Ecology, Economy and Society–the INSEE Journal 9(2): 1939.1-1939.5, July 2026

REPORT

A Report on WRI India Workshop Titled "Assessing Distributional Impacts and Advancing Equity in India's Low-Carbon Transition"

Richa,[*] Ashwini Hingne,[**] Varun Jyothiprakash[***] and Arpan Golechha[****]

1. BACKGROUND

As India advances towards its long-term, low-emissions development goals, questions of equity and inclusion become increasingly salient. While decarbonization can generate new jobs, investments, and growth, it can also deepen existing inequalities if distributional impacts are not explicitly addressed.

The WRI India organized a day-long workshop on 29 April 2025 at the Indian Institute of Technology, Delhi, on emerging research, data, and policy approaches to understanding and managing these trade-offs in the Indian context. The workshop brought together over 75 participants—including researchers, policymakers, practitioners, and students—to examine the distributional implications of India's low-carbon transition across regions, sectors, and social groups.

The workshop consisted of a high-level opening session; a methodological masterclass on distributional impact analyses, conducted by researchers;

[*] Senior Program Associate, WRI India, LGF, AADI, 2 Balbir Saxena Marg, Hauz Khas, New Delhi 110016, India; richa.richa@wri.org ✉

[**] Associate Program Director, WRI India, 1st Floor, Godrej & Boyce Premises, Gasworks Lane, Lalbaug, Parel, Mumbai 400012, India; ashwini.hingne@wri.org

[***] Senior Program Manager, WRI India, 2nd Floor, No. 93/2, G Towers, South End Road, Basavanagudi, Bengaluru 560004, India (WRI India Bengaluru); varun.jyothiprakash@wri.org

[****] Program Manager, WRI India Bengaluru; arpan.golechha@wri.org

Dates: 11 Feb 2026 (submission), 13 Apr 2026 (acceptance), 31 Jul 2026 (publication)

DOI: https://doi.org/10.37773/ees.v9i2.1939

Published by Indian Society for Ecological Economics (INSEE), c/o Institute of Economic Growth, University Enclave, North Campus, Delhi 110007.

ISSN: 2581–6152 (print); 2581–6101 (web).

thematic World Café discussions on data and methods; and a concluding policy roundtable focused on redistributive policies and institutional responses.

Figure 1. Thematic World Café Session.

Source*:* WRI India; Climate, Economics, and Finance Program

2. SESSION SUMMARY

The central theme of the workshop was that decarbonization is not distributionally neutral. Sectoral discussions covering various industries—such as renewable energy, automotive manufacturing, textiles and apparel, and e-waste processing—highlighted how transition impacts vary across value chains and worker categories. Case studies from different sectors illustrated these dynamics and identified vulnerable groups that require targeted transition support, including women, informal workers, landless labourers, and micro, small, and medium enterprises (MSMEs).

Evidence from large-scale solar projects shows that land-based compensation mechanisms tend to benefit land-owning households, while landless workers experience livelihood losses and limited access to new employment. In the automotive sector, mapping internal combustion engine value chains revealed components and skills that may become redundant in the transition to electric vehicles (EVs), underscoring risks

posed to workers and MSMEs without proactive reskilling and industrial policy measures. Discussions on e-waste emphasized the health and environmental risks borne by informal workers handling hazardous materials, particularly as the deployment of batteries and solar technologies accelerates.

Methodological discussions focused on the limitations of existing analytical frameworks in capturing such impacts. Participants noted that conventional macroeconomic and equilibrium-based models often fail to account for informality, labour heterogeneity, and non-income dimensions of inequality. They emphasized the need to integrate distributive, procedural, and recognition-based equity into climate-economy analysis, and to complement quantitative modelling with qualitative and field-based insights.

Several sessions highlighted the use of environmentally extended social accounting matrices and related tools to assess the effects of climate policies on output, employment, and household incomes across regions and socio-economic groups. These discussions underscored that instruments such as carbon pricing can have regressive effects if implemented in isolation, but that outcomes depend critically on policy design, particularly revenue recycling through targeted transfers, public investment, or employment programmes.

Spatial distribution emerged as a recurring concern. Participants noted that employment gains from renewable energy expansion are likely to be concentrated in western and southern states, while coal-dependent regions in eastern India may face job losses and fiscal pressures. Similarly, while EV adoption may improve urban air quality, upstream environmental burdens from manufacturing and disposal remain unevenly distributed. These patterns raise important questions about regional inequality, migration, and the role of intergovernmental fiscal mechanisms in managing transition-related shocks.

Data availability and governance were identified as binding constraints for robust distributional analysis. Participants highlighted delays in national surveys, limited disaggregation by gender, caste, and employment type, and the lack of panel data to track impacts over time. While private datasets can provide higher-frequency insights, concerns were raised regarding transparency and accessibility. Participants emphasized the need for modular, interoperable, and future-oriented data systems that integrate labour, energy, and consumption data.

The concluding plenary focused on embedding equity within climate policy frameworks by moving beyond compensatory approaches towards anticipatory, justice-oriented planning. Participants stressed the need to

align climate ambition with social protection through progressive fiscal tools, targeted skilling initiatives, and region-specific strategies that account for variations in state capacity and exposure to transition risks. Gender emerged as a cross-cutting priority, with calls to expand the transition discourse to include informal labour, unpaid care work, and intersectional vulnerabilities. Overall, the discussions reinforced the urgency of integrating equity considerations into climate policy design from the outset to ensure that India's low-carbon transition advances social inclusion, regional balance, and long-term development goals.

Figure 2. High-level Plenary Session

Source: WRI India; Climate, Economics, and Finance Program

3. CONCLUSION AND WAY FORWARD

The concluding plenary emphasized the need to move from reactive compensation towards anticipatory, equity-informed climate policy design, aligned with social protection, labour market policies, and regional development planning. Particular attention was given to coal-dependent regions, informal workers, and gender disparities in labour-force participation.

Participants underscored the importance of stronger interdisciplinary research and collaboration to develop reliable methods and robust evidence

on distributional impacts. They identified two critical areas for improving policy relevance: integrating technological pathways into economic modelling, and conducting social impact analysis and field-based research. They made the following recommendations: strengthening analytical frameworks, improving data systems, and fostering closer collaboration between researchers and policymakers to ensure that India's low-carbon transition is inclusive and balanced.

Overall, workshop discussions suggested that aligning climate ambition with social protection and development objectives through anticipatory planning is a priority. Integrating equity *ex ante* into infrastructure, investment, and transition strategies was seen as essential to ensuring that India's low-carbon transition advances inclusion, regional balance, and long-term development goals.

Ethics Statement: We hereby confirm that this study complies with requirements of ethical approvals from the institutional ethics committee for the conduct of this research.

Data Availability Statement: The data comprises workshop discussions and deliberations that are not deposited in a repository but are described within the report.

Conflict of Interest Statement: We certify that all the authors are employed by WRI India, which organized the workshop described in this report. We have no other financial/non-financial interests to disclose