

**Speaker:****Dr. Anshuman Tiwari (University of Chicago)****Date and Time:**January 15<sup>th</sup>, 2026 (Thursday), 05:00 PM**Venue:**Room 307, 3rd floor, Conference Room, A91 Eco Hub Building,  
Department of Economics, IIT Bombay**Title:****Compliance without conservation when instruments interact****Abstract:**

Do interacting instruments for related market failures undo conservation gains? I study India's 2009 groundwater mandate, which delayed rice transplantation to reduce evapotranspiration losses, layered on an existing electricity ration that indirectly limits pumping. I develop a farm production model with a binding ration nested in a groundwater stock framework, and test its predictions using a synthetic difference-in-differences design. The mandate reduced rice yields by 3.9% without affecting other crops. Farmers expanded rice acreage, consistent with a rebound effect to exploit improved water efficiency. Because pumping hours are capped by the electricity ration, intensive-margin extraction cannot fall; at the same time, aligning irrigation with the monsoon diverts rainfall from recharge to on-farm use. Therefore, aggregate groundwater stock fall by 3–4%. Layering together uncoordinated instruments to address related distortions can result in costly compliance without conservation.

**About the speaker:**

Anshuman is an applied economist who studies questions related to sustainable development and economic growth in developing countries. His research to date seeks to advance the economics of air and water pollution, climate change, and groundwater depletion. The research questions of interest to him are strongly informed by the specific institutions and political economy of developing countries such as India. He uses large geospatial and administrative datasets, as well as machine learning methods to overcome missing data challenges. He has utilized structural models of economic geography, various causal inference methods, and big data in his work.