



DATA FOR DEVELOPMENT



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A monthly update of socio-economic developments in India by the
IHDS research community.

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IHDS DATA COMMUNITY RESULTS

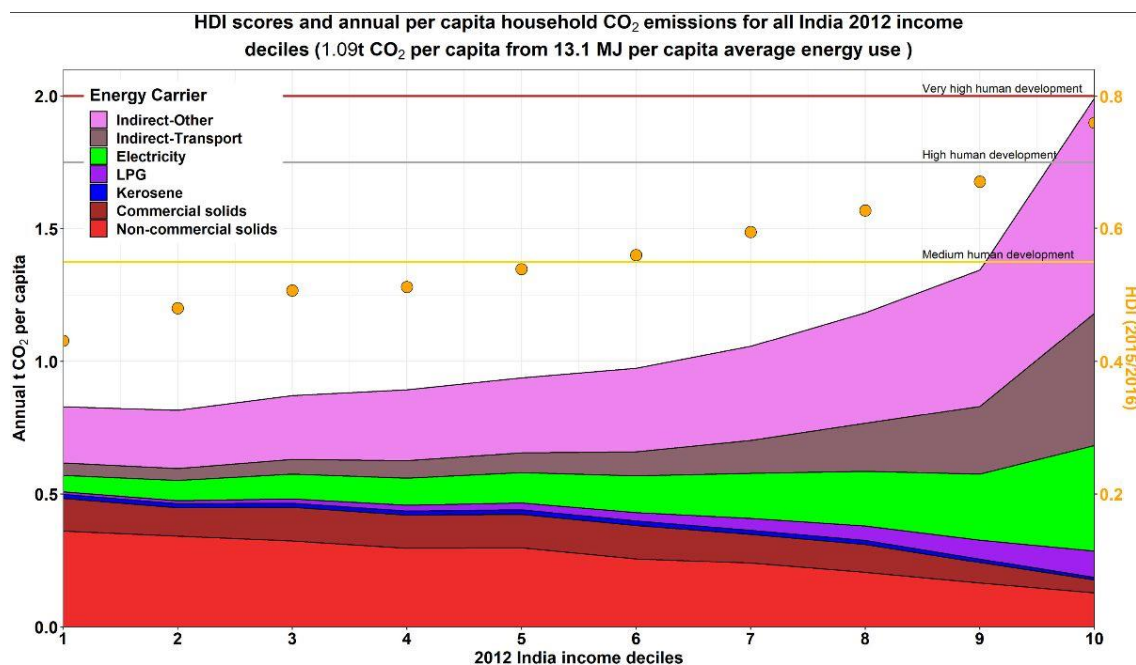
Can transitioning to non-renewable modern energy decrease carbon dioxide emissions in India?

By Andrew Pascale, Shoibal Chakravarty, Paul Lant, Simon Smart, and Chris Greig



Traditional discussions of the relationships between energy, carbon dioxide (CO₂) emissions and human development fail to expose the inequality between within-country energy and CO₂ emissions. This paper seeks to elucidate these inequalities in India and then investigate the consequential impacts on welfare and CO₂ emissions of India's transition away from energy poverty. The study uses the India Human Development Survey (IHDS) and the EORA database to generate household Human Development Index scores, consumption and CO₂ emissions distributions for India in both 2005 and 2012, coinciding with the two rounds of IHDS. The results suggest that addressing pressing welfare issues connected to energy use in India, such as indoor air pollution from solid fuels, can be aided by a transition to modern energy carriers, with little consequential increase in CO₂ emissions. The richest 10 per cent of Indians only emitted 20 per cent more emissions from direct primary energy use than the poorest 10 per cent in 2012 (excluding direct emissions from transport). However, the wealth creation needed to sustain a modern energy transition will inevitably coincide with increased consumption, consumption which is supported by carbon-intensive electricity and materials and represents the fastest growth area for CO₂ emissions as incomes rise. The richest 10 per cent of Indians emitted five times more emissions from indirect energy use than the poorest 10 per cent in 2012. Addressing these challenges at the

same time requires a coherent strategy that targets energy poverty and wealth creation in the poorest deciles, while reducing the emissions intensity of the sectors – notably transportation and electricity – of the Indian and global economies supporting increasing household consumption.



[Full Article Here](#)

Andrew Pascale is a data scientist specialising in large energy-related data sets. His research interests are in timely low-carbon energy transitions that allow inclusive high development levels for all global populations, while remaining within safe planetary boundaries. After being awarded a PhD from the University of Queensland, Australia, in 2018, Andrew worked on Princeton University’s Net-Zero America Project. He is currently a Senior Research Fellow at University of Queensland, working on the Net Zero Australia Project.

Shoibal Chakravarty is a Senior Researcher at the Divecha Centre for Climate Change, Indian Institute of Science, Bangalore. His research interests are in energy and climate policy, energy-economics modelling, and the study of equity in the

context of energy and climate change.

Paul Lant is a Professor in the School of Chemical Engineering at the University of Queensland. Paul has a long history of teaching and research at the University of Queensland, where, he has held a variety of roles. He has led many new teaching initiatives and been a key player in establishing the Chemical Engineering department at the University as a world leader in chemical engineering education innovation. He has started a number of commercial ventures and has been a Director of several companies.

Simon Smart is Associate Professor in the School of Chemical Engineering at the University of Queensland. His research is centred around the sustainable production and use of energy and chemicals, including the development of enabling technologies and processes for the production of clean energy, materials, and water. He has been involved in the Rapid Switch initiative, in relation to pathways to decarbonisation of the global economy, since its inception at the University of Queensland Dow Centre for Sustainable Engineering Innovation, and is the project leader at the University for the Net Zero Australia project (a collaborative partnership with the University of Melbourne, Princeton and Nous).

Chris Greig is the Theodora D. and William H. Walton III Senior Research Scientist at Princeton University's Andlinger Center for Energy and the Environment. He has a PhD in Chemical Engineering and is a Fellow of the Australian Academy of Technology and Engineering. His academic career follows almost three decades in the industry, initially as a company founder and then in senior executive roles across the energy and resources sectors on four continents. His research intersects engineering, business, and social sciences to explore the challenges of rapid decarbonisation for different regions and sectors. He co-led Princeton's influential Net-Zero America (2021) study and is currently co-leading similar efforts in Australia and Asia.

Natural disasters and well-being in India: A household-level panel data analysis

By Rupali Tamuly and Pranab Mukhopadhyay



The impact of natural disasters on household well-being in India continues to be of interest to both researchers and policy-makers and assumes further importance in the context of climate change. However, the literature in India using national level longitudinal data is limited. This paper studies the impact of natural disasters on (adjusted) households' consumption expenditure where rural households are exposed to different levels of natural disaster intensity. The paper uses data from two rounds of the India Human Development Survey (2004-05 and 2011-12) by creating a panel where the households' schedule is merged with the village schedule. The Difference in Differences approach is used with continuous treatment option to study the heterogenous impact of natural disasters. The paper shows that consumption expenditure is adversely affected by natural disasters. Among the other covariates, assets, health insurance, and membership in various institutions help households to increase their consumption expenditure. The proportion of children and family size has a negative impact. The study finds that: (a) natural disasters have a differential impact on households of social and economic groups; (b) social capital reduces the consumption shock of natural disasters; and (c) insurance helps in enhancing welfare.

Table 5: Difference in differences

Variables	Consumption	Variables	Adj. consumption
I	II	III	IV
Average treatment effect on treated			
Natural calamity Intensity #	-13.60** (6.003)	Natural calamity Intensity #	-9.202* (5.436)
Controls		Controls	
Assets owned by the household\$	74.49*** (4.085)	Assets owned by the household\$	74.58*** (3.660)
Caste\$	23.15 (34.49)	Caste\$	-4.485
Confidence Intensity\$	-1.995 (3.189)	Confidence Intensity\$	-3.029 (2.998)
Conflict Intensity\$	-18.51* (10.39)	Conflict Intensity\$	-16.81* (9.654)
Health insurance in the HHS	206.5*** (49.65)	Health insurance in the HHS	211.0*** (46.54)
HH Adult education\$	-2.675 (4.026)	HH Adult education\$	-1.944 (3.600)
Membership Intensity\$	66.65*** (9.983)	Membership Intensity\$	65.36*** (9.070)
Number of married females in the HHS	86.10*** (25.50)	Number of married females in the HHS	82.16*** (23.93)
Number of persons in the HHS	-155.8*** (8.402)	Number of persons in the HHS	-142.1*** (7.813)
Proportion of children in the HHS	-824.8*** (59.97)	Proportion of children in the HHS	-792.5*** (55.19)
Public project Intensity#	-11.91*** (2.961)	Public project Intensity#	-7.704*** (2.583)
Year 2012	200.1*** (32.90)	Year 2012	50.64* (28.91)
Constant	1781.8*** (115.7)	Constant	1620.3*** (99.27)
SE Cluster Village	22,328	22328	
Observations	44419	Observations	44419

[Full Article Here](#)

Rupali Tamuly teaches Economics at the Parvatibai Chowgule College of Arts and Science, Autonomous, in Margao, Goa. She is a Research Scholar at Goa Business School, Goa University. She completed her MA in Economics from Gokhale Institute of Politics and Economics, Pune.

Pranab Mukhopadhyay is a Professor of Economics and Vice Dean (Research) of Goa Business School at Goa University. He is a Fellow of the South Asian Network for Development and Environmental Economics, Kathmandu, and the Indian Society for Ecological Economics. He graduated from Presidency College, Calcutta, and did his Masters and doctoral work at Jawaharlal Nehru University, New Delhi. He has co-authored and co-edited a number of books. His papers have also appeared in edited volumes published by Blackwell Publishers, Edward Elgar, Oxford University Press, Sage Publications, and Springer. His articles have been published in various eminent journals.

IHDS DATA IN THE NEWS



OP-ED FROM DEBASIS BARIK: “How India is choking indoors”, *The Hindu Business Line*, July 18, 2022. [Link.](#)

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Recent publications from IHDS users:

Asri, V., K. Michaelowa, S. Panda, and S.B. Paul, 2022. “The Pursuit of Simplicity: Can Simplifying Eligibility Criteria Improve Social Pension Targeting?” *Journal of Economic Behavior & Organization*, 200:820-846. [Link.](#)

Chatterjee, P. and A. Dubey A. 2022. “Examining the Birth Weights of Children in India: Impact of Iron-Folic Acid Supplements during Pregnancy”, *Indian Journal of Science and Technology*, 15(21):1059-1066. [Link.](#)

Karmakar, A., N. Ganvir, and R.P. Berrens. 2022. "The Impact of Institutional Arrangements on Farmland Rents in India: A Ricardian Analysis", *Journal of Agriculture and Environment for International Development (JAEID)*, 116(1): 29-58. [Link](#).

Singh, D., I. Gupta, and S. Dey. 2022. "Effect of Air Pollution on Cognitive Performance in India", *IEG Working Paper No. 452*. New Delhi: Institute of Economic Growth. [Link](#).

Negi, D.S. 2022. "Global Food Price Surge, In-kind Transfers, and Household Welfare Evidence from India", *IGIDR Working Paper WP-2022-006*. Mumbai: Indira Gandhi Institute of Development Research. [Link](#).

Refeque, M. and P. Azad. (2022). "How Do Linguistic and Technical Skills Affect Earnings in India?", *Indian Economic Review*, 57: 23-57. [Link](#).

Al-Azzam, M.S.A. (2022). Three Essays on Environmental and Health Economics, PhD Thesis submitted to the University of Ottawa. [Link](#).

Kulkarni, V.S., V.S. Kulkarni, K. Imai, and R. Gaiha. (2022). "Change in Subjective Well-Being, Affluence and Trust in State Governments in India", *University of Pennsylvania Population Center Working Paper (PSC/PARC)*, 2022-94. [Link](#).

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ihds.umd.edu



ABOUT IHDS

The India Human Development Survey (IHDS) is a nationally representative, multi-topic survey of 41,554 households in 1503 villages and 971 urban neighbourhoods across India. The first round of interviews was completed in 2004-05; data are publicly available through ICPSR. A second round of IHDS re-interviewed most of these households in 2011-12 (N=42,152) and data for the same can be found here. IHDS 3 is in development and expected to be in the field in 2021.

IHDS 3 has been jointly organised by researchers from the University of Maryland, the National Council of Applied Economic Research (NCAER), Indiana University and the University of Michigan. Funding for the second round of this survey is provided by the National Institutes of Health, grants R01HD041455 and R01HD061048. Additional funding is provided by The Ford Foundation, IDRC and DFID.

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