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CLIMATE CHANGE IN SOUTH ASIA

GOVERNANCE, EQUITY AND SOCIAL JUSTICE

Abstracts & Sessions

Session 2: Climate Prediction, Resilience and Agriculture

"Drought in Sri Lanka: Occurrence, predictability and implications for rice cultivation"

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Drought is a frequent occurrence in Sri Lanka and takes place when the rainfall regime associated with the main rice cultivation season – the *Maha* – fails. The *Maha* season lasts from October to March and coincides with the second inter-monsoon and the Northeast Monsoon. Using the Standardized Precipitation Index (SPI) as a drought assessment tool, nine "moderate droughts" (-1.0<SPI,-1.49) and three "extreme droughts" (-1.5<SPI<-1.99) are identifiable during *Maha* seasons from 1950-2000. These droughts are reflected in negative departures in sown-to-harvested paddy land ratios over the same period.

Climate change could increase the frequency and magnitude of extreme events such as droughts and floods. At times, however, seasonal climate variability can have a greater impact on agriculture than the lower frequency signal represented by climate change. Climate change adaptation measures in agriculture should, therefore, be based on diagnostic analyses on how climate influences a given agricultural activity.

This paper first examines the magnitude, duration and intensity of past droughts in Sri Lanka from 1961-2005. Next, it analyzes the relationship between seasonal precipitation (October to February) and *Maha* rice production from 1961-2005. It then identifies regional climatic patterns that preceded documented drought years and presents the skill in predicting such climatic patterns based on factors known to drive seasonal climate variability in the equatorial Indian Ocean region. Finally, it makes the case for adopting seasonal climate forecasting on an operational basis to provide critical input to decisions on rice cultivation.

"From Apple Juice to Garlic Pickle: Governing Climate Change in Himachal Pradesh"

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Tropes of catastrophe have dominated conversations about climate change and its impact on societies and communities. More often than not, terms like hazards, risks, and vulnerability tend to be deployed together to suggest a certain degree of helplessness in adapting to impending climate change. This paper seeks to disrupt the projection of climate change forecasts into a future full of disasters and refugees. We present evidence of successful adaptation to climate change at household, local community, and higher administrative-territorial levels through a case study of Kullu valley in Himachal Pradesh. The paper describes the impact of climate change on the main agricultural product of the valley – apples – and the response to this impact by households and institutions in the region. Over the last 20 years, the core production zone for apple has steadily shifted northwards towards higher elevations in the Himalayas, such that the present core production zone is more than 100 KM north and 2000 feet higher than in 1988. This shift has allowed the communities at higher elevation to move into apple production with concomitant rise in disposable incomes. At the lower end, households have shifted from apple to vegetable cultivation catering to growing urban markets in north India, also increasing their incomes compared to apple production. The paper examines the suite of institutions – and their interrelationships – that have facilitated successful adaptation to climate change in the Kullu valley. Carefully examining the role of public, market, and civic institutions, the paper argues that democratic governance at multiple scales and articulation between institutions across scale are critical components of successful adaptation to climate change.

"Conceptualizing Community Resilience to Climate Change: Apple Growers and the State in Northwestern India"

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Climate change and variability present significant challenges to both agricultural livelihoods and the viability of rural communities in South Asia. Vulnerability of communities to climatic stress, as well as their adaptation to them, depends on their internal characteristics as well as the strength and quality of multiple linkages that bind them to larger political-economic formations. Drawing on my ethnographic research on the perception of climate change, and the responses to it, among apple-growers in northwestern India, this paper will propose a multi-scalar framework for understanding community resilience as a by-product of state-society synergies. Many communities, in Himachal Pradesh in northwestern India, due to a variety of historical and cultural reasons, and through varied institutional means are able to leverage the state power and resources for their benefit. Specifically, this paper will describe the role of institutions, both non-governmental and governmental, within a favorable policy context, that have fostered community resilience. Furthermore, the focus on the complementarities between the state and society helps avoid the commonplace dichotomy between the top-down and bottom-up approaches to understanding adaptation to climate change.