

5th Annual CECFEE Research & Policy Workshop

Introduction

CECFEE hosted its 5th Annual Workshop at the University of Tezpur, Assam. The workshop spanned two days, 10-11 November 2019, and brought together an eclectic mix of researchers and academics. Broadly, the workshop witnessed discussions on the impacts of air pollution, measuring health impacts of natural disasters, forest and wildlife conservation among other issues. As highlighted by Professor E. Somanathan, Program Director of CECFEE, the workshop aimed to bring together a cohort of economists, ecologists, and policy makers to tackle the problems of climate change and the human-wildlife conflict that we are witnessing today. The two-day workshop ended with a safari of the breathtakingly beautiful Kaziranga National Park.

Day 1

Air Pollution

While the air in Tezpur provided much-needed relief from the polluted air in Delhi, the workshop began with a keynote address on air pollution by Professor Kirk R. Smith from the University of California, Berkeley. The presentation introduced the concept of Disability Adjusted Life Years (DALY) as a means of quantifying the health impacts of ill health. Prof. Smith proceeded with introducing sources of data for health analytics, a field of study that currently suffers from a dearth of good quality and reliable data. The keynote address concluded with the interlinkages between DALYs, burden of disease and household contribution to air pollution in India.

Prachi Singh, doctoral candidate at ISI and researcher at Brookings India, shed more light on the impact of biomass burning on cardiovascular health in Northern India. A key feature of this study was its data set. With the help of NASA's Fire Resource for Resource Management System data, she was able to identify vegetation fires at a grid level of 1 km x 1 km. The study points to a positive impact of high intensity vegetation fires on hypertension. Prachi ended her presentation with a rather unsettling finding that biomass burning affects the older cohort of our society more than the younger population. The paper offers insights for policymakers who seek to find mechanized alternatives to crop burning as a way of tackling climate change.

Again, with policymakers in mind, Robert Fetter from Duke University presented some preliminary results on the impact of induction cook stoves and electricity outages on air pollution (an EfD-funded CECFEE research project). The presentation indicates a negative impact of electricity outages on indoor air pollution. An interesting question that this presentation in turn raises is whether these effects are due to preferences or simply the marginal cost of using LPG cylinders. Further analysis will help policy makers endorse full-time electricity as a flagship program for the government, as it is the only scalable carbon free technology available today.

Addressing the issue of biomass burning from the point of view of a different discipline, professor R. R. Hoque from Tezpur University, compared the chemical composition of biomass fuel to those of fossil fuels. Underlining the difference in complete and incomplete combustion processes, Professor Hoque concluded by providing an intuitive criterion for classification of biomass burning practices in India, a classification that economists and other researchers could find useful. Furthermore, Meghna Agarwal from Ashoka University added to this with her expertise on crop residue burning and the causes for the sorry state of Delhi's air. She concluded by pointing out a host of hypotheses such as the impact of political cycles and the impact of changing crop varieties on crop residue burning, and offers a critique of Happy Seeder Machines as a possible alternative.

Having set a foundation on the drivers of air pollution and its adverse health impacts, every economist in the room had one question in mind, "How much are people willing to pay for clean air?". In an attempt to answer this question, Kenneth Lee from the University of Chicago presented his ongoing research on estimating the willingness to pay for clean air. The RCT provided interesting insights on the impact of information on decision making and demands between heterogeneous groups. Finally, he plans to use the Delhi government's pollution masks distribution scheme as a natural experiment for future work.

The previous presentations of the day had already piqued our interest in knowing the extent to which households in rural India depend on freely available firewood and other natural sources of fuel. In an attempt to answer this question, Sujoy Chakravarty from the Centre for Economic Studies and Planning, JNU presented interesting results on the drivers of free fuel wood collection by households. Interestingly, we note that education and higher income reduce household's dependence on free collection whereas household size increase this dependence. These results, among several others, are of great value in India where tribal communities all across the subcontinent rely heavily on common pool resources, very often without the presence of formal contracts.

Water Pollution

The next few presentations focused on water as a valuable resource. Broadly, the researchers presented their work on political economy of droughts and health impacts of contaminated water and floods. Anubhab Pattanayak, from the Madras School of Economics extended the literature on fiscal federalism by examining the role of partisan politics in the context of natural calamities. The key result, a worrisome one indeed, showed that states ruled by the political party same as that in the center received higher grants in the event of droughts.

Carrying forward the theme of political economy of water, Sabyasachi Das from Ashoka University presented some preliminary findings on whether decentralized management of irrigation ensures efficient use of water (a CECFEE project). The study was based in the state of Orissa, which decentralized water management after the enactment of the Pani Panchayat Act in 2002. The study also outlines the political structure of the panchayat, which is essential for understanding the incentives for different stakeholders.

Rashmi Barua, Assistant Professor at Jawaharlal Nehru University, explored

the casual impact of arsenic contamination in groundwater on education outcomes among children. Ingenious use of soil permeability as an instrument for arsenic concentration makes this paper all the more interesting, and points out how researchers can look for diverse instruments to escape the much dreaded endogeneity problem.

South India has faced several floods in the past decade. Renuka Sane, from NIPFP, presented her findings on the how long it takes to recover from flood related events. Her study focused on the city of Chennai, and set the foundation for replicating such studies for different states of the country.

Day 2

Natural Calamities and Mortality

The second day of the conference began with a rather disconcerting topic of farmer suicides in India. Brinda Viswanathan, from the Madras School of Economics added to the literature by exploring the impact of weather shocks on farmer suicides via an agricultural channel. She established that there seems to be an indirect effect of weather shocks on farmer suicides as opposed to the much studied direct effect of weather shocks on farmer suicides.

Presenting his work on the effect long term impact of earthquakes on health, Gaurav Dhamija from ISI Delhi presents his analysis of the severity of the Gujarat earthquake in 2002. He introduced the concept of Z-scores as a metric to quantify health outcomes and showed that some sections of the society such as pregnant women and children are more vulnerable to the devastating impacts of earthquakes.

Moving forward to a slightly brighter topic, Sangeeta Bansal from JNU looked at the impact of an act that mandates eligible companies to devote 2 percent of their average profits from the last three years to CSR. Her work also touched upon interesting behavioral implications of the peer effect on CSR. An eye-catching result was the potential of crowding out intrinsic altruistic motivation of companies that may potentially reshuffle their portfolio of charitable contributions.

Sacred Groves, Marine and Wildlife

For this theme, we invited conservationists, and experts from the field of Marine and Wildlife preservation. Dr. Ashalata Devi from Tezpur University introduced us to the Assamese tradition of treating certain groves as sacred and worshipping deities around these sacred groves. An extensive survey of the species protected by these traditions would be a fruitful exercise, one that Dr. Ashalata plans to carry out in the near future.

Shifting focus to marine and wildlife, Divya Karnad from Ashoka University raised some concerns about the depleting stock of fisheries. Presenting her work from primary surveys in Maharashtra and Tamil Nadu she addressed the role of the state and communities in regulating fisheries. Her work reflected Elinor Ostrom's ideas of management of the commons. Divya also introduced us to her initiative called 'In Season Fish' that aims to raise awareness among consumers to regulate and 'ethically' consume seafood, to generate a demand side effect and ease the

degradation on marine life.

Having discussed marine life, we invited Anupam Sarmah from WWF India, to tie up the theme with his work on conservation of large mammals. The WWF has been working extensively on combating the human elephant conflict.

In addition, Anupam Sarmah presented on going initiatives to protect Rhino population (Rhino Vision 2020) as well as protecting the tiger population in sanctuaries like Manas (Trans Boundary Manas Conservation, TRaMCA). Initiatives like these are always welcome and much needed to correct the ecological imbalance we are witnessing today.

Kaziranga Flood Management, Community Forestry and Plastic Ingestion

The last leg of the conference took place in the picturesque Kaziranga National Park. The special guest for this session was Mr. P. Sivakumar of the Indian Forest Service, the Director of Kaziranga National Park. Mr. Sivakumar detailed the post-flood management initiatives at KNP. He also underlined what was being done to protect the dwindling Rhino and Tiger population in the park. The presentation ended with an interactive session that invited questions from forest researchers and economists about the extent of controlled burning to regenerate the Park grasslands, and community participation.

Carrying forward the literature on conservation, Francois Libois from the Paris School of Economics investigated the impact of one of the largest decentralization programs of natural resource management in Nepal on deforestation. Having monitored tree cover, he explains a fall in deforestation through a possible fall in firewood demand and a diffusion of alternative fuels such as biogas. These institutional changes are highly valuable as they are at the intersection of politics, economics and the environment.

The human-wildlife conflict can often be seen as collateral damage, a conflict that has no winners. Soumya Prasad, from the Nature Science Initiative, took a visual approach instead of the conventional tabulated t-stat approach. Her work, shed light on the depth of the issue of plastic ingestion among domestic and wild animals. She extensively covered the health impacts of plastic ingestion on both animals and humans and presented her future aim to have a community-based approach to garbage management and disposal.

Student Presentations

Every year CECFEE gives students the opportunity to present their ongoing work in order to get insights from experts from various fields. This year, Poonam Kumari, Master's student from ISI Delhi, presented her preliminary ideas on addressing whether the presence of Anti-Depredation Squads reduces human elephant conflict in Assam.

Day 3

The two-day conference ended on a high note with a jeep safari in Kaziranga National Park. The safari made us realize the importance of conservation of the endangered species and preserve the serenity of their natural habitats.