

Current Research Projects and Centers in South Asia

Center on Globalization and Sustainable Development: Dr. Nirupam Bajpai, Director
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The Center on Globalization and Sustainable Development (CGSD) and the Center for Global Health and Economic Development (CGHED) work in collaboration on research, policy and advocacy to address the public health needs in rural India. Dr. Nirupam Bajpai and Dr. Jeffrey Sachs jointly lead an international advisory panel of health experts that advises the Minister of Health & Family Welfare, Government of India, and senior officials of the Ministry on strategies to achieve key objectives of the National Rural Health Mission (NRHM) — the world’s largest public health initiative to date. In collaboration with UNICEF, CGSD is conducting research on the NRHM’s impact on maternal and child health in rural settings, community health worker systems, integration of the health and nutrition sectors, and increasing access to skilled birth attendants. It is also working with several state governments to implement Model Districts, or areas covering roughly 1 to 2 million people with a comprehensive public health system capable of achieving the Millennium Development Goals, and which will serve as a roadmap for other districts.

The Columbia Water Center: Dr. Upmanu Lall, Director (ula2@columbia.edu)
The Columbia Water Center, India Office: Dr. Kapil Narula, Director (kkn2104@columbia.edu)

Fresh, clean water is becoming increasingly scarce in India. Groundwater supplies in some locations are dropping one to three meters a year as a result of over consumption, faster than can be replenished by India’s monsoons. The Columbia Water Center studies diminishing levels of fresh water and creates innovative sustainable and global solutions. Working with its India office, and with critical support from the PepsiCo Foundation, the Center is investigating strategies to reduce water stress while improving livelihoods—which are often closely tied to the state of water resources.

Drs. Lall and Narula along with Dr. Vijay Modi and others from the Earth Institute are working with local partners to create and implement solutions to water scarcity in India through pilot projects in the states of Gujarat and Punjab, such as incentives for farmers to conserve water and the cultivation of diverse crops that reduce water consumption and boost incomes. The group is also working to increase awareness among the government and people on the risks of water scarcity.

International Research Institute for Climate and Society (IRI): Dr. Shiv Someshwar, Director, Asia and Pacific Program (someshwar@iri.columbia.edu)

In India, where over 60% of agricultural land is rain-fed, a failed monsoon can lead to crippling impacts on rural communities. Funded by the Ministry of Agriculture, Government of India, the *Extended Range Forecast System for Climate Risk Management in Agriculture Project*, led by Dr. Shiv Someshwar, seeks to improve monsoon forecasts and demonstrate the use of tailored climate information to benefit agriculture and rural livelihoods. Demonstration districts span nine Indian states: Andhra Pradesh, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttarakhand. IRI, as the lead international agency, is partnering with the Indian Institute of Technology Delhi, the India Meteorological Department, the National Center for Medium Range Weather Forecasting, the Indian Council of Agricultural Research, and state agriculture universities.

Urban Design Lab (UDL)/Mumbai Eastern Waterfront: Richard Plunz, Director (rap9@columbia.edu)

Under the direction of Professor Richard Plunz, Director of UDL and Professor of Architecture, Columbia’s annual Urban Design Studio 2010 will focus on Mumbai to look at strategies and policies that can play a constructive role in the development of the Eastern Waterfront. The studio seeks to balance: environmental and ecological concerns with the desire for rapid economic development; local, city and regional interests; public interest and profit motives of developers; and the interests of the middle class with the needs of the poorest residents. A panel discussion focusing on the “Mumbai Eastern Waterfront” was held on January 13, 2010. The Urban Design Studio’s local partners include Sir JJ College of Architecture and other grass roots organizations. The results of the Urban Design Studio 2009 that focused on issues of informal settlements in Dharavi, Mumbai, have been made available to local stakeholders in the form of a publication, and an exhibition in Dharavi.

Center for Wildlife Studies, Bangalore: Dr. Ruth DeFries, Lead Collaborator (rd2402@columbia.edu)

Tropical forests in places like India and Brazil continue to experience deforestation—a significant part of human-driven ecosystem change. As the population swells, more food is needed and land must be converted to produce it. To better understand how ecosystems are being affected, Dr. Ruth DeFries, the Denning Family Professor of Sustainable Development, looks at the world from space to understand the large-scale impacts that humans are having on natural ecosystems. This crucial research is informing her work on the ground in Bangalore, where she leads a collaboration project with the Center for Wildlife Studies to assess land use and tourism pressures around parks throughout India.

Health Effects and Geochemistry of Arsenic in Groundwater of the Bengal Basin: Drs. Joseph Graziano (jg24@columbia.edu) and Alexander van Geen (avangeen@ldeo.columbia.edu)

Naturally elevated concentrations of arsenic in groundwater in the Indian state of West Bengal and in Bangladesh threaten tens of millions of villagers drawing their drinking water from shallow tubewells. For over a decade, scientists from Columbia University's Mailman School of Public Health and Lamont-Doherty Earth Observatory have documented the origin and health impacts of this source of arsenic exposure, including skin lesions, cardiovascular disease, and inhibited mental development in children. In collaboration with the University of Dhaka, the Columbia team's interdisciplinary approach to mitigation has focused on field testing and targeting those aquifers that are low in arsenic for the installation of private and community wells rather than water treatment, which is technologically more demanding. This approach could be extended along the floodplains of the Ganges River and its headwater in southern Nepal that have more recently been shown to be also contaminated with arsenic.