

Title: Floods: Measurement, Impacts, and Adaptation

Speaker: Prof. Dev Patel, Brown University

Area: Economics

Date: 26.06.2026, Venue: TBD @ 4.00PM

Abstract:

Floods threaten a quarter of the world's population, most of whom live in poor countries. How do floods impact economic development, and how do households adapt? To answer these questions, I first combine methods from geophysics and machine learning in the analysis of satellite data to detect inundation at a granular geographic level anywhere every day for the past two decades. Using this approach in Bangladesh, I find that floods cause a persistent decline in economic activity and force structural change by pushing employment out of agriculture, spurring migration, and shifting children into school. Places with recent exposure to floods experience less harm after subsequent inundation. Using a simple model of experience-driven adaptation, I derive empirical tests for two mechanisms underpinning this pattern and find evidence for both. In a survey of rural farmers, I first show that past flood exposure increases the perceived marginal benefit of adaptation investment by raising households' beliefs about future disaster risk and damages. I next find that the marginal cost of coping with floods via temporary urban migration declines in inundation experience. Consistent with this "learning-by-doing" channel, reduced mobility frictions identified from quasi-random variation in Colonial-era transportation networks mediate the differential treatment effects of past flood exposure. Together, my results indicate that endogenous adaptation will significantly reduce the damage from future flooding.

Speaker Profile:



Prof. Dev Patel is a Postdoctoral Fellow at J-PAL at MIT and a Prize Fellow in Economics, History, and Politics at the Center for History and Economics at Harvard. In Fall 2026, he will start as an Assistant Professor in the Brown Department of Economics and Institute at Brown for Environment and Society. His research is at the intersection of development and environmental economics with a focus on climate change adaptation, gender, and education. He received his PhD in Economics from Harvard in 2024.

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