

CLIMATE CHANGE IN SOUTH ASIA

GOVERNANCE, EQUITY AND SOCIAL JUSTICE

Abstracts & Sessions

Session 3: Vulnerability, Adaptation and, Complex Historical Socioecologies

“Dry ponds and butchered sheep: The human-climate-wildlife nexus in Indian arid lands”

Paul Robbins: Department of Geography and Regional Development, University of Arizona

What are the impacts of climate variability on imperiled wildlife in India? To what degree are these mediated or exacerbated by human use of and proximity to protected areas? This paper reviews research conducted at the Kumbhalgarh Wildlife Sanctuary in Rajasthan India over the last decade to examine and explain changing wildlife populations. The results suggest that wildlife population variability synchronizes closely with climatic events (i.e. La Niña). Moreover, while human activities may stress wildlife populations, especially under periods of drought, it is also the case that wildlife that can avail themselves of domestic resources (e.g. crops and livestock) tend to rebound and survive such crises more successfully than others. These findings raise questions about the importance of human resources for wild animal populations and about the complex interdependencies of wildlife and people in a period where climate variability is likely to increase.

“Himalayan Rivers: New challenges and opportunities”

Ben Crow: Department of Sociology, University of California, Santa Cruz

Climate change is likely to disrupt patterns of flow in the Himalayan Rivers. At the same time, the industrialization of China and India is driving new demands on those rivers, primarily a wave of dam construction in the Himalayas. This paper summarizes current understanding of what is happening and examines possibilities for cooperative diplomacy and small and medium scale development.

Most of the major rivers of South and South East Asia have their origins in Tibet. The Indus, Ganges, and Tsangpo-Brahmaputra are of particular importance to South Asia. Glacial melting and changes in the monsoon brought about by global warming will affect each river differently. The broad pattern of change, however, is expected to lead to increased floods and for some time increases, followed by a long term decrease, in dry season flows. Industrialization in India is propelling an unprecedented wave of large scale dam construction, primarily for hydroelectricity, across the length of the Himalayas from Pakistan, through Nepal to Arunachal Pradesh. The growth of industry and agriculture in China is also accelerating projects on the Tsangpo to generate hydroelectricity and to divert water to other parts of China. These conditions present challenges for international collaboration and to mitigate environmental damage. This paper examines alternative development options including groundwater recharge, small and medium scale hydroelectricity, and institutional innovation.

The Heritage of Water-Conserving Urban Design and Climate Vulnerability in South Asia: Evidence from the Mughal Period”

James Wescoat: Department of Urban Studies and Planning, Massachusetts Institute of Technology

The 21st century is projected to be the most rapid era of urbanization in South Asian history, which would unfold in conjunction with climate variability and change. These processes occur on timescales of decades to centuries, for which an historical perspective on urbanization, urbanism, and urban design may offer analogies to future climate impacts and adjustments.

This paper examines evidence from the Mughal period (1526-1857), which shaped urban design in imperial capital cities such as Agra, Delhi, Fathpur Sikri, and Lahore; and a host of secondary cities such as Aurangabad. The Mughals built sophisticated garden waterworks, wells, and urban canals a handful of which have been sustained over centuries. They took pride in improving water systems in Rajput cities such as Nagaur that broadened the cultural and political scope of urban design. However, the Mughals failed to adequately appreciate or sustain sophisticated water systems of the pre-Mughal Sultanate era (12th-15th centuries). There is inconclusive evidence regarding the vulnerability of the Mughal urban palace-complex at Fathpur Sikri to hydroclimatic hazards. And many historical waterworks of that era are in ruins.

What lessons, if any, might such historical phenomena of the Mughal period offer for 21st century scenarios of climate change? To address this question, I employ a three-part model of water-conserving design (waterworks, water resources, and water experience); and three related policy sectors (cultural policy, environmental policy, and social policy) in South Asia. Previous research has demonstrated the utility of this approach for urban heritage conservation under current climate normals. This study extends the analysis to timescales of multi-decadal hydroclimate variability, and to the linkages between cultural heritage conservation and urban design