

E-PAPER

Report

Towards a Just Transition Framework for Odisha's Mahanadi Coalfields:

Stakeholder Assessment in Jharsuguda District

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Path to Just Transition in Odisha's Mahanadi Coalfields

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Introduction

India has committed to net-zero emissions by 2070 according to its 2021 pledge at COP 26 in Glasgow, and to sourcing 50 per cent of its electricity requirements from renewable sources by 2030.

During India Energy Week, held in the second week of February 2025, Prime Minister Narendra Modi highlighted the country's recent achievements in transitioning to green energy sources. He asserted that [India was the first G-20 nation to meet the Paris Agreement goals](#) as the nation's solar energy generation capacity has grown by about [thirty times](#) in a decade, and it has now become the third largest solar energy-generating country in the world. India even wants to achieve a 500 GW renewable energy target by 2030, when Indian Railways will attain its net-zero carbon emissions target. This is highly ambitious, in the Prime Minister's own words, but the achievements of the last decade makes the government confident that India can do it.

Despite these goals and achievements, coal remains integral to India's energy landscape, [accounting for just under 50% of India's electricity capacity mix](#). Fossil-based energy sources constitute more than 80 per cent of the country's primary energy mix. Coal, still considered cheaper than most other energy sources, will continue to dominate India's energy sector for decades to come. In fact, the Indian Government plans to [triple underground \(UG\) coal production by 2028](#) to meet energy demands – in part replacing open-cast coal mining due to environmental concerns.

However, the 2070 net-zero commitment will necessitate significant structural changes in the production and consumption of fossil-fuels by the economy. This will lead to drastic changes in the lives, livelihood and wellbeing of millions of people who are currently living in coal-dominated areas of the country where coal-mining is a substantial source of revenue. "These changes will have a significant influence on the workforce, the local community, and the economies of the districts and states, especially those dependent on coal for income and employment," according to [Bhabani Prasad Pati, Joint Secretary, Ministry of Coal, Govt. of India](#).

This journey therefore comes with a huge responsibility: to make the transition just, inclusive and sustainable.

Against this backdrop, this study delved into the current understanding of 'just transition' in one of India's major coalfields: the Ib Valley in the Mahanadi basin in Odisha. The goal of the study was to assess the level of awareness and understanding among youth and other stakeholders with regard to the opportunities and challenges of the energy transition with a view to informing policy discourse, emphasising the need for the development of a just transition framework in Odisha, which has the largest coal reserves among all the states.

Area of Study: The Mahanadi Coalfields

As the largest coal-producing state in India, Odisha accounts for approximately 24% of the country's total coal output, and as of March 31, 2024, there are a total of 24 operational coal mines in Odisha. Out of a total [national output of 997.83 MT](#) during the fiscal year 2023–24, the state recorded production of 239.40 million tonnes (MT) of coal. Odisha's coal production capacity is estimated at around [353 million metric tonnes per annum \(MMTPA\)](#), comprising both commercial and captive mining operations.



A significant contributor to this output is Mahanadi Coalfields Limited (MCL), a subsidiary of the Public Sector Undertaking (PSU) Coal India Limited (CIL). In 2023–24, MCL alone produced [206 MT of coal](#), underscoring its pivotal role in the state's mining landscape.

Odisha's coal reserves are primarily concentrated in two major coalfields: the Talcher Coalfield and the Ib Valley Coalfield. The Ib Valley Coalfield, which was used as a test case for this study, is located in Jharsuguda, Sundergarh, and Sambalpur districts in Odisha and extends into the state of Chattisgarh. In Odisha the northern part of the coalfield lies within Sundergarh district, while the southern part is situated in Jharsuguda district and a portion is located in Sambalpur district.

In this study, the Jharsuguda district – referred to as the power house of Odisha - was used as a test case. This builds on an earlier study on the [Mahanadi River Inter-State Dispute](#), which recommended transitioning to a green economy due to excessive pollution and other socio-economic and environmental concerns impacting the communities and the river basin.

Methodology

This field study sought to assess the current understanding of the concept and planning of “transition to a green economy” among various stakeholders, including the youths and community members from villages both directly and indirectly impacted by coal mining and thermal power generation. Through focus group discussions, more than 100 youths and community members from all sections of the society and occupation groups were engaged. This included youths who are employed in the coal mines and in other peripheral and dependent jobs. Other stakeholders included farmers and forest dwellers in the vicinity of the mines; youths who are dependent on fishery; and people who are facing imminent displacement due to coal mine expansion.

Jharsuguda district has five blocks - Lakhanpur, Jharsuguda, Kirimira, Laikera and Kolabira. The total number of Gram Panchayats (GP) in the district is 78 and there are three municipalities - Jharsuguda, Brajarajnar and Belpahar. With respect to mining-affected areas, the largest proportion of mining-affected area within a 10 km-radius of the mines is in Lakhanpur tehsil with 28 Gram Panchayats (GPs) and 5 municipal wards in Belpahar municipality. In Jharsuguda block, six GPs have been identified as mining-affected, besides eight municipal wards including three in Brajarajnar and five in Jharsuguda.¹

The field visits were to the villages of Khaliapali, Karlajuri, Suldia, Dahaldera villages (Lakhanpur block), Kantatikra, Balpur Puruna Basti (Jharsuguda block).

In addition, there were meetings with college-going students at Mahima Degree College in the Lakhanpur block. Further, a meeting with local CSO leaders, leaders and mentors of youth organisations, local academicians and environmentalists and trade union leaders was organised at the District Mineral Fund (DMF) Resource Centre, Lakhanpur block, to get their point of view on the subject.

Others engaged included district level officials, especially the District Magistrate and Collector, Jharsuguda, and Additional District Magistrate, Jharsuguda; state level officials especially at the Pollution Control Board (the Member Secretary and a Senior Scientist); senior level officials from the Vedanta Alumina Ltd and Aditya Birla Ltd (Hindalco) companies which have a major stake in Jharsuguda district’s coalfields; the Director Pritam S. Purkayastha of the Biju Patnaik National Steel Institute (BPNSI), under Ministry of Steel, Govt of India; and Mr. Anup Pattnaik, a miner based out of Bhubaneswar in Odisha.

While the youth and community members were asked about the current conditions in the coal belts – including socio-economic and ecological status – they, as well as other stakeholders, were also asked about their understanding of the initiatives underway in the state

1 <https://cdn.cseindia.org/userfiles/Jharsuguda-Odisha.pdf>

and district with regard to the transition to a low-carbon economy. All stakeholders were prompted to make suggestions on a just transition agenda for the district.



With fisherfolk families dependent on Hirakud reservoir for their livelihood.



With leaders of youth organisations, civil society organisations, mentors of youths and other stakeholders.

The Just Transition Concept

It is imperative for every fossil-fuel dependent nation to work towards 'just transition' while moving toward a low-carbon economy. According to the International Labour Organisation (ILO), a just transition means "greening the economy in a way that is as [fair and inclusive](#) as possible to everyone concerned, creating decent work opportunities and leaving no one behind."

While in this view, just transition is a fair shift from a fossil-fuel based economy to a renewable energy driven one, which should not leave workers in the lurch, a more comprehensive approach could be a transition to an inclusive low-carbon economy that respects the concepts of social justice and equity, and encompasses climate justice for the poor and marginalised using a rights-based approach.

Some scholars are apprehensive that the transition to a low-carbon economy may be driven by the same factors and systems which have been spearheading the current fossil-fuel economy, making it difficult to create an inclusive and sustainable economy. The challenges faced by just transition are many, including structural, political, technological and financial aspects.

The government's [inter-ministerial committee on just transition from coal](#) identifies five key issues to be addressed during the facilitation of just transition of an economy in a local coal-bearing set up:

1. Livelihoods - Closure of coal mines would impact local economies, causing the loss of formal and informal jobs, and affect small enterprises requiring development of alternative options;
2. Community health – closure of mines would lead to closure of health care facilities being provided by the mines and this needs to be addressed;
3. Physical & social infrastructure – schools, hospitals, roads, supply of drinking water, and other basic services should be sustained;
4. Repurposing of resources – pollution and degradation of local natural resources needs to be reversed with repurposing of such resources;
5. Public finance – loss of mining and related revenues to state exchequer and various dedicated funds/facilities could pose challenges to both state and local economies and can refuel regional inequalities.

Stakeholder Views on Transitioning to a Green Economy

Government Officials

During the course of the research study, government officials in Jharsuguda consistently emphasised the centrality of coal in the region's energy and economic landscape. As one respondent noted, "Coal is going to remain the key energy source for us for decades to come." While officials acknowledged awareness of the central government's net-zero commitments, there was widespread uncertainty regarding the existence of any concrete or actionable plans at the state level to phase out coal usage. "We have heard about the net-zero targets, but we're not sure if there is any real transition plan in place for our state," one official stated.

Jharsuguda's contribution to both the state and the national economy through coal-based industries was repeatedly highlighted. Officials conveyed a strong belief in the district's continuing relevance: "Jharsuguda has been a pillar of economic prosperity for the state and the country, and we believe this will continue for many more decades, if not centuries."

At the same time, the district administration expressed its willingness to comply with higher-level policy directions. "If the state or central government brings a formal transition plan, we will implement it just as we have done with other development programmes," an official affirmed.

Currently, the administration is taking steps to mitigate some of the adverse effects of coal-based industries on the environment. Plantation drives were cited as an ongoing activity, with officials suggesting that more plantation efforts should be integrated into any future transition economy. Additionally, concerns over water pollution and depletion due to coal mining activities have led to planning around irrigation expansion. "We are thinking of increasing irrigation coverage in mining-impacted areas where water sources are drying up or getting polluted," one respondent explained.

However, the potential socio-economic impact of a transition was a key concern. Officials warned that the transportation sector, which employs a significant number of local residents could face severe disruption. "More than 85 per cent of the people in this sector are informally employed. If there's a shift away from coal, we don't have much scope to intervene or support them," one official stated.

Finally, there was a call for industry accountability in the event of plant closures. "If coal mines or thermal power plants have to shut down, it should be done in a phased manner, and these companies must take responsibility for providing alternative employment to their own workers," officials emphasised.

Industrial Sector Leaders

Industry leaders interviewed expressed cautious awareness of the government's net-zero targets, while simultaneously casting doubt on the feasibility of phasing out coal in the foreseeable future. "We are aware of the net-zero commitments, but we don't see coal being phased out from the state — or even the country — for at least the next hundred years," remarked one senior industry representative.

Industrial respondents also emphasised the significant mandatory financial contributions made by industries and mining companies toward local area development and environmental restoration. "We are depositing substantial amounts with the government to support development and ecological restoration. These funds should be sufficient to cushion any disruptions that might occur during a green transition," an industry leader explained.

On the employment front, many industry representatives noted that mechanisation has already drastically reduced the dependency on local labour within the mining sector. "Coal mining today is not what it used to be. With high levels of mechanisation, the number of local jobs affected by a potential shift away from coal would be minimal," one respondent observed.

Efforts toward environmental sustainability were also highlighted. Companies pointed to ongoing investments in afforestation and emission reduction through improved production processes. "We are making considerable efforts to green the district and minimise emissions. Any transition plan must acknowledge these steps and avoid pushing for an accelerated coal phase-out," stressed a senior executive.

Several companies were found to be promoting renewable energy — particularly solar power — as part of their corporate social responsibility (CSR) initiatives. "Solar energy systems have been installed in our industrial complexes and in some nearby villages. These initiatives can definitely be scaled up," one industry representative noted.

Water resource management emerged as another key area of action. "Thermal power plants and other industries are already using treated wastewater in their operations. Making this a regular practice can help reduce the strain on local freshwater sources," an industry leader suggested.

Finally, there was recognition of the potential role that industries could play in supporting a more inclusive green transition. "Mining and industrial companies can do more to promote plantation drives, agricultural activities, and improved water supply in peripheral villages. This could create sustainable local employment opportunities," concluded one respondent.

Civil Society Leaders, Academia, Environmentalists, Trade Union Leaders & Mentors of Youth Organisations

Participants from civil society organisations, academia, environmental groups, trade unions, and youth-led initiatives expressed deep concern about the environmental and

social conditions in Jharsuguda, particularly in the coal mining areas. “Jharsuguda is one of the most polluted districts in the region. The coal belts are severely impacted by air, water, and soil pollution,” stated one environmental expert. Stakeholders emphasised that addressing these issues meaningfully — through adoption of cleaner practices by existing coal and industrial operations — would in itself mark a significant step towards a positive transition.

While some respondents were aware of the Coal Mining Closure Guidelines, many flagged a major gap in the process — the lack of proper consultation with local communities, panchayat leaders, and grassroots institutions. “People aren’t consulted when mines are expanded or closed. Two underground mines are reportedly closed, but no one knows officially because there’s no transparency,” said a civil society representative.

Afforestation efforts in the district were heavily criticized as being superficial. “A lot of compensatory afforestation exists only on paper,” one academic observed. There were also concerns about the use of invasive species under the guise of afforestation. Stakeholders urged that both forestry and agroforestry be taken up more seriously, not just as environmental solutions but also as a pathway to green jobs, soil and water restoration, and pollution mitigation in mining-affected areas.

Strong criticisms were levelled at the Coal Bearing Areas (Acquisition and Development) Act (1957), which stakeholders described as a long-standing source of dispossession and disempowerment for local communities, especially indigenous people. “This Act has systematically denied local people their right to land, life, and livelihood,” said a youth organisation mentor. Activists called for reforms in the Act and demanded transparent and participatory decision-making for mine expansions, including free, prior, and informed consent from the affected communities.

There was a clear demand to end the current practice of forceful or fraudulent forest land acquisition, which has led to significant income loss and displacement among indigenous populations. Respondents also suggested that until mining activities commence in areas where access to land is restricted due to acquisition of land under the Act, affected residents should be guaranteed a “living wage employment.” Although many of these stakeholders believe that phasing out coal may take generations, they insisted that if such a transition is planned, it must begin with a comprehensive land and forest restoration plan, designed in full consultation with affected communities. “Such a plan must restore community rights over land and forest resources,” one trade union leader emphasised.

To support a just transition, participants called for the creation of green jobs across natural resource-based sectors such as agriculture, agroforestry, dairy, fishery, tourism, and related industries. Furthermore, they emphasized the role of educational and vocational institutions in equipping youth for such opportunities. “Industrial Training Institutes should be supported by coal companies to offer green job skill training. Local colleges must also expand their programmes to include green skilling,” suggested an academic respondent.

Finally, stakeholders advocated for expanding the scope of the District Mineral Foundation (DMF) fund, which is paid by the mining companies. "The DMF investments should go beyond basic infrastructure to support sustainable livelihoods in farm, forestry, and allied sectors," one civil society leader stated. As an example, they referred to the current DMF spending sectors listed in the provided data, arguing for a broader and more people-centred allocation strategy.

Development projects undertaken in Jharsuguda using DMF Fund:²

Sector	Completed Projects		On Going Projects	
	No. of Projects	Amount Spent (in Cr)	No. of Projects	Amount Spent (in Cr)
Afforestation	15	8.67	3	1.53
Drinking Water Supply	16	103.34	9	338.6
Education	279	79.7	42	8.31
Energy & Watershed Development	29	9.07	3	0.4
Environment/ Preservation and Pollution Control Measures	160	27.01	71	2.55
Health Care	112	30.56	24	6.41
Housing	9	0.3	9	-
Irrigation	168	64.24	6	146.54
Livelihood	84	5.74	43	7.46
Miscellaneous	3	0.02	2	0.89
Physical Infrastructure	17	13.13	15	0.17
Road Connectivity	19	34.13	11	16.27
Sanitation	1	0.12	1	0.2
Skill Development	17	8.93	6	0.98
Welfare of Women & Children	85	8.24	49	0.57
Welfare of aged and disabled people	82	35.84	1	-

Source: Lok Sabha Unstarred Question No.4237, answered on 26.03.2025,

From FY 2022-23 till February 2025, the total amount collected by the DMF in Jharsuguda was Rs 550.43 crore and the total spent on various projects was Rs 419.68 crore, around 76% of the amount received. It is evident from the table that drinking water related activities were given priority with projects in this sector accounting for 24% of the total expenditure on completed work and 64% of the expenditure ongoing projects. Irrigation was second on the priority list with 15% of the expenditure on completed projects and 27.6% of expenditure on ongoing projects. Expenditure on Afforestation and

² https://sansad.in/getFile/loksabhaquestions/annex/184/AU4237_B5ZkTZ.pdf?source=pqals

Environment Preservation and Pollution Control Measures were only 1% and 3% of total spending including completed and ongoing projects of Rs 959.92 cr. Similarly, around 1.4% fund was devoted for livelihood activities and 1% for skill development related projects.

The expenditure pattern indicates scope for focused attention to some of the sectors that are significant for achieving just transition. Sectors such as livelihood, afforestation, re-skilling and skill development of youth need to be prioritised.

Respondents emphasised the need for community-owned renewable energy systems, particularly in coal mining-affected areas. A strong recommendation was made to promote solar power plants in mining regions through cooperative models. “These plants should be managed collectively, with young people trained in solar technologies and maintenance,” one youth mentor suggested. Importantly, respondents asserted that people who originally lost land to mining projects should be made stakeholders in the revenue generated by these solar plants, receiving recurring income as a form of long-term compensation.

A specific initiative that drew attention was the planned [500 MW floating solar power project](#) on the Hirakud reservoir. Civil society representatives proposed that this ambitious venture should be managed by cooperatives formed by fisherfolk, Hirakud dam displaced families, and mining-affected communities, with the government playing a facilitating role. “These communities should be supported through capacity building, technical training, and institutional support to own and operate the plant,” said an environmental activist.

Another critical component raised by stakeholders was the restoration of rivers and water bodies across the district. They asserted that any credible energy transition plan must include the ecological recovery of polluted water sources, particularly in and around coal mining belts. “Rivers must be restored to a clean and free-flowing state as part of the region’s ecological healing,” an academic commented.

Participants also called for stronger integration of employment guarantee schemes with the goals of the green transition. They proposed that the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) be adapted to the region’s needs. “MGNREGS should be leveraged more effectively to create local natural assets — forests, water bodies, farmland improvements — that support green livelihoods,” one trade union leader noted. Importantly, a bold suggestion emerged: to extend the current 100-day job guarantee to 200 days in the Ib Valley coalfields as part of a dedicated energy transition policy. “This would not only create jobs but also align rural employment with environmental restoration,” a civil society respondent added.

Youth & Communities

In the coal-dependent district of Jharsuguda, youth and communities face a complex web of socio-economic and environmental challenges that hinder their ability to secure stab-

le livelihoods. Among the most pressing issues is job insecurity, particularly among the younger population. Despite long-standing promises of employment in mining companies, only a small number of youths have secured permanent jobs with entities like Mahanadi Coalfields Limited (MCL). The majority are engaged through private contractors, earning meagre monthly wages of ₹7,000 to ₹8,000 — far below the ₹60,000 to ₹70,000 earned by regular employees. This disparity has created visible divisions in many villages, fostering resentment and a sense of exclusion among the unemployed and underemployed.

Compounding these economic hardships is the rapid degradation of the environment and the depletion of vital natural resources. Communities report the steady deterioration of forests, agricultural land, and water bodies due to mining operations, fly ash dumping, and unchecked industrial pollution. Rivulets like the Lilari Nullah have dried up or become heavily contaminated, while the once-reliable Hirakud reservoir now poses health risks due to its declining water quality. This ecological damage directly undermines farming, fishing, and forest-based livelihoods, disproportionately affecting Adivasi and other indigenous communities. Odisha is home to 9.2% of India's tribal population and Jharsuguda has a significant tribal population comprising a mix of many of the tribes resident in the state.

Many villages continue to grapple with unresolved displacement, inadequate compensation, and poor access to welfare schemes. For instance, Kantatikra village is surrounded by three mines, and suffers from severe dust pollution and dwindling farming prospects. However it has been excluded from agricultural development schemes on the grounds of being a 'mining area'. Such administrative decisions not only marginalise communities but also erode their trust in both government agencies and mining companies, especially when grievance redressal mechanisms prove ineffective or inaccessible.

The disruption of traditional livelihoods has also pushed many toward precarity. Adivasis and other marginalised groups who once relied on forest produce, subsistence farming, and fishing, are finding these avenues increasingly unviable. With fish stocks declining and access to water bodies shrinking due to pollution and encroachment, young members of fishing communities are migrating in search of alternative work. Land and forest rights remain unresolved in many areas, leaving communities in a state of insecurity about their future.

An often-overlooked impact of mining-induced displacement is the abandonment and dislocation of livestock. As families are uprooted, cattle are frequently left behind or turned loose, resulting in stray animals damaging crops and becoming a burden for neighbouring communities. Simultaneously, the quality of agricultural land has declined drastically due to pollution, with many fields lying fallow.

Together, these interconnected issues paint a picture of a district in urgent need of a transformative approach — one that not only addresses the immediate socio-economic and environmental challenges but also prepares the ground for a more just, inclusive, and sustainable future.

Recommendations for a Just Transition Framework in Odisha

1. Employment Security and Economic Diversification

To address the glaring issue of job insecurity, a just transition framework must ensure the creation of secure, formal employment not only in the energy sector but also in related green and sustainable sectors. Jobs should ideally come with social protections such as life and health insurance, provident fund contributions, and minimum wage guarantees. Addressing the wide income disparity — where private contract workers earn a fraction of formal employees like in the coal sector — is essential for equitable development.

To support better planning, the district administration should develop a digital registry of youth involved in coal and allied sectors. This database — possibly maintained through a dedicated mobile application — should include information on employment status, income levels, and access to welfare benefits. Such a registry would allow targeted interventions for skill-building, social protection, and job matching.

A job-loss insurance scheme should be instituted to protect workers from immediate economic distress due to mine closures or shifting employment patterns. Coverage for at least six months will give workers time to transition into new roles.

2. Skill Development and Education

Given the scale of economic transformation required, large-scale skilling and reskilling of youth is critical. Local ITIs and colleges should be activated to run targeted training in solar energy, green construction, organic agriculture, waste management, and forest-based livelihoods.

The establishment of a Green Economy Skill Development University in Jharsuguda would significantly boost training capacity in the region. This institution could serve as a hub for green skill development across Odisha and neighbouring coal regions. Partnerships with civil society organisations and NGOs already engaged in skill-building efforts should be encouraged to scale and deepen these programmes.

A [recent analysis](#) by the policy research institution, the Council on Energy, Environment and Water (CEEW), estimates that Odisha can generate a million full-time equivalent jobs under a green economy. Seizing this opportunity requires immediate investment in education and vocational training to build a workforce ready for that future.

3. Restoration and Repurposing of Natural Assets

Restoration of degraded natural resources — forests, rivers, ponds, agricultural lands — is central to the just transition agenda. Pollution from coal mining has significantly reduced agricultural productivity, degraded local water bodies, and made daily life more difficult for communities.

Efforts must be made to restore local ecosystems, including river systems such as the Liliari nullah, and to clean the Hirakud reservoir, which is essential for both community life and economic activity. This ecological restoration will support biodiversity, improve public health, and create green jobs for youth and local workers.

Soil health restoration is a crucial part of this agenda. A structured 'soil health reversal programme' should be introduced, using organic manure generated from dairy cooperatives. These dairy farms, managed by local youth, can also support cattle that have been abandoned due to displacement. Designated pasture lands and fodder support must be provided to make this model viable.

Repurposing must also include secure forest rights for Adivasi communities and the promotion of sustainable forest management practices. These communities should be supported in harvesting and adding value to non-timber forest produce, linking them to fair markets and green value chains.

4. Restoration of Trust among Mining-Affected Communities

For a just transition to be accepted and effective, it must correct the persistent injustices faced by communities living near mines. Delayed or incomplete displacement, loss of forest access, polluted drinking water, wild animal incursions, and exclusion from government schemes have created deep mistrust. These communities must be brought back into the ambit of development with urgency.

Restoration of trust will also require strengthening local governance. Gram Sabhas should play a central role in transition planning, with the support of panchayats and civil society actors. Awareness and capacity-building campaigns should be launched to help communities understand the concept of just transition and their role in shaping it.

5. Alternative Livelihood Promotion

Local economies must diversify beyond coal. Sectors such as agriculture, horticulture, sustainable fisheries, livestock, forest-based enterprises, and eco-tourism hold significant potential to create meaningful employment for youth. These should be actively promoted with both public and private investments, while ensuring long-term sustainability.

A just transition framework should actively restore and revitalise traditional livelihoods while aligning them with future-ready, sustainable economic models. For fisherfolk, this means establishing a robust and accountable support system that formalises their rights through transparent registration processes and equips them with the tools and infrastructure needed to sustain their trade. Strengthening fisherfolk cooperatives and enabling their participation in planning and decision-making will be crucial to securing long-term resilience amid changing environmental conditions.

Simultaneously, land-based livelihoods should include the promotion of youth-led dairy enterprises. With targeted support from DMF and other funds, these cooperatives can be empowered through access to pasture land, infrastructure, and fodder subsidies. These dairy initiatives can also feed into a larger soil health reversal programme, aimed

at restoring polluted and degraded farmland for future agricultural productivity. Such programmes not only create green jobs but build long-term ecological health and food security in the region.

In forest areas, the way forward lies in formal recognition of community forest rights, paired with investments in sustainable non-timber forest product (NTFP) management. Value addition, skill training, and market linkages must be scaled up to shift forest-dependent communities from precarious labour to enterprise-led livelihoods. These interventions, grounded in ecological restoration and community stewardship, offer a blueprint for a green, inclusive rural economy that builds both resilience and prosperity.

6. Institutional Arrangements

A successful and inclusive just transition in coal-mining impacted districts like Jharsuguda requires a robust institutional architecture rooted in transparency, participation, and community leadership. Central to this architecture should be the creation of a District-Level Just Transition Framework Operationalisation Committee, responsible for shaping and steering the transition process in consultation with a broad set of local stakeholders.

This committee must be grounded in a participatory and bottom-up approach that genuinely includes the voices of mining-affected communities, particularly the most vulnerable groups such as Adivasis, Dalits, women, youth, and persons with disabilities. It should also engage local labour unions, civil society leaders, educators, academic institutions, skill development agencies, and both government and industry representatives. Such a framework will ensure that decisions are not only informed by technical expertise but also shaped by the lived experiences and aspirations of those most impacted by the energy transition.

The committee can be modelled, in part, on the Mine Closure Advisory Committee suggested in the [2025 Guidelines for the Preparation of Mining Plan and Mine Closure Plan for Coal and Lignite Mines](#). However, its scope should be expanded to reflect broader economic, social, and ecological priorities identified through this assessment. Among its key functions would be the facilitation of regular community forums and consultations to co-develop sustainable livelihood strategies and transition plans; support for capacity-building and skill development programmes geared toward green jobs and alternative employment; and promotion of participatory planning for restoration and maintenance of public infrastructure, natural assets, and ecological resources. Involving self-help groups and local cooperatives in these efforts will be essential to ensure long-term ownership and sustainability.

The committee should also ensure that restoration activities — such as greening of mined areas, eco-tourism initiatives, and rehabilitation of common lands — are aligned with employment creation. Planning for skill development must be community-driven, allowing youth and workers to help shape the kinds of training offered and the opportunities envisioned. Across all these functions, the committee must prioritise transparency and accoun-

tability, with mechanisms for citizen oversight, public access to data, and participatory monitoring of outcomes.

To support this work, a dedicated coordination cell should be established, ideally situated within the district administration but operated in close collaboration with civil society organisations. This body should manage day-to-day operations, convene stakeholder meetings, and facilitate technical and financial planning. The initial funding for the committee and its initiatives can come from the District Mineral Foundation (DMF), which is legally mandated to support mining-affected communities. Over time, additional financial sources — including climate finance, CSR funds, and government schemes — should be mobilised to broaden the impact.

Furthermore, while district-level efforts will form the core of implementation, these should be nested within a broader State-Level Just Transition Coordination Platform. This platform can provide policy alignment, capacity-building support, and cross-district knowledge sharing. It should include academic institutions, think tanks, and development experts, and serve to ensure that local transition processes are consistent with national and international climate and development goals.

Through these institutional arrangements, the just transition process can evolve into a truly inclusive and locally owned agenda — one that restores justice to impacted communities and lays the foundation for a more sustainable and equitable future.

Conclusion

Many stakeholders who were consulted for this study continue to express scepticism about the possibility of coal being phased out and an energy transition unfolding. Even when presented with India's 2070 net-zero targets, there is a widespread perception that the transition is still far off and that there is ample time to prepare. However, with rapid advancements and declining costs of solar and other renewable technologies, significant shifts in the energy landscape may occur sooner than expected. Additionally, the changing priorities of industrial and mining stakeholders, alongside evolving technology costs, are likely to influence the pace and nature of this transition.

Given these uncertainties and opportunities, there is a growing need to establish an institutional platform dedicated to facilitating inclusive dialogues and conducting in-depth studies on the region-specific dimensions of just transition, such as in Jharsuguda. Such an initiative could serve as a model for similar efforts in other coal-dependent districts across Odisha and beyond.

The [Odisha Renewable Energy Policy 2022](#) recognises the role of technical education in enabling a green economy. However, there is merit in revisiting this policy in light of emerging insights and recommendations from recent studies, consultations, and ongoing grassroots processes. A more comprehensive approach, grounded in lived realities and future projections, will be essential.

Political leadership in the state has acknowledged the importance of a balanced and inclusive approach. As Odisha's Deputy Chief Minister [KV Singh Deo recently stated](#) while releasing a just transition report, "We have to be progressive as we move with the times. However, it has to be a collective effort as we cannot ignore those who are going to be affected in this transition." With such political will and community engagement, there is an opportunity to initiate the development of a just transition framework — one that is participatory, forward-looking, and backed by strong policy support.

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