

Vichaar-Vimarsh

JUST

Transition

NEWSLETTER

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LABOUR INFORMALITY IN THE COAL-PRODUCING GEOGRAPHIES IN INDIA: ISSUES AND PERSPECTIVES

Message from the Desk of the Senior Director, TERI

TERI is pleased to announce the release of the sixth edition of "Vichaar-Vimarsh: Just Transition Newsletter." This edition focuses on the theme of "Labour Informality in the Coal-Producing Geographies in India: Issues and Perspectives," emphasizing a people-centric transition. We have curated a range of perspectives from academics and researchers to emphasise the pressing requirement for a human-focused strategy in the wake of transition to sustainable energy.

As we look to a future powered by greener sources of energy, aligning with India's net-zero goals, the need to reduce our reliance on coal is of utmost significance. This change would, however, have a direct impact on informal labourers who rely on coal for their living and frequently lack alternative employment prospects or means of social security. It is imperative to prioritise the inclusion of coal workers, especially those who are informally engaged, to ensure their degree of vulnerability is minimised. The purpose of this issue is to create a sense of urgency and need for collaborative efforts that directly tackle the difficulties experienced by those reliant on the coal economy in varied ways.

Boosting the voices of individuals at the grassroots level and striving for their improvement is crucial as we transition to a green economy. We hope that the readers will perceive this issue as enlightening and that it enhances their awareness of the intricacies associated with people centric transition

A K Saxena
Senior Director
Electricity and Renewables Division





As part of the TERI's pilot implementation project for alternative livelihood generation, women received technical training in tailoring and stitching and are now actively selling their products. For more information check the photo essay. (Source: TERI)

We are committed to transforming the coal sector not just through increased production but by focusing on just transition, repurposing land, and ensuring alternative livelihoods for communities previously dependent on coal mining.

- Mr. Amrit Lal Meena
Secretary, Ministry of Coal, Government of India

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Men carrying heavy loads of pilfered coal. (Source: TERI)

Editorial

A deeper dive in the coal sector and comprehension of associated complexities calls for a detailed inquiry and peeling apart every layer of the ecosystem. In-depth research, field visits, interaction with stakeholders and experts provided a 360 degree view but with time we felt that this complex theme requires continuous deliberation and our point of view will remain incomplete without the perspectives of stakeholders at various levels which would go a long way in shaping future thinking and building a transition pathway towards a greener economy. Synthesis of these ideas and creation of a landscape of plausible alternatives towards an inclusive worldview has the potential to trigger reflection, experimentation and systemic change. Being driven by this line of thinking, we decided to create a space for exchanging knowledge and innovative ideas which would eventually enable a community of practice and other actors in making informed choices.

Our experiment through this newsletter has proven to be a successful endeavour as we aspire to mobilise and weave together varied perspectives while also reaching out to a larger audience on the subjects of the coal economy, coal dependence, intersectional vulnerabilities, challenges and opportunities of economic diversification as we transition to more sustainable future.

In this issue we have attempted to throw light on informality, ways of de-risking this segment through social engineering and economic diversification, creating a safety net that can help promote a more resilient workforce. Deeper insights into the intersectionality between informal workforce, their dependents and those engaged in the induced economy that is likely to be impacted in the process of energy transition as well as the contingent socio-economic change is imperative for designing an inclusive pathway. This can eventually help adapt to the scenario that is going to unfold in the next two decades.

I believe that this issue of our newsletter will bring these perspectives to the fore for a more nuanced discourse on Just Transitions.

- Jayanta Mitra, Ph.D., Senior Fellow, TERI



JUST TRANSITION IN INDIAN CONTEXT

C J Joseph, National Secretary, All India Trade Union Congress



Women carrying coal in Giridih, Jharkhand to sell at local shops nearby (Source: TERI)

The origins of Just Transition Movement

Just Transition principles are widely accepted to have first been developed by US trade unions in the 1980s campaigning for benefits to allow workers to transition away from hazardous jobs. The term broadened to advocate for the development of new energy and extractive industries in a way that secured workers' rights, pathways for their transition to alternative sectors, and accounted for any negative effects on communities and livelihoods. Just Transitions integrated into European discourse in the early 2000s where it had a strong association with the specific social and economic fallout for coal-dependent communities and workers.

Just transition as per Paris Agreement

A just transition ensures environmental sustainability as well as decent work, social inclusion and poverty eradication. Indeed, this is what the Paris Agreement requires: National plans on climate change that include just transition measures with a centrality of decent work and quality jobs.

The Paris Agreement on climate change includes just transition as an important principle. Just transition is not a fixed set of rules, but a vision and a process based on dialogue and an agenda shared by workers, industry, and governments that need to be negotiated and

JUST TRANSITION PRINCIPLES ARE WIDELY ACCEPTED TO HAVE FIRST BEEN DEVELOPED BY US TRADE UNIONS IN THE 1980S CAMPAIGNING FOR BENEFITS TO ALLOW WORKERS TO TRANSITION AWAY FROM HAZARDOUS JOBS.

implemented in their geographical, political, cultural, and social contexts. It is implemented with a set of guiding principles, such as the International Labour Organization's guidelines for a just transition.

Issues not addressed in Paris Agreement

1. Nuclear energy produces radioactive waste: A major environmental concern related to nuclear power is the creation of radioactive wastes such as uranium mill tailings, spent (used) reactor fuel, and other radioactive wastes. These materials can remain radioactive and dangerous to human health for thousands of years. Radioactive wastes are subject to special regulations that govern their handling, transportation, storage, and disposal to protect human health and the environment.
2. The Paris Agreement limit won't protect all countries and locations from the strong negative impacts of climate change. For vulnerable climates close to deserts, such as the Sahel region of Africa, the climate targets don't go far enough to protect the people living there.
3. The main challenge associated with many international agreements is enforceability. While the Paris Agreement requires monitoring and reporting of carbon emissions, it does not have the ability to force a country to reduce emissions.

Difference between energy transition and just transition

Energy transitions are about people: the ones who make the decisions and the ones affected by those decisions. A "just transition" approach ensures that the affected people are considered by those making decisions.

Coal Reserve and Production

TOP Five Coal Producing Countries

China: 3942.2 MT
India: 900 MT
Indonesia: 550 MT
USA: 544 MT
Australia: 544M T

Coal Reserve

Largest coal reserve is in US followed by Russia, Australia, China and India

S N	Country	Anthracites & Bituminous		Subbituminous & Lignite's		Total	
		MT	%	MT	%	MT	%
1	United States	220,167	30%	30,052	9.4%	250,219	24%
2	Russia	69,634	9.5%	90,730	28.4%	160,364	15%
3	Australia	70,927	9.7%	76,508	23.9%	147,435	14%
4	China	130,851	17.8%	7,968	2.5%	138,819	13%
5	India	96,468	13.1%	4,895	1.5%	101,363	10%

Caption : Table 1

Electricity Generation

In the US, the sources of electricity generation are natural gas (32%), coal (26%), and nuclear (22%). Wind comes in at a distant 9%, but is rapidly increasing, as is solar (2.7%).

In the EU, nearly 39.4% of electricity is generated from renewable energy sources, 38.7% from fossil fuels and 21.9% from nuclear power. Fossil fuels in detail: Gas:19.6% Coal: 15.8%.

A JUST TRANSITION ENSURES ENVIRONMENTAL SUSTAINABILITY AS WELL AS DECENT WORK, SOCIAL INCLUSION AND POVERTY ERADICATION. INDEED, THIS IS WHAT THE PARIS AGREEMENT REQUIRES: NATIONAL PLANS ON CLIMATE CHANGE THAT INCLUDE JUST TRANSITION MEASURES WITH A CENTRALITY OF DECENT WORK AND QUALITY JOBS.



Russia supplies a significant volume of fossil fuels to other European countries. In 2021, it was the largest exporter of oil and natural gas to the European Union, (90%) and 40% of gas consumed in the EU came from Russia.

Most of the electricity in China comes from coal power, which accounted for 62% of electricity generation in 2021 and is a big part of greenhouse gas emissions by China. China is the world's largest electricity producing country, followed by the United States and India.

In Russia electricity generation is based largely on gas (46%), coal (18%), hydro (18%), and nuclear (17%) power. 60% of thermal generation (gas and coal) is from combined heat and power plants. Russia operates 31 nuclear power reactors in 10 locations, with an installed capacity of 21 GW.

Just Transition in India

In Europe, USA and developed countries the concept of Just Transition was put forward by the Trade Union. In India the concept is being floated mostly by NGOs in a fixed set of rules that is being followed in other countries. Just Transition needs to be advocated as per Indian conditions.

India is the second largest producer of coal. As per Ministry of Coal, major production of electricity is achieved through coal based thermal power plants which is around 70% of the total power generation. India has proven reserves equivalent to 111.5 times its annual consumption. This means it has about 111 years of Coal left (at current consumption levels and excluding unproven reserves). In order to achieve self-reliance,



Locals pick up coal to sustain their livelihood (Source: TERI)



IN EUROPE, USA AND DEVELOPED COUNTRIES THE CONCEPT OF JUST TRANSITION WAS PUT FORWARD BY THE TRADE UNION. IN INDIA THE CONCEPT IS BEING FLOATED MOSTLY BY NGOS IN A FIXED SET OF RULES THAT IS BEING FOLLOWED IN OTHER COUNTRIES. JUST TRANSITION NEEDS TO BE ADVOCATED AS PER INDIAN CONDITIONS.

the Indian government is working towards increasing the domestic output to over 1 billion tonnes of coal in 2023 – 2024 and 1.5 billion tonnes by 2029 – 2030, with coal-fired power remaining a key element of its electricity portfolio. Present policy of the Indian government is to produce the required quantity of electricity through coal based thermal power plants. This indicates that government of India is not serious about Just Transition.

India will need to develop comprehensive policies and plans to facilitate a just transition. Experiences from other countries suggest that a just transition involves comprehensive set of mechanism to phase down fossil fuel production and consumption, re-structure the economy and develop new industries skill and re-employ the workforce, repurpose land and infrastructure for future economic use and make responsible social and environmental investments to build a resilient economy. These mechanisms require well defined Laws and policies

at various levels of government, along with the support of stakeholders.

A large part of Indian coal reserve is similar to Gondwana coal. It is of low calorific value and high ash content. The carbon content is low in India's coal, and toxic trace element concentrations are negligible. The natural fuel value of Indian coal is poor. On average, the Indian power plants using India's coal supply consume about 0.7 kg of coal to generate a kWh, whereas United States thermal power plants consume about 0.45 kg of coal per kWh.

It is being advocated that India should switch over to solar energy. Even if we switch over to solar energy, India is lagging behind in battery technology for storage of solar energy. A solar power plant normally has a Plant Load Factor (PLF) of about 20%. This is because there is no sunlight at night and its intensity is low in the morning and evening. Whereas a thermal power plant can easily run at PLF of >80% if sufficient coal supply is there.

As a trade union, we support Just transition but the way it is being adopted in India needs serious rethinking. Coal is the primary source of electricity generation and without developing alternate source of energy, just transition will not take place in India. Just Transition should ensure environmental protection, decent work, social inclusion and poverty eradication. It has been observed that different agencies are advocating only environmental issues. Unless other important principles of just transition like decent work, social inclusion and poverty eradications are not addressed in letter and spirit just transition will be a dream.



JUST TRANSITION IN INDIA'S COAL SECTOR: LINKING CLIMATE ACTION WITH THE DECENT WORK AGENDA

Vaibhav Raaj, Programme Officer, International Labour Organisation



The grueling nature of work of a coal labourer takes a heavy toll on their health and well-being. (Source: Shailesh Andrade, Reuters)

Background

Between 1993 and 2015, the governments, workers' and employers' organizations of the world in the International Labour Conferences, deliberated upon and recognized the concepts of the informal sector and informal employment, ultimately recommending the transition of workers and economic units from the informal to the formal economy as a desired goal for all

member countries of the ILO[1]. This journey roughly coincided with the journey of the international consensus on climate action through the adoption of the UNFCCC in 1992, all the way up to the Paris Agreement of 2015. While this coincidence did not necessarily foreground informality in climate policy for a long time, the ILO and its constituents did ultimately succeed in incorporating the concept of Just Transition and decent work in the Paris Agreement.[2] Subsequently, the Sharm el-Sheikh



Implementation Plan of the COP27 proved a turning point with the introduction of a new work programme of Just Transition2.[3] Bolstering the ILO's long-drawn efforts for mainstreaming the decent work agenda in climate actions, the UN Secretary General invoked the ILO Guidelines for a just transition towards environmentally sustainable economies and societies for all (henceforth 'Just Transition Guidelines'), as a fundamental reference framework for all countries.[4] At the same time, the Secretary General brought to the centre of this discussion, the imperative of acknowledging and acting on the needs of workers in the care and informal economy. Majority of the developing world's workforce, particularly women and youth remain confined to the care and informal economies due to unsuccessful social and structural 'transitions' of our collective history. Given its size and economic prowess, India is well-poised to lead the developing world on just transition pathways that are effective and affordable.

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Informality in India's Coal Sector

Overwhelming informality and precarious inclusion of marginalized identities into the workforce are well-documented features of India's labour market. The coal sector is no exception to this norm. As the permanent-formal workforce (with statutory protection of their entitlements and rights, including that of collective bargaining) of public and private coal enterprises continues to dwindle, the sector's workforce is now dominated by layers of informality.[4][5] They face varying degrees of informality and exclusion from statutory protection and benefits.

Type of Employment	Estimated Number of Workers
Direct Employment (CIL and subsidiaries)	239,000 - 369,000[6][7][8]
Contract Workers	128,000[9][10]
Indirect Employment	Significant (more than a million) but not precisely quantified[10]

Table 2

Social Dialogue and Workers' Welfare in the Coal Sector

It is important to take note of the existing social dialogue [11] platforms in India's coal sector, such as:

- The Standing Committee on Safety in Coal Mines [Tripartite; focused on safety]
- The Joint Bipartite Committee for the Coal Industry (JBCCI) [focused on wages, salaries, and allowances, as well as service conditions and welfare measures]
- The Board of Trustees of the Coal Mines Provident Fund Scheme, 1948 [Tripartite]
- The Apex Bipartite Committees in all subsidiaries of Coal India Limited [focused on employees' service conditions, welfare, and other strategic matters]

In addition, coal companies and trade unions in some of the coal producing districts have also been known to liaise with local government institutions for community welfare activities. It is a subject of further research to understand the scope and extent to which these stakeholder platforms, coal companies' welfare policies and trade union initiatives cater to the needs of informal workers in the sector. Further, a range of central welfare schemes such as the Atal Pension Yojana (APY), Pradhan Mantri Shram Yogi Maandhan (PM-SYM), Pradhan Mantri Jan Arogya Yojana (PM-JAY) scheme and many other schemes for informal workers in the coal-producing states of West Bengal, Madhya Pradesh, Jharkhand, Odisha, etc. contain benefits for the informal coal and allied workers. However, some recent field studies and anecdotal accounts reveal that these welfare measures need to go a long way to provide sustained substantive relief to the majority of coal and allied workers.

A framework for just transition

In this context, it is imperative to begin with the acknowledgement of the coal sector's complex and critical role in India's economy. Besides being the dominant source of power generation and supporting the livelihoods of millions of India's people, it is the single largest contributor to India's Railway Freight, a major contributor to the central and state revenues with significant corporate social responsibility and capital expenditure roles. Therefore, it is no surprise that India has strongly articulated its position on 'phasing-down' instead of 'phasing-out' coal.[12]

That said, it remains a fact that over the next few



decades as global coal industry contracts, job losses will escalate. Coal India itself is expected to lose 73,800 direct employee positions by 2050 [13] – implying a potential total of more than 300,000 workers losing their livelihoods and over 1.2 million people in the households [14] being impacted. While the direct employees are in a position to negotiate fair exits where inevitable, it is the informal and indirect workers who would bear the brunt of this reality. Hence it is essential to base the approach to just transition on a parallel line of action for transition to formality.

WHILE THE DIRECT EMPLOYEES ARE IN A POSITION TO NEGOTIATE FAIR EXITS WHERE INEVITABLE, IT IS THE INFORMAL AND INDIRECT WORKERS WHO WOULD BEAR THE BRUNT OF THIS REALITY. HENCE IT IS ESSENTIAL TO BASE THE APPROACH TO JUST TRANSITION ON A PARALLEL LINE OF ACTION FOR TRANSITION TO FORMALITY.

The ILO's Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204) [15] provides a comprehensive framework to address informality. On the one hand persistent informality imposes adverse work and life conditions on workers such as unregulated working hours, unsafe working conditions, low incomes, lack of job security, inadequate social protection, prevalence of unacceptable forms of forced and child labour, and a lack of representation in decision-making at all levels. On the other hand, informal enterprises suffer due to low-productivity and low quality of products and services, lack of access to finance, government incentives and schemes, etc. ultimately keeping them confined to the low-end of the value chains. Recommendation 204 of the ILO begins with an acknowledgment of these challenges of informal workers and enterprises. It advises for progressive expansion of legal coverage, lowering of exclusionary legal thresholds, and an emphasis on ensuring compliance. In effect, informal enterprises should be registered and gradually brought under all relevant legal regulations related to fiscal, labour and social security matters. This first step in turn would enable the recognition and legal protection of independent

workers. For such transition to formality to be sustainable and effective, inter-ministerial coordination for policy coherence is critical. Gaps and exclusions from comprehensive legal coverage are potent conduits for proliferation of informality.

In 2023, more than 5000 representatives of governments, employers and workers of the world's 187 countries at the 111th International Labour Conference unanimously endorsed the ILO Guidelines for a just transition towards environmentally sustainable economies and societies for all (2015) [16] (henceforth 'the Guidelines'). The Guidelines emphasise the need for social dialogue on just transition strategies. The existing social dialogue platforms (mentioned earlier) in India's coal sector must consider expanding their mandate to include relevant just transition issues. Reskilling and upskilling, especially for the young and informal workers is considered an effective approach to prepare them for the transition. In this special attention is required to recognize and address the unpaid and care work in the sub-economies of the coal sector through gender-responsive skills policies and public community-based health and care services for elderly and children. Further, a safety net of effective social security programmes for all workers would mitigate any adverse impacts of the transition. The promise of universal social security in the Code of Social Security 2020, enabled by the window of the e-Shram portal present valuable opportunities to address this concern. The Guidelines include focus on the need for economic diversification and environmental rehabilitation programmes in affected geographies. Experts have argued that the District Mineral Funds (DMFs) with suitable policy-reorientation can play an effective and crucial role in contributing to the justness of the transition.[17][18]

While the article cannot delve into the details of the strategies, it is important to include a gentle reminder on the necessary role of applying the Fundamental Principles and Rights at Work (FPRW) for the coal workers of India. The specific vulnerability of Indian coal workers

THE PROMISE OF UNIVERSAL SOCIAL SECURITY IN THE CODE OF SOCIAL SECURITY 2020, ENABLED BY THE WINDOW OF THE E-SHRAM PORTAL PRESENT VALUABLE OPPORTUNITIES TO ADDRESS THIS CONCERN.



in the face of informality necessitates that India must ratify all fundamental ILO Conventions and strive for their effective transmission in law and enforcement.

Convention Name [19]	Convention Number	Ratification Status
Forced Labour Convention, 1930	No. 29	Ratified
Abolition of Forced Labour Convention, 1957	No. 105	Ratified
Equal Remuneration Convention, 1951	No. 100	Ratified
Discrimination (Employment and Occupation) Convention, 1958	No. 111	Ratified
Minimum Age Convention, 1973	No. 138	Ratified
Worst Forms of Child Labour Convention, 1999	No. 182	Ratified
Freedom of Association and Protection of the Right to Organise Convention, 1948	No. 87	Not Ratified
Right to Organise and Collective Bargaining Convention, 1949	No. 98	Not Ratified
Occupational Safety and Health Convention, 1981	No. 155	Not Ratified
Promotional Framework for Occupational Safety and Health Convention, 2006	No. 187	Not Ratified

Caption: Table 3

Employers and Workers as Equal Partners

A just transition is the collective responsibility of all - including the government, employers and workers. While much has been said about the role and ask of the government in India at all levels, it is important to enable and engage the organizations of employers and workers to become equal partners. The ILO in India is working closely with its constituent employers' and workers' organizations to build their technical capacities, facilitate their active engagement with policy processes and help them build common agenda and actions on just transition.

The Government of India, the three largest Employer and Business Membership Organizations (EBMOs) and eleven Central Trade Unions have jointly committed in the Decent Work Country Programme for India 2023–

2027, to working for full and productive employment and decent for all women and men, including through formalization and just transition.[20] Towards this goal, the ILO continues to work with young business and trade union leaders on developing the priorities, policies and a foresight for an inclusive, fair, environmentally sustainable transition that guarantees decent work and social protection based on social dialogue.

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COAL MINING, INFORMAL LIVELIHOODS, AND ENERGY TRANSITIONS

Itay Noy, Research Fellow, Department of Anthropology, University College London



An opencast coal mine in Jharkhand (Source: Author's own)

In the resource-rich tracts of Jharkhand, eastern India, large numbers of rural Adivasi (or tribal) men and women – one of the country's most marginalised groups – have over the past decades come to depend on coal-based livelihoods. Rather than being employed in the state-run opencast mining projects that encroach on their lands, however, where jobs are few and competition high, most of them have to earn a living through informal and precarious forms of coal-based work. The most prevalent of these is coal peddling. Between 2015 and 2017, I lived and carried out research in a mining-affected Adivasi village to better understand this form of livelihood.

Coal peddling involves scavenging coal from mines' storage depots, coking it, loading it on bicycles, and pushing it to the main road to sell as cooking and heating fuel – either to restaurants and teashops or to makeshift roadside stalls that buy coal from villagers and sell it to passersby. It is backbreaking labour: a full cycle load of five bags of coal weighs up to 150 kilograms, and yields earnings of about 250 rupees, or US\$3. As a form of work, moreover, peddling coal is not only informal; the gathering of coal from mines is illegal, and is often carried out in the early morning hours, before the security guards have arrived. Coal companies, however, typically turn



COAL PEDDLING INVOLVES SCAVENGING COAL FROM MINES' STORAGE DEPOTS, COKING IT, LOADING IT ON BICYCLES, AND PUSHING IT TO THE MAIN ROAD TO SELL AS COOKING AND HEATING FUEL – EITHER TO RESTAURANTS AND TEASHOPS OR TO MAKESHIFT ROADSIDE STALLS THAT BUY COAL FROM VILLAGERS AND SELL IT TO PASSERSBY.

a blind eye to this activity, arguably as a way to deflect the risk of agitation by villagers as a result of unrealised hopes or expectations of colliery employment, combined with the adverse impact of mining on local living environments.

With job opportunities scarce – especially for generally less skilled groups such as rural Adivasis¹ – and local casual wage labor opportunities limited, earnings from peddling coal is often Adivasi villagers' only practical

¹ Even the fact that, as part of what is known as the reservations system, a fixed quota of public sector employment posts are reserved for Adivasis (along with Dalits and Other Backward Classes), does not do much to ease the situation for my interlocutors. Despite the reservations system, access to state employment among most local Adivasis has remained considerably limited. The common view, not necessarily unfounded, is that the majority of reserved jobs reach a narrow segment of mostly urban, more educated, and better connected Adivasis.

option for sustaining their livelihood. For this, however, they rely on the coal extracted by mines. Indeed, while my interlocutors' often expressed grievances about the impact of mining – from the expropriation of land to the blasting that causes their mud house walls to crack, to the swirls of coal dust contaminating the air and soil – they feel highly dependent on the coal it produces. Rather than resisting local mining projects, then, as is often assumed by critical scholars and activists, villagers have become entangled in the economy of extraction, and implicated in (informal) coal-based livelihoods for their very survival and social reproduction.

This dependence, however, is closely accompanied by significant uncertainty – not only around the illegality of peddling coal but also in relation to the natural resource on which this work relies, which is depletable on the one hand and environmentally detrimental on the other. Coal mines generally have a lifespan of between two and five decades. The end of coal, for my interlocutors, is at

VILLAGERS HAVE BECOME ENTANGLED IN THE ECONOMY OF EXTRACTION, AND IMPLICATED IN (INFORMAL) COAL-BASED LIVELIHOODS FOR THEIR VERY SURVIVAL AND SOCIAL REPRODUCTION.



Adivasi villagers scavenging for coal (Source: Author's own)





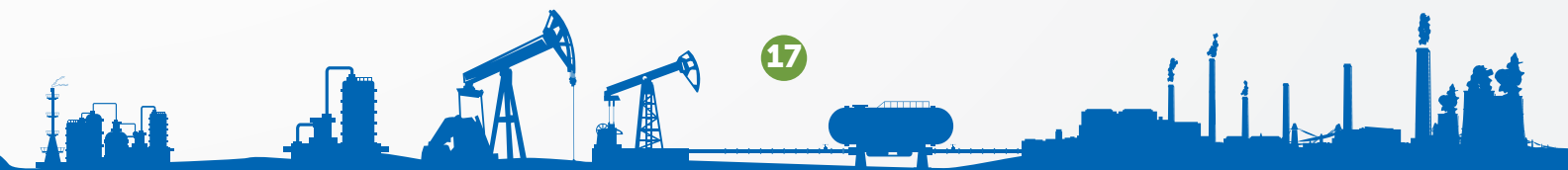
Adivasi villagers pushing coal on their bicycles to sell (Source: Author's own)

present a distant enough reality so as not to cause too much anxiety, but nevertheless looms on the horizon if not for them, then for their children.

National and global net zero targets, in the meantime, while crucial for mitigating climate change, present another threat to coal peddles' livelihoods. India has recently pledged to achieve net zero carbon emissions by 2070, and has committed to winding down the use of coal. While this phasedown is without a clear timeline and, with the country's reliance on coal for energy generation, is laden with challenges, an eventual shift away from coal will bear consequences for all those whose livelihoods are tied with it. Public sector mining employees – whose work is governed by labour laws and benefits from union recognition – are unlikely to simply lose their jobs without the offer of alternative employment, a voluntary retirement scheme, or other forms of compensation. Coal peddlers, by contrast, who

NATIONAL AND GLOBAL NET ZERO TARGETS, IN THE MEANTIME, WHILE CRUCIAL FOR MITIGATING CLIMATE CHANGE, PRESENT ANOTHER THREAT TO COAL PEDDLES' LIVELIHOODS.

inhabit the informal margins of the coal economy, lack any form of labor protection, and face the risk of being stripped of their primary means of livelihood, with no feasible alternatives. This highlights a fundamental tension in debates about energy transitions and environmental sustainability: while the survival of humans and the planet seems to require breaking away from fossil fuels, that of marginalised communities in places such as eastern India hinges on continuous access to coal. Recognising and addressing this tension should be integral to any effort towards a just transition.



THE FOOTPRINT OF THE COAL INDUSTRY ON LIVELIHOODS IN RURAL JHARKHAND

Setu Pelz, International Institute for Applied System Analysis



Informal labourers return and converse after a long day's work. (Source: TERI)

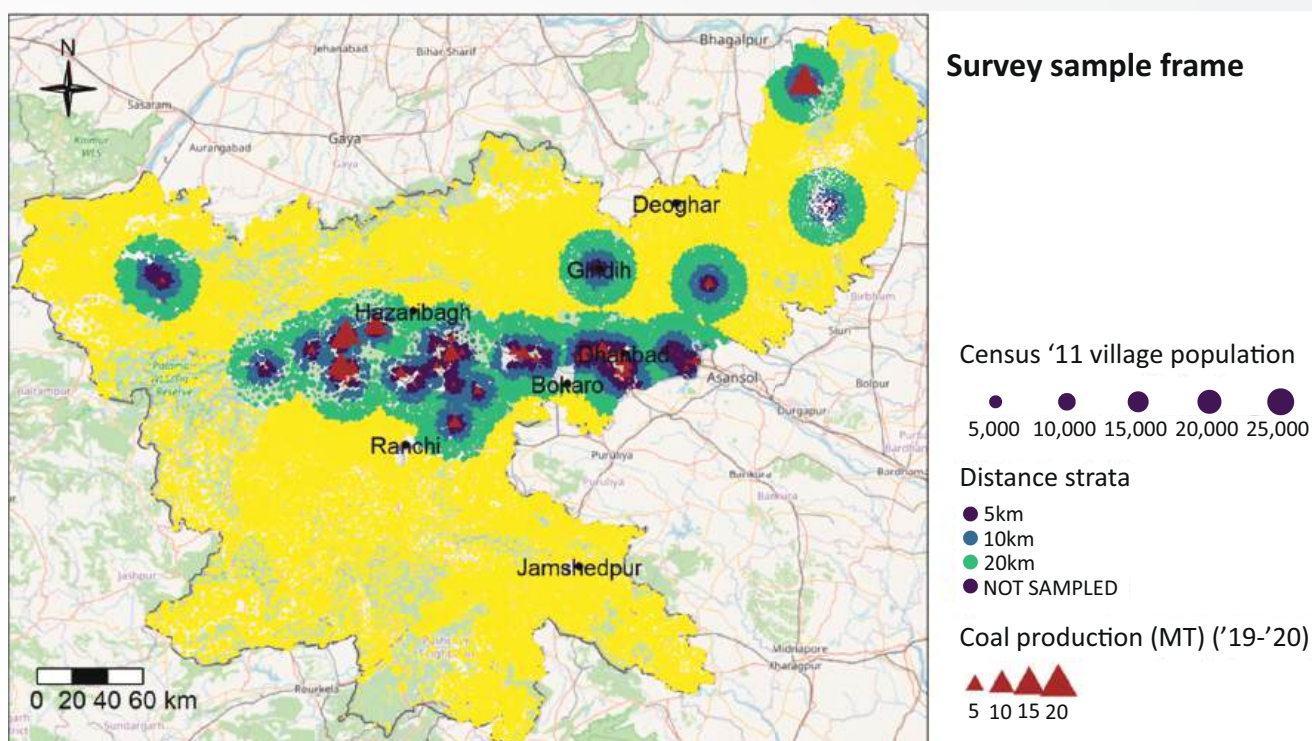
Jharkhand, one of India's largest coal-producing states, faces numerous socio-economic and environmental pressures. High poverty rates, informal employment and concentrated coal production in specific districts pose challenges in securing a just transition to a growing low-carbon economy. Here I summarise a recent empirical article examining the spatial relationship between the distribution of household livelihoods and proximity to active coal mines in rural areas of the state.[1]

Motivating this work, recent literature on just transitions in coal mining districts in India has highlighted the need to go beyond focusing on formally employed

coal workers. Coal extraction tends to dominate local economies, creating a heavy reliance on the sector. The shift of livelihoods to coal-related jobs has often been

THE SHIFT OF LIVELIHOODS TO COAL-RELATED JOBS HAS OFTEN BEEN FORCED, LEADING TO DETRIMENTAL SOCIO-ECONOMIC OUTCOMES FOR LARGE SHARES OF THE COAL-PROXIMATE POPULATION.





Map 1

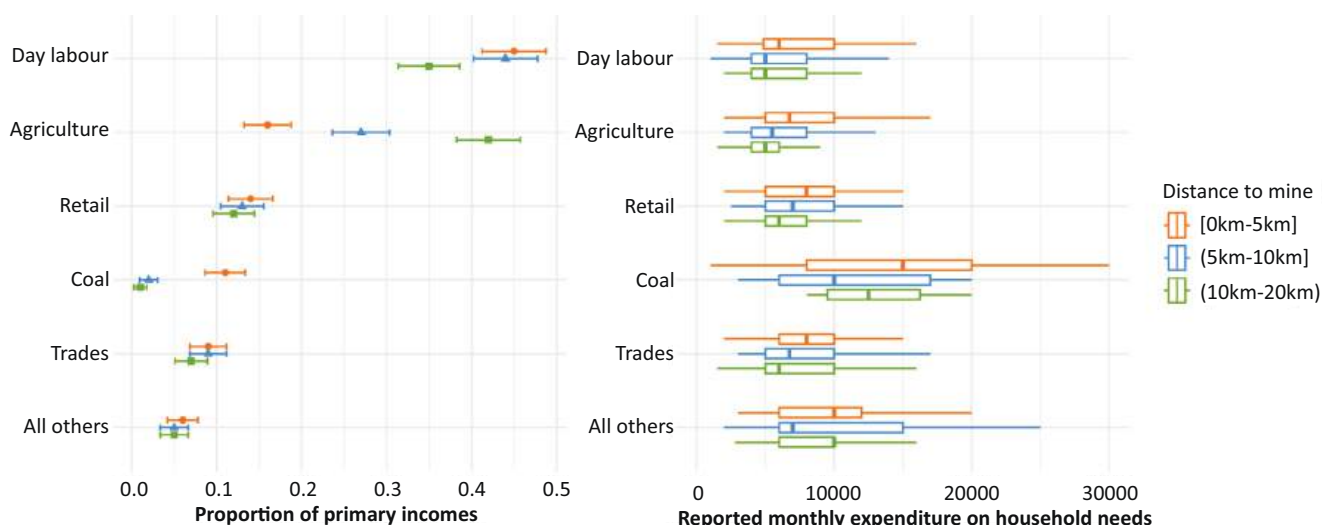
forced, leading to detrimental socio-economic outcomes for large shares of the coal-proximate population. This same population is at risk once again, albeit in the substantively different context of a rapid energy transition on the path to achieving globally agreed climate goals. Understanding the spatial patterns of rural livelihoods in the state displaced or affected by existing coal mining can inform the targeting of policies that mitigate the negative externalities of the energy transition and materially improve the lives of those affected.

We conducted a telephone survey with 2,000 households stratified by their distance from the nearest coal mine (within 5 km, 5-10 km, and 10-20 km), adjusted for proximate production. Our findings indicate that rural coal-based livelihoods are predominantly concentrated within 5 km of active mines in the state, where at least 10% of households rely directly on the coal-sector. This direct dependence falls close to zero between 5-20 km from active mines, where we observe increasing shares of agricultural incomes related to increasing distance from peri-urban and urban agglomerations. We identified similar spatial trends for households not employed in the coal sector when querying the importance of the sector for their non-coal livelihoods. This latter subjective self-assessment suggests that households not

directly dependent on the coal sector but increasingly proximate to mines are also concerned of the broader effects of a transition on their local economies. These chained dependencies are exacerbated by the rate of informal employment, reflecting at least a third of the employment types across all three distance bands and encompassing nearly half of all households.

Our findings suggest that both formal/informal and direct/indirect coal sector livelihood dependence is spatially concentrated around active mines, rather than across the entire rural population. Objectively measured direct livelihood dependence is evidently constrained to within 5km of coal mines whereas subjectively measured indirect dependence can reverberate to other industries at greater distances from the mines. To ensure vulnerable

TO ENSURE VULNERABLE POPULATIONS ARE NOT LEFT BEHIND IN THE ENERGY TRANSITION, RURAL ECONOMIC DIVERSIFICATION MUST BOTH CONSIDER THE SHARP SPATIAL FOOTPRINT OF THE COAL INDUSTRY AND BROADER EMPLOYMENT DEFICITS IN THE STATE.



(Source: Author's own)

populations are not left behind in the energy transition, rural economic diversification must both consider the sharp spatial footprint of the coal industry and broader employment deficits in the state. New targeted policies providing job training and guarantees in areas proximate to mines, along with building on policies addressing informal labour more broadly, were found to be welcome interventions to accelerate mine closures and improve access to decent livelihoods. We also observe that despite the significant role of the coal industry in the state, there was limited trust in its ability to improve local livelihoods. Instead, respondents placed greater trust in the state government, with a strong preference for investments in new jobs to occur in nearby villages rather than distant urban centres. This highlights the importance of localizing economic diversification efforts and ensuring that they effectively address the specific needs of coal-proximate communities.

Based on these findings, three key policy recommendations emerge. First, just transition interventions and policies addressing formal and

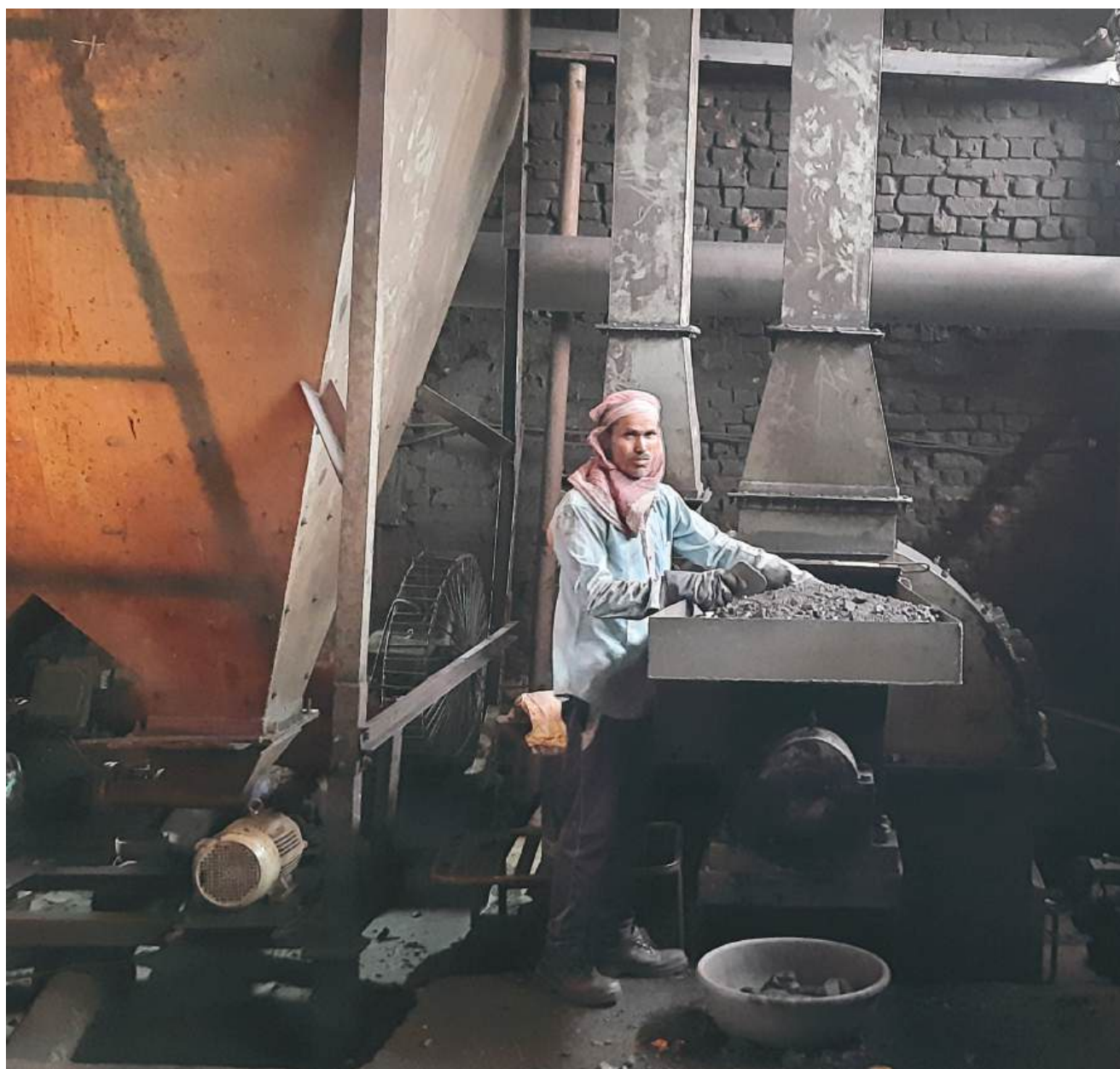
informal coal employment must be sharply targeted around active coal mines, considering the spatial concentration of skills and future employment deficits. Second, greater emphasis must be placed on undoing the displacement caused by coal mining, using local resources, indigenous skills, and cross-sectoral investments to enhance local livelihoods through mechanisms like the district mineral fund (DMF), with the support of the state government. Finally, strengthening broader policies targeting informal labour in rural areas of the state are necessary to ensure those most vulnerable are not left behind by energy system transitions that will likely have ripple effects on secondary and tertiary industries.

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JUST ENERGY TRANSITION IN STEEL MANUFACTURING: INSIGHTS FROM THREE SECONDARY STEEL CLUSTERS IN INDIA

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Coal feeding operation (Source: Author's own)

Introduction

The iron and steel sector plays an important role in the Indian economy and has been a core pillar of its economic and industrial development. India accounts for about 6% of the global installed capacity and is the world's second largest producer of crude steel, after China. The sector has been vibrant and growing rapidly. Contributing around 2% to the nation's gross domestic product (GDP), it is also a major contributor towards employment generation with about 2.5 million people employed directly and indirectly [1].

The Indian steel industry exhibits diversity with wide variety of technologies employed and the range of firm sizes. Majority of secondary steel producers use coal to manufacture sponge iron/ direct reduced iron (DRI) which is further processed to make steel. Crude steel products like billets and ingots are subsequently processed into finished steel products by re-rolling them into angles, strips and bars. Small and medium scale re-rolling mills use coal in their reheating furnaces for this process. These plants are geographically clustered around coal mining belts in Eastern and Central India around Durgapur, Giridih, Raipur, Jharsuguda and so on.

This paper draws on the empirical insights from recent studies conducted by TERI among three steel clusters – Durgapur (West Bengal), Giridih (Jharkhand) and Raipur (Chhattisgarh). The narrative includes the perspective of workers as well as people indirectly affected, such as their families. The following section highlights some of the major coal-based micro, small and medium enterprises (MSMEs) in India and discuss the context for an equitable energy transition for them. Insights from field surveys/ interviews conducted in the three steel clusters and policy recommendations are presented in subsequent sections.

Industrial clusters

The industry sector is the largest consumer of commercial energy. The sector accounts for nearly half of the total primary commercial energy consumption in the country [2]. The small-scale industry sector is the backbone of industrial activity, accounting for over 90% of industrial enterprises, 45% of the industrial output, 40% of total exports and employing the largest number of people after agriculture [3]. Many energy-intensive industries in the MSME sector like sponge iron, red clay bricks, steel re-rolling mills, foundry, textile dyeing, food processing, pulp and paper and so on use coal in their manufacturing



Workers in coal yard (Source: Author's own)

processes and emit high volume of greenhouse gases (GHGs). Incidentally, some of these sectors are also large employment providers in India. This necessitates adopting a Just Transition approach to coal phase-out that addresses mitigating climate change while ensuring workers, communities and businesses are protected, and economic gains are made.

In India, to decarbonize the industry sector, numerous strategies and roadmaps are being proposed to promote the rapid and widespread adoption of green hydrogen, renewable energy power sources and carbon capture technologies. However, these strategies being proposed for large-scale plants may not be technoeconomically viable for small-scale industries. Amid these developments, there are growing calls for 'Just Transitions', arguing that typical ways of responding to change (e.g. closing a factory), will exacerbate the socio-economic inequities in the society. In the Indian context, significant research emphasizes the need for a structural transformation of the coal sector to achieve a just transition. This transformation includes governance reforms to develop a comprehensive framework at national, state, and local levels, focusing on consensus-



building, socio-economic transformation, and green development [4] and highlight the social effects of moving away from coal [5]. Furthermore, research has focused on potential implications of these changes on certain sub-populations such as women [6].

Insights from three steel clusters

The area surrounding the Chota Nagpur Plateau, located in eastern part of India, covering the states of Jharkhand, West Bengal and Chhattisgarh has a dense concentration of steel clusters. These clusters heavily rely on coal as a primary energy source for steel manufacturing. To curb carbon emissions from production processes effectively, nothing short of industrial transformation is required [7].

The shift from coal to low carbon fuels like green hydrogen will lead to closure of a large number of small and medium steel industries resulting in job losses and overall economic downturns in region. Local communities built around coal-based industries will face the risk of displacement, while workers may struggle with skills mismatches as they transition to new sectors. The disproportionate burden of energy transition on marginalized sections of the population would need addressing. Preserving job losses by re-skilling affected workers and communities amid this transition will be crucial.

A primary survey was conducted to examine the socio-economic impacts of coal phase-out on coal-dependent steel industries in three clusters in the Chota Nagpur region. Durgapur emerged as a major steel hub after the establishment of Durgapur Steel Plant, a large integrated steel plant, in 1960. While the industry grew in Giridih and Raipur in 1990s due to easy availability of coal, power, and land. The study focused on various dimensions such as employment, workforce socio-economic demographics and alternative employment opportunities. The findings revealed distinct differences between the steel industries across the clusters. Among these clusters, Durgapur

exhibited relatively better conditions for the workers in terms of job security, employment opportunities, awareness levels, literacy rates, daily wage rates, working hours and social benefits. In contrast, Raipur and Giridih presented slightly less favorable conditions for workers, although specific nuances varied within each region. All the clusters have a prevalence of local workers, complemented by migrants from neighboring districts or states

The study revealed that the workers in all three clusters receive poor wages and face a high degree of socio-economic stress in their daily life. It identified several challenges faced by steel workers such as the absence of worker unions, long working hours, irregular salary disbursement, lack of safety measures, inadequate financial compensation for workplace accidents and non-existence of training/skilling opportunities. Basic safety equipment like helmets, goggles, gloves and protective clothing are often not provided or utilized, even in hazardous conditions, leading to frequent serious injuries. Most of the workers are hired through labour contractors, resulting in temporary employment, particularly in small and medium-sized plants. Temporary workers in these steel plants are most vulnerable to exploitation by their contractors. Except for Durgapur, the temporary workers in other clusters do not have social benefits like provident fund (PF), employees state insurance (ESI). The situation is different in West Bengal since labour unions are active in the state due to its history of left front government for 34 years (1977 to 2011). The absence of labour unions has led to exploitation of workers by the contractors, which is more prevalent in Giridih and Raipur clusters. Often, wages are not paid on time, and a portion is retained by the contractor, making it difficult for workers to leave their employment.

The study underscored the need for formulating and implementing comprehensive interventions and policies to maintain overall well-being and livelihoods of workers across industrial clusters and to ensure equitable and sustainable energy transition.

Policy Recommendations

Without appropriate policies and regulations, the phase-out of coal risks significant economic and job losses in MSME clusters dependent on coal. Hence, Just Transition demands meticulous planning and execution. The following recommendations, which are by no means exhaustive, can be considered.

THE SHIFT FROM COAL TO LOW CARBON FUELS LIKE GREEN HYDROGEN WILL LEAD TO CLOSURE OF A LARGE NUMBER OF SMALL AND MEDIUM STEEL INDUSTRIES RESULTING IN JOB LOSSES AND OVERALL ECONOMIC DOWNTURNS IN REGION.





Coal unloading in progress (Source: TERI)

1. Energy transition must consider industry-specific context

The steel industry is a key employer in the industrial clusters of the Chota Nagpur Plateau region. It is crucial to design transition strategies and actions that are appropriate for the steel industries in the region. Policy objectives should aim to foster an enabling environment for adoption and dissemination of green technologies, while stimulating economic activity through public interventions. Both the issues must be addressed simultaneously in the policy making process to achieve coherent outcomes. For instance, promoting green hydrogen among small and medium sponge iron industries through macro policy measures like production-linked incentives and tax incentives would be ineffective when other significant barriers – such as technological limitations in steel making, high capital cost and operating cost prohibit their wide adoption in such clusters. Therefore, the government must devise a green transition strategy that balances overarching policy measures with the needs of the specific industry clusters.

2. Policies and regulations to achieve green energy transition must leave none behind

The steel industries employ a large number of workers – many of them are temporary or contractual in nature and have no social security or legal protection.

A just and equitable transition demands a people-centric approach, prioritizing vulnerable groups like these workers and their families. Since there are less economic alternatives available in the region, sustainable transition necessitates robust support for alternative livelihoods, skill development, and adequate public financing. Currently, urban-centric training facilities pose accessibility challenges for rural workers. A significant percentage of temporary workers working in the steel plants are involved with coal handling. The shift to new technologies threatens the livelihoods of these temporary workers. In addition, a large number of indirect jobs, especially of people involved in transportation of coal by rail/road and those employed by commercial establishments in surrounding areas are likely to be impacted. There is a need to create alternative economic opportunities for these sections of the population. These could involve skilling them in other trades such as welding, fitting, electrical work, masonry, and similar fields, or providing training for alternative employment opportunities in sectors like agriculture or rural-based industries such as agro-processing and brick manufacturing. Development of skill training infrastructure at the cluster-level will play a crucial role. The training infrastructure should be set up in partnership with local industry and business associations to align with both immediate and future workforce needs.

3. Investments in green energy infrastructure must be concurrently complemented by social supports

A large number of indirect as well as induced jobs are created from economic activity in the area but are not directly related to the steel industries. A package to protect the indirect and induced jobs affected by the decline in industries that consume coal needs to be implemented. The package could include services and assistance for the affected people consisting of helping them to adopt different trades and general career services. Since it is unlikely that all the indirect

WITHOUT APPROPRIATE POLICIES AND REGULATIONS, THE PHASE-OUT OF COAL RISKS SIGNIFICANT ECONOMIC AND JOB LOSSES IN MSME CLUSTERS DEPENDENT ON COAL. HENCE, JUST TRANSITION DEMANDS METICULOUS PLANNING AND EXECUTION.



A JUST AND EQUITABLE TRANSITION DEMANDS A PEOPLE-CENTRIC APPROACH, PRIORITIZING VULNERABLE GROUPS LIKE THESE WORKERS AND THEIR FAMILIES.

job losses cannot be compensated by jobs created in the clean energy sector; a wider strategy for creation of new economic activities is needed, including incentives for development of other industries or service-oriented business in the affected areas.

4. A robust policy framework to assist rehabilitation of workers and communities

Government policies on investment, taxation, and the environment play a significant role in determining the sectors where new investments are made. Some countries, like Germany, have successfully implemented public policies to aid in the rehabilitation of workers and communities affected by the closure of coal mines. There is a need to refine existing rehabilitation policies to address Just Transition issues. This is crucial as the potential clusters facing impact already experience low per-capita incomes, low literacy rates, persistent poverty, sluggish economic growth, and concerns about job security.

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NAVIGATING THE COMPLEX PATH TO A JUST TRANSITION: ILO'S VISION AND THE SOUTH AFRICAN EXPERIENCE

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A boy rests after collecting coal, preparing to sell his haul to the local buyer (Source: TERI)

ILO and its vision of Just Transition

ILO visions Just Transition as 'A just transition for all towards an environmentally sustainable economy ... needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty' (ILO, 2015, p. 4). ILO acknowledges that 'the world of work and the natural environment are tightly linked' (Saget et al., 2021, p. 468) and identifies nine

'Key policy areas to address environmental, economic, and social sustainability simultaneously included: I. Macroeconomic and growth policies II. Industrial and sectoral policies III. Enterprise policies IV. Skills development V. Occupational safety and health VI. Social protection VII. Active labour market policies VIII. Rights IX. Social dialogue and tripartism' (ILO, 2015, p. 7). ILO states that economic restructuring and JT could result in displacement and possible job losses and job creation (ILO, 2015, p. 5) and emphasizes in creation of



resilient workplaces, preparing the community to tackle the problem of climate change, forced migration and minimize the damage by climate change. ILO anticipates moving towards an energy-efficient economy would generate 24 million employment opportunities while simultaneously eliminating six million positions globally. This shift is forecasted to yield 'a net increase of 18 million jobs by the year 2030' (ILO 2018 – Greening with Jobs, n.d., p. 43).

Types of Just Transition

John Sweeney, a prominent figure among global union leaders, 'referred to just transition as being protective, proactive, and transformative' (Vachon, 2021, p. 116).

'The protective vision of JT typically focuses on the site of employment and the surrounding community' (Vachon, 2021, p. 117). The fundamental aim of this JT vision is to protect the jobs of workers. It supports workers' demands for health education and full wages for people who would lose their jobs because of the energy transition.

The proactive vision of JT adds two additional features to the vision along with the previous vision of JT. It demands public investment at scale by the state to support the 'economy to a more sustainable model,' and also demands the participation of workers in policy-making, development, and administration of the JT

ILO VISIONS JUST TRANSITION AS 'A JUST TRANSITION FOR ALL TOWARDS AN ENVIRONMENTALLY SUSTAINABLE ECONOMY ... NEEDS TO BE WELL MANAGED AND CONTRIBUTE TO THE GOALS OF DECENT WORK FOR ALL, SOCIAL INCLUSION AND THE ERADICATION OF POVERTY' (ILO, 2015, P. 4).

program (Vachon, 2021, p. 119). It aims to address the social injustice of the section of society who are currently left out from the 'energy economy or suffering from the consequences of the fossil fuel industry' (Vachon, 2021, p. 119).

The transformative JT aims for an entire transformation of the socio-economic model addressing the root cause of the current existing problem of environment



Coal laborers retrofit their bicycles to carry larger loads of coal to the market (Source: TERI)

degradation, exploitation of workers, and social injustices. It aims to eliminate social and economic inequalities and envisions a post-capitalistic world order. It also recognizes the historical exploitation of racism and colonialism to create divisions among the global working class and aims to address this legacy of injustices directly through its approach to tackling the climate crisis (Vachon, 2021, p. 120).

Thus, it can be argued that ILO, acknowledges the importance of the state, workers, and employers as active and vital forces in bringing change and ensuring a safe environment for present and future generations. ILO holistically and meticulously considers various aspects related to just transition including labourers, environment groups, industry, economics, and others to promote environmental sustainability. It also acknowledges the concept of common but differentiated responsibilities and advocates for a 'no one fit solution' among different stakeholders and geographies for making JT a success.

In the next section with the case study of South Africa we would try to answer why even protective JT is difficult to implement and how complex is its implementation. JT that comes close in practice despite having multiple progressive definitions and theories of JT is the protective vision of JT. The protective JT envisions a limited role for workers which is limited to the protection of their rights. It intentionally keeps workers at bay and does not provide space in policy-making and co-vision JT. It also fails to challenge the neoliberal forces and thus advocates for a limited role of the state.



THE PROACTIVE VISION OF JT ADDS TWO ADDITIONAL FEATURES TO THE VISION ALONG WITH THE PREVIOUS VISION OF JT. IT DEMANDS PUBLIC INVESTMENT AT SCALE BY THE STATE TO SUPPORT THE 'ECONOMY TO A MORE SUSTAINABLE MODEL,' AND ALSO DEMANDS THE PARTICIPATION OF WORKERS IN POLICY-MAKING, DEVELOPMENT, AND ADMINISTRATION OF THE JT PROGRAM (VACHON, 2021, P. 119).

South Africa: A story of initial support and repulsion at later phase

South Africa is a middle-income economy with multiple trade unions active in fossil fuel and allied industries are the ones who would be mostly affected by the policies of JT so it becomes important to incorporate their views and opinion while arguing a case for JT. COP 17 was held in extremely coal-dependent South Africa, in 2011 and the South African story of Just Transition can be traced to this date when the Green Economy Accord was



Women collecting coal to use for their daily livelihood (Source:

signed between the Business, Labour, and South African governments. Following the footsteps and believing in the commitment of the Government and Industry Congress of South African Trade Unions (COSATU), the nation's largest union federation, signed the resolutions regarding climate change. (Sikwebu & Aroun, 2021, p. 59). National Union of Metalworkers of South Africa (NUMSA) one of the affiliates of COSATU advocated for comprehensive policy and strategy towards environmental sustainability. They supported and backed the principle of a JT, acknowledging the developing countries' right to industrialize while highlighting their responsibility to address climate change. (Sikwebu & Aroun, 2021, p. 59). The climate change policy adopted by COSATU was considered a progressive and important 'step towards strengthening the linkages between labour and environmental activists' (Sikwebu & Aroun, 2021, p. 60).

The Renewable Energy Independent Power Producer Procurement Programme (REIPPP) was launched in 2011 and later South African government adopted the National Development Plan (NDP) intending to promote renewables and environmental sustainability (Sikwebu & Aroun, 2021, p. 72). There has been a change of position of trade unions after a decade which can be understood by 'carbon lock-in' (Unruh, 2000) where 'trade unions themselves can either be locked in or act as facilitators of carbon lock-ins' (Sikwebu & Aroun, 2021, p. 61) which creates problem in the energy transition. Labour Unions changed their position from supporting renewable industry to supporting coal industries as they succumbed to the pressure from within and outside. They went to court against the government to stop the government from signing the 'renewable energy (RE) contracts with 27 Independent Power Producers (IPPs) and 'in its bid to stop the signing of the contracts, the union also warned of massive job losses along the coal supply chain' (Sikwebu & Aroun, 2021, p. 60). NUMSA and COSATU also described the contract as 'a form of state capture by private interests, and an act against state-owned electricity utility Eskom and the broader public' (Sikwebu & Aroun, 2021, p. 60).

The union expressed skepticism towards the programs, asserting that they were insignificant and could not effectively counter the influence of the fossil fuel industry. The questions about ownership, and control of the program have been raised by the unions fearing that the control would be with the MNCs. In addition, they also emphasized 'Transformative Justice; a socially owned



renewable energy sector, and argued that public and democratic ownership is necessary for transition as they feared that foreign MNCs would flood their countries with foreign goods. (Sikwebu & Aroun, 2021, p. 68). Moreover, concerns have been raised regarding the renewable energy value chain, including the sourcing of components from both local and international markets, as well as the necessity for greater transparency in technology transfers. The jobs created in the renewable energy sector would be at the early stage, mostly in the construction phase and most of the vital parts would be imported. The local manufacturer faces the challenge of technology transfer and Intellectual Property Rights in trade, thus making it difficult for any developing market to create domestic ecosystem. The high skilled positions would be filled by labour foreign labours. The union is skeptical of the quality and quantity of the jobs created. (Sikwebu & Aroun, 2021). The workers feared that these decisions would lead to job losses and speculated about the quality and sustainability of the newly created jobs. Further, there's no guarantee that the new jobs will be located in the same place as the old ones or that they will require the same skills. In fact, because of the different resources and technologies involved in the two forms of energy generation, likely, they likely won't. (Vachon, 2021, p. 111).

The South African government envisions just transition as an immediate mechanical transition fuelled by civil societies supporting environmental causes and pressure from international agencies. They tend to leave out unions while making policy decisions. The Union visions JT as a slow and gradual process without job losses where no one is left behind. The members of the Research and Development Group (RDG) constituted by NUMSA 'were clear that developing nations should not bear the brunt of the shift.' (Sikwebu & Aroun, 2021, p. 67). They also advocated for taking slow and steady steps towards renewables by assessing the merits and demerits of implementing them. They supported the transition but stated that transition must meet conditions like 'training and reskilling of workers, technology transfers and financial mechanisms.' (Sikwebu & Aroun, 2021, p. 68). These distinctions in visions and lack of co-visioning between the stakeholders were visible when the government (Eskom) took a unilateral decision to decommission five coal-fired power stations in 2017 which was called out by COSATU. The COSATU and National Union of Mineworkers (NUM) called out at Eskom and said their decision was hostile and act of provocation. (Sikwebu & Aroun, 2021, p. 70) The unions

made it clear that the introduction of renewables should not be the means for privatisation and jobs should not be at the stake. The leaders of COUSTA also doubted the promises and intent of the government about their job claims.

The experiences are similar in other countries too. There is massive distrust in trade unions regarding the JT. In the United States, Cecil Roberts, President of the United Mineworkers of America, responded to a query about a just transition by stating, "I've never seen one." (Vachon, 2021, p. 109). He further narrates the example of the international trade deal North American Free Trade Agreement and program designed to support workers the backdrop of it Trade Adjustment Assistance programme was a failure. The majority of workers who participated in the program did not secure employment in their taught fields. Instead, many workers who lost well-paying blue-collar jobs experienced inadequate job placement programs, resulting in them settling for low-paying positions they could have obtained without the program's assistance. Consequently, numerous unions harbour significant skepticism toward government transition initiatives. They not only lose their job but with jobs they lose social security like health insurance. The transition is thus easier when there is highly subsidized or free education in place (Vachon, 2021, p. 110).

Thus, it can be argued that Trade Unions had shown initial faith in the concept of JT where they believed that JT has the potential to create jobs and accommodate workers and that energy transition must be given way for a clean future. They also acknowledged that it is their duty and responsibility to address climate change. However, the political economy at the local level tends to be more powerful and challenges the decisions and commitments made at the national level by trade unions. The Labour unions often succumb to the pressure from within as their majority of members come from the fossil fuel and allied polluting industries lobbies. Their contestation from within creates hindrances in protecting labour rights and derails the process of negotiation and moving towards a just transition. It is misleading to suggest that trade unions are unable to grasp environmentally sustainable solutions and instead opt to endorse the fossil fuel industry. In reality, their decisions stem from concerns about survival, maintaining standards of living, and securing better livelihood opportunities.

Conclusion

By way of conclusion, I would like to note that ILO's



vision of JT is not just comprehensive, but it also addresses multiple facets of sustainability and inclusivity. However, the practical implementation of JT faces significant hurdles due to conflicting interests, economic dependencies and, above all, the challenge of ensuring that no one is left behind. The South African experience underscores the need for gradual, well-managed transitions that incorporate the perspectives and needs of all stakeholders, particularly workers. Therefore, successful JT requires robust social dialogue, fair policies, and mechanisms to support workers through reskilling and job placement, while ensuring that the shift to a green economy is truly just and equitable for all.

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THE SOUTH AFRICAN EXPERIENCE UNDERSCORES THE NEED FOR GRADUAL, WELL-MANAGED TRANSITIONS THAT INCORPORATE THE PERSPECTIVES AND NEEDS OF ALL STAKEHOLDERS, PARTICULARLY WORKERS.

In N. Räthzel, D. Stevis, & D. Uzzell (Eds.), *The Palgrave Handbook of Environmental Labour Studies* (pp. 59–81). Springer International Publishing. https://doi.org/10.1007/978-3-030-71909-8_3



PHOTO ESSAY

TERI'S PILOT INITIATIVE FOR A PEOPLE-CENTRIC TRANSITION IN GIRIDIH, JHARKHAND

We are proud to share that during the past 5 months we've made a relentless effort in testing an idea of economic diversification in the coal belt region of Giridih, Jharkhand. We created a pathway for putting our words to action in order to demonstrate how a successful transition away from fossil fuels would fructify. This pilot was specifically aimed at women and adolescent girls in the Giridih open cast and Kabribad coal mines whose lives are intrinsically linked with the local coal economy.

The target group was females between 18-45 years of age who had basic reading, writing and numerical skills and the objective was to impart technical as well as soft skills to them through which they can plan their entrepreneurial journey. Through this intervention we envisaged to make them future-ready by enhancing their skills which would in turn build their confidence and establish themselves as self-reliant business entrepreneurs.

1. As part of the well thought-out strategy, around 160 women (40 from each gram panchayat - Kongdi and Karharbari from Giridih OC, and Chilga and Tikodih from the Kabribad mining area) were selected and imparted financial literacy training. This was done through workbooks on basic financial concepts such as income, savings, loans and investments.
2. From this larger group, 80 women were selected for business generation idea workshop and they were made to brainstorm and discuss what businesses would survive and thrive in the region and what are the requisite qualities to sustain these activities. This was followed by a rigorous market mapping exercise to understand the market demand-and-supply potential as well as gauge the competition landscape.
3. Once this was complete, 60 women in total were selected for the next phase which was technical

training for business start-ups in which they were imparted skills to start manufacturing their products that have demand in the local market. The women had short-listed making products like incense sticks, mops and wipers, home décor items such as cushion, designer bags as well as beautician training as potential business ideas. They were provided with machines for collective use to manufacture incense sticks and mops/wipers and taught how to operate these. Similarly, training was provided to stitch designer bags and to operate beauty parlors. Local trainers were hired to impart necessary skills to these women.

4. In the final stage, 49 women came forward to join this collective effort through formation of Joint Liability Groups (JLGs) at NABARD and started their businesses. Special effort was made to establish connect with the market, vendors were identified and work orders procured to create a sustainable supply chain.

We are immensely proud to share that 5 types of enterprises were started by these women – namely, incense stick production, mop and wiper manufacturing, production of home decor items such as handicraft cushions, cloth and jute bag production and, beauty and wellness services. These enterprises include four group enterprises and eight individual start-ups.

The effort put in these past months has brought to the fore stories of confidence, success and willingness to lead a life different from before – a life of improvement and betterment. They wake up with a renewed hope of an alternative reality – a reality they are shaping themselves.

The women have mentioned how this initiative has instilled in them a sense of purpose and drive. We're glad to note that this newfound voice and dignity has enabled them to make their own decisions and take forward this pilot.





A situational analysis was done across 8 villages of Giridih where 240 households were covered. The team conducted multiple interactions with the villagers to understand their vulnerabilities, the community's socio-economic dynamics, gather stakeholder perceptions and share our project objectives.





The 160 women selected for financial literacy training would begin these sessions with fun, interactive ice breaker sessions which helped in team building and productive brainstorming sessions later.



Financial training being imparted to the women and adolescent girls through easy-to-read workbooks in Hindi where basic financial concepts such as income, savings, loan, investment, budget preparation etc. were illustrated through images and visuals. A pre- and post- knowledge dissemination beneficiary assessment was also done.





Women during the business idea generation workshops where they came up with a list of businesses which would do well in the region. These ideas were then evaluated through a SWOT analysis and market mapping exercise to gauge their viability in the competitive landscape of the region.



Women proudly showcasing the first round of mops and wipers that were made by them post the need-based technical training and delivery of equipment required to manufacture these. These women formed the 'Ganeesh joint liability group' (JLG) and required seed support in assembling raw materials and the machine to manufacture these items.



Women of the 'Maa Tara JLG' and 'Om JLG' involved in making incense sticks and packaging them post production.



Home decor products such as cushions as well as designer bags and potli made by these women entrepreneurs of the 'Shiv JLG' and 'Krishna JLG'. These women were provided training by local experts and they required seed support in assembling raw material and procuring stitching machines.





2 women from each village were selected and imparted beauty and wellness training to ensure that they meet all the demands of beauty, makeup, styling etc. in the village. There was high demand for this skilling as trained professionals are hard to get in such regions while the demand is high and spread throughout the year considering festivals, marriages, functions etc.



The 49 women who subsequently began the business enterprises were made to attend a multi-stakeholder workshop which was also attended by TERI members, NABARD officials, Jharkhand State Livelihood Promotion Society members etc. This event gave them a novel experience of presenting themselves as businesswomen to the world and gave good exposure of presenting their work while honing their marketing skills.

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NOTES



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The tools of pilfered coal. (Source: TERI)

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