vulnerable to exploitation with fewer avenues for dispute resolution. The Act focuses on the rights of permanent workers but has limited scope for contractual employees who make up a significant proportion of the green workforce.

### **The Factories Act, 1948**

This Act applies to manufacturing industries and mandates provisions for health and safety, working hours, and welfare measures for workers in factories. Many green industries, especially

small-scale or cottage industries like biogas production have insufficient infrastructure to comply

with the requirements of the Factories Act. As a result, workers in these industries face hazardous conditions without the necessary safety measures. For sectors like solar manufacturing and EV production, where the working environment involves physical labor, handling of heavy equipment, or exposure to chemicals, there are concerns about occupational health and safety standards being overlooked due to limited enforcement of this Act.

### **Recommendations for Legal Reforms:**

#### **1. Enact a Green Jobs and Just Transition Law:**

Define green jobs and establish binding targets for green job creation. The legislature should

give a clear definition as to what is a Green Job and what are its types. If an industry plans on going green there should be mandatory reskilling programs that need to be held. The industry should also conduct placement programs to ensure that all the workers are placed in proper jobs. This ensures job security for the workers.

#### **2. Integrate Labour Protections into Green Policies:**

Workers should be provided with minimum wage guarantees, social security, and collective bargaining rights. Amendments should be made in the current labor legislations to include green

workers. This enures on discrimination between the contractual workers and the permanent workers.

#### **3. Standardize Green Skills Training:**

Green skilling training should be made mandatory and the certificates should be legally enforceable.

#### **4. Enhance Worker Participation:**

Legally mandate consultation with trade unions and workers' organizations before the industry goes for a green transition. The trade Unions should be consulted in relation to the impact that the green transition would have on the workers.

#### **5. Create Legal Safeguards for Vulnerable Workers:**

Develop policies to prioritize marginalized groups in green job opportunities. Ensure equal pay for equal work, particularly for women and socially disadvantaged communities.

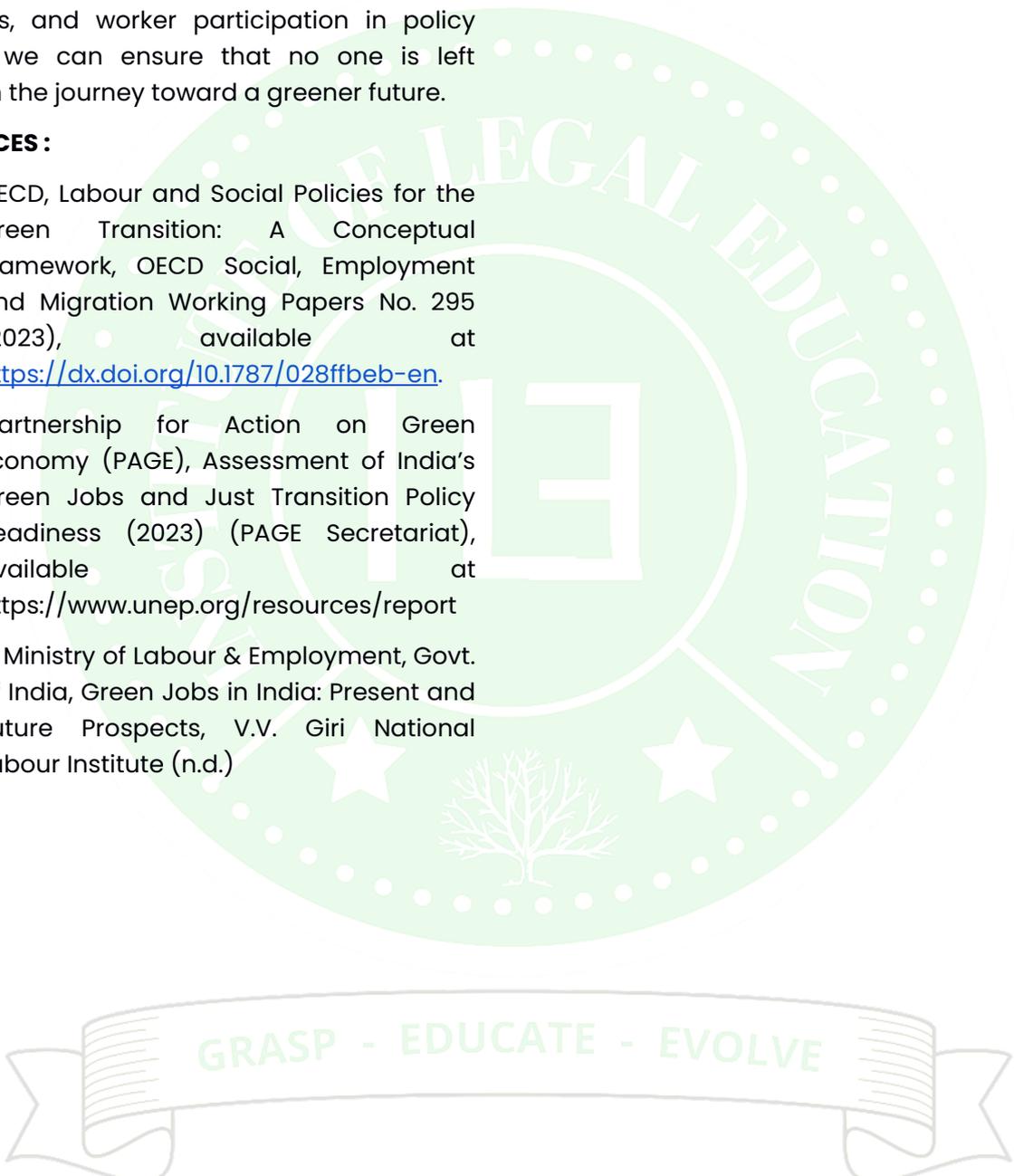
#### **Conclusion:**

The green transition is an inevitable and necessary shift toward a sustainable and low carbon economy. While it presents significant opportunities for job creation, economic growth, and environmental conservation, it also brings challenges, particularly for workers in emission-intensive industries. The success of this

transition depends on robust policies that safeguard labor rights, ensure fair wages, and provide reskilling opportunities for displaced workers. Governments, industries, and civil society must work together to create a just transition framework that prioritizes both sustainability and social equity. By integrating strong legal protections, skill development programs, and worker participation in policy making, we can ensure that no one is left behind in the journey toward a greener future.

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