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Changing Global Environments

24. Social science research and global environmental change in India and South Asia

by
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Policy debates in South Asia have only recently started to focus on climate change, even though it is a major concern for civil society and the media. More broadly, social science research on global environmental change needs to break out of traditional disciplinary boundaries if it is to have greater impact. This will only happen with appropriate institutional and funding support and incentives.

Introduction

Global and national environmental issues have been part of South Asia's political and policy debates since the 1970s.[1] India's then prime minister, Indira Gandhi, first linked development outcomes and poverty alleviation to the global environmental agenda during the 1972 Stockholm Environment Conference. India has since maintained a relatively consistent international stance, arguing that developing countries need to concentrate on poverty alleviation and improve their living conditions, while addressing challenges of national and global environmental and ecological conservation.

Environmental conservation has been a consistent focus in India's public policy arena since the 1970s. High points include the passing of important environmental protection and pollution control legislation; creation of a series of "end of pipe" regulatory agencies (agencies that try to fix the problem at the point of impact, rather than at the source); multiple landmark court judgments; and many conflicts between citizens and environmental groups, the government and domestic and international firms on environmental questions.

Global environmental change appeared in the South Asian policy and social science landscape in the late 1980s, just before the 1992 UN Conference on Environment and Development in Rio. The impacts of climate change on South Asian countries include sea level rise, deforestation, desertification and an increased incidence of hurricanes, floods and landslides. Climate change only became a theme of active policy debate in India in the early 2000s, with relatively weak interest from social scientists (Planning Commission, 2011).

The Indian government now officially recognises the climate vulnerability of the country's population and economy, and is committed to an equitable global solution to climate change challenges. It has initiated a series of policy responses, including setting up a Prime Minister's Advisory Council and developing a National Action Plan on Climate Change (Prime Minister's Council on Climate Change, 2010), which was formally adopted in 2008 (Dubash, 2012). It includes current initiatives and future programmes aimed at climate change mitigation and adaptation. All of these allow only limited space for social science questions, such as the relationship between human development and climate change, disaster risk and vulnerability. Eight technical missions have been launched to promote renewable energy, energy efficiency, sustainable habitat, green growth and other priorities. In addition, some state governments are developing action plans aimed at climate change mitigation and adaptation. Local city and regional projects also attempt to roll out various interventions, including photovoltaic installations, solar water-heating systems and village electrification programmes. Most of these initiatives do not have a strong social science orientation (Townshend et al., 2013).

Media attention has grown in line with this increase in government activity on climate change. According to Dubash (2012), a random Internet search for media articles on climate change in major Indian newspapers increased from tens of hits a year in 2000-06 to tens of hits a day by 2009-10. Dubash (2012: 1) also notes that newspapers' opinion and editorial pages show that deliberations and discussions on climate change have become part of the "necessary repertoire of the economic and political commentariat". Civil society groups and non-governmental organisations (NGOs) working on environmental issues are trying to establish substantive political linkage between the issues on which they work and national and global climate change debates (Townshend et al., 2013).

Other South Asian countries have taken similar steps. Bangladesh, which is particularly prone to increasingly frequent floods, has invested with development partners in several sectors related to climate and global environmental change since the 1960s. These include flood management and protection, disaster management, irrigation, cyclone shelters and coastal green belt projects (World Bank, 2010). The government of Bangladesh produced its *National Adaptation Programme of Action* (NAPA) in 2005 (Ministry of Environment and Forests, 2005). This was followed by the adoption of the *Bangladesh Climate Change Strategy and Action Plan 2008* (updated in 2009), which focuses on adaptation as well as mitigation measures. It identifies areas of action, including better management of water resources, minimising the impact of floods and addressing vulnerability, particularly the displacement of populations (Ministry of Environment and Forests, 2009).

Research priorities

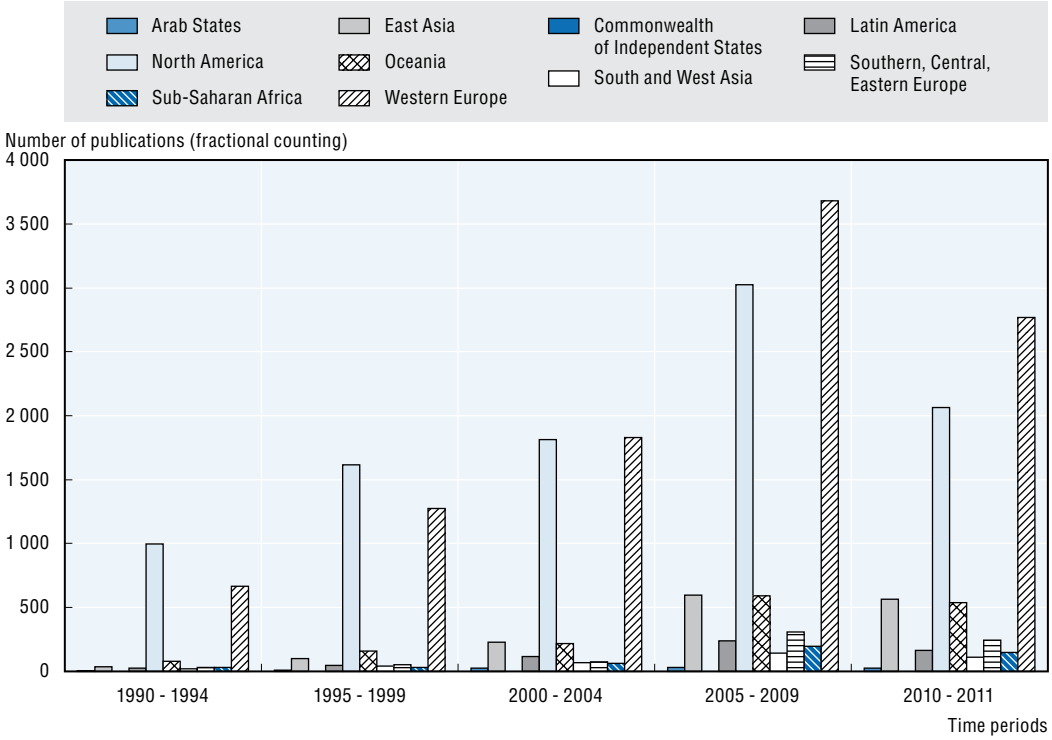
The social sciences in India have grown far beyond their traditional disciplinary boundaries over the past two decades. They now include diverse areas such as education and health, globalisation and sustainable development (DFID, 2011). According to a Department for International Development (DFID) report on social science research in India (2011), agriculture and rural development have been focus areas, with a growing emphasis on inclusive development. The study of economics in India has a more utilitarian bent, with several applied empirical research projects seeking to inform government policy and contribute to economic growth. While the caste system has always been of interest to Indian

social scientists, there is a growing body of new work on its economic, social and political implications. This is also largely true of research on gender issues.

The expansion of social science research interest in global environmental change and climate change has been slow. However, there are indications that policy initiatives may be taking the lead on this front: the United Nations Development Programme (UNDP) is currently funding and developing a three-week training programme that will sensitise government officials and bureaucrats to the linkages and overlaps between human development, climate change and disaster risk. This programme will also provide the participants with toolkits to help them integrate these concerns into their planning processes.

Both global environmental change and climate change are areas of relatively low interest to social scientists in India, where the volume of social science research on these areas since the 1990s is typically lower than in other parts of the world. Although the number of South Asian articles has grown since 2000, it remains lower than in other world regions: see Figure 24.1.

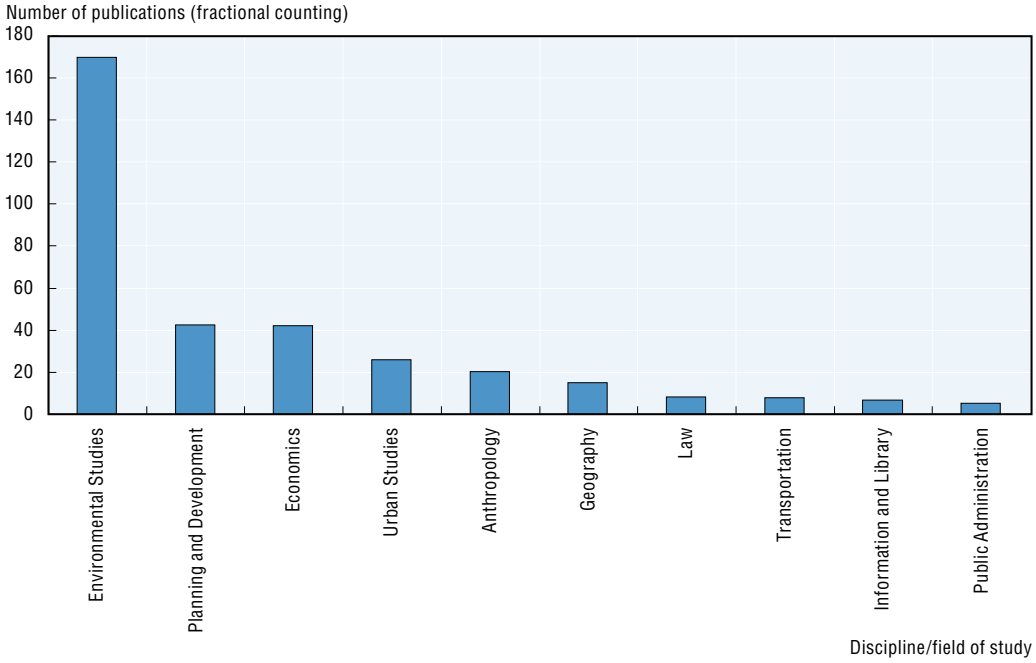
Figure 24.1. **Number of social science articles on climate change and global environmental change by region, 1990 to 2011**



Note: See article by Ludo Waltman, Annex B1, for information on methodology used and definitions.
Source: Web of Science. Annex B, Table B-4.

When this output is disaggregated by discipline and thematic area, the highest proportion of social science research that focuses on climate change and global environmental change is unsurprisingly seen to be in the environmental studies domain (Figure 24.2). Other important thematic areas with a number of social science research articles concentrating on climate change include urban studies, planning and economics. A scan of recent social science research and writing in India suggests that research concentrates largely on the connections between human development and climate change, and on understanding the areas of overlap between these two fields of study.[2]

Figure 24.2. **Number of social science publications on climate change and global environmental change in South and West Asia for the ten most prolific Web of Science fields of study, 1990 to 2011**



Note: See article by Ludo Waltman, Annex B1, for information on methodology used and definitions.
Source: Web of Science. Annex B, Table B-5.

Recent social science research on climate change in India concentrates on the impact of sea level rise on human settlements along the Indian coastline, the socio-economic impacts of climate change on tropical storms and the monsoon, and the impacts of climate variability on agricultural production. There is also some work on the climate change impact on Himalayan glaciers, especially on the water security of settlements dependent on glacier-fed water. Drought and flooding, which are India's most serious contemporary hydro-meteorological hazards, do not feature as important areas for social science research on climate and global environmental change (ISDR, 2009, 2011). Neither do deforestation and other similar themes that form an expanding body of African social science scholarship on climate change.

A broad examination of research on climate and global environmental change in Bangladesh reveals some differences from Indian research. Significant work is being done on adaptation to climate change in Bangladesh, as well as on the impact of flooding from major rivers such as the Ganges and the Meghna and the effects of sea level rise. A similar examination of Pakistan shows most papers taking a regional perspective rather than being Pakistan-specific. Important themes include climate change impacts on food security and vector-borne diseases.

Funding for research

Domestic funding for social science research in India is limited. Despite a relatively strong academic tradition in the humanities and social sciences, the bulk of India's research expenditure on higher education focuses on science and technology. This is also true of

research on climate change and global environmental change. There are no specific grants available for social science research on these issues.

Internal funding for social science research in India comes from government organisations such as the University Grants Commission (UGC) and the Indian Council of Social Science Research (ICSSR). Less than 12% of the UGC's total expenditure on research was allocated to research on social and basic sciences in 2009-10. During 2006-10, the ICSSR grant was 2.3% of the total awarded to the Council of Scientific and Industrial Research (CSIR) and approximately 11% of the funding of the Indian Council of Medical Research (ICMR). The institutions providing the awards set the funding priorities and research areas. Neither of these institutions currently identifies climate change and global environmental change as primary areas of research in either the natural or the social sciences. The direction of research on these issues is driven largely by individual research interests and to a lesser extent by international funding organisations. These tend to focus on policy and practice initiatives.

It is difficult to arrive at an accurate picture of allocations for research in general and for social science research in particular in India. Of the total funds allocated to the ICSSR, only 20% are used for research, and the rest for administrative purposes. Similarly, the UGC funds for higher education are largely used for administrative purposes and salaries, and only secondarily for research programmes. No disaggregated and reliable data is available on how much of the allocation is spent on research. A search of government records suggests that various government departments and agencies allocate about USD 120 million annually to different social science research institutions.

The UGC encourages research by providing grants to researchers affiliated with recognised Indian universities. Particularly important are fellowships for young researchers (UGC, 2012). There are several other general schemes, grants and fellowships, some of which might be available for social science research, but there is no specific mention of support for social science research in climate change and global environmental change in the various calls for proposals for funds or in documents found on the websites of the ICSSR or the UGC. The ICSSR awards senior fellowships to social science scholars to conduct research on specific themes and issues proposed by applicants. It also provides grants to scholars to work in various fields of social sciences with a theoretical, conceptual, methodological or policy orientation.

Little data is available on levels of research support at individual universities or academic institutions. However, a few scattered examples show research support for climate change and global environmental change in India. UNESCO has established a chair for Climate Change and Policy at The Energy and Resources Institute (TERI) in Delhi (TERI, 2012). The Sustainable Environment and Climate faculty at the Centre for Environmental Planning and Technology in Ahmedabad conducts research and runs training workshops on the impact of climate change on various sectors, and teaches postgraduate programmes in climate change and sustainable development (CEPT University, 2012a, 2012b).

There is little information on the role of donor institutions and the extent to which they commission research on climate change and global environmental change in India. However, personal experience and anecdotal evidence indicate that over the past two decades, the volume of climate change funding from international sources such as UN agencies, multilateral and bilateral donors and international NGOs has increased, raising concerns that research is often closely aligned with the donor agency's interests and may not be independent. Very little of this research takes place in local institutions or is

undertaken by local scholars. Most is carried out by scholars at universities outside South Asia, and results are often not published in regional journals. Consequently, very little may find its way back to regional research, domestic policy debates or popular discourse.

What are the obstacles?

In addition to the lack of funding, a major obstacle to social science research in India is the lack of institutional support. The massive and expanding volume of undergraduate enrolment in the social sciences also limits research activities in Indian universities. Fewer than 20% of Indian universities combine teaching and research activities (DFID, 2011). There are few professional or financial incentives to undertake research. Furthermore, university administrations are often not research-friendly, limiting the scope and quality of research activities at typical Indian universities. The quality of the faculty and the rigour of doctoral research are often below average, so that this work cannot be published. In addition, research on climate change and global environmental change is largely perceived to fall under the domain of the natural sciences. Apart from a few isolated instances, there is little indication of attempts to align social science research with work on climate change. *The Mapping Report* on *Social Science Research in India* adds that:

> While the country has the highest volume of research in the region, and is significantly ahead of other countries in south Asia, there is wide disparity in research activity and output across the country, both in terms of quantity and quality. Only about 15-20% of 433 universities have achieved an international standard in teaching and research. There is wide variation across the country in the institutional nature, ambition and resources as well as in individual research leaders' orientation and capability (DFID, 2011).

A 2007 ICSSR review adds that the scale and range of social science research in the country have been expanding. But it also notes that the quality of the research output of the majority of institutions, and their contribution to a better understanding of socio-economic processes and to the shaping of public policy, have fallen short of expectations and do not match the resources spent (DFID, 2011; Krishna and Krishna, 2010). Consulting firms are increasingly emerging as alternative places to work for researchers, but their preference is for policy papers or briefs rather than papers for peer-reviewed journals.

Language is another concern in India. Most provincial colleges use the local or regional language for education up to undergraduate level, but the language of communication for most postgraduate and advanced research is usually English. Although primary research is usually carried out in local languages, the critical disciplinary material is typically in English, including the international literature on climate change and global environmental change. Many students find it difficult to make this linguistic transition.

A comparative study of social science research between India, China and Brazil by Gupta, Dhawan and Singh (2009) found that only 19 Indian institutions have high productivity in social sciences. India ranks 13th among the 26 most productive countries by percentage share of global publications. The top 19 Indian social science institutions published 50 or more publications each during 1996-2007, contributing 3 860 papers, or 28% of the Indian output in social sciences. "Individually, these institutions contributed 59 articles to 779 publications, with an average of 230 publications per institute" (Gupta et al., 2009: 20). The average citation count per paper was 1.17 (Gupta et al., 2009; Krishna and Krishna, 2010).

Types of research

Academic research in India is conducted in a variety of institutions and by diverse individuals. There are three key institutional sectors in which social science research is conducted: universities and postgraduate colleges, government research institutes, and autonomous research institutes. An increasing amount of research also takes place outside academia. Centres for action and advocacy research, such as non-profit organisations, often produce practice-based research that focuses on specific subject areas or issues. Policy research networks made up of academic and government research organisations play an important role in bringing together expertise from different sectors and institutions, although their value as research initiatives is yet to be established. Consulting firms also conduct applied and action research, to produce policy briefs or action items rather than academic papers.

A few disciplines dominate social science research in India. According to the DFID report (2011), economics has traditionally attracted the most funding among the social sciences. Sociology also has a large following among postgraduate research students, partly due to the employment opportunities in the non-profit sector. Although disciplines like history and political science are among the most popular at the undergraduate level, interest in conducting postgraduate research in these areas is declining, partly because of the lack of employment opportunities. Teaching and research at Indian universities are typically within traditional disciplines, including sociology, economics, history, anthropology, geography, psychology, public administration and political science. In addition, some universities and academic institutions in India provide teaching in "non-traditional" areas such as social work, women's studies, community medicine, law and governance, educational studies and gender studies, all of which draw on conventional social sciences. The expansion of these communities into the climate change and global environmental change space has been limited.

Research and decision-making

The relationship between research and decision-making in India is difficult to establish. For the most part, independent research conducted at universities in India has little impact on decision-making and policy. However, a significant amount of directed social science research is carried out to inform government policy- and decision-making. In particular, there are several government research institutes such as the Indian Institute of Tropical Meteorology, the Indian Institute of Technology Delhi and the Indian Institute of Science, Bangalore that are mandated to produce research-based reports that are supposed to inform decision-making. However, these reports are technical in nature, focusing on the sciences rather than social science.

Consulting firms are increasingly acting as advisors to municipal, state and national governments in India. In addition, non-profit organisations and advocacy groups use research to pressure government to take action on particular issues. Since little of this action-oriented research is published outside the grey literature, it is difficult to evaluate its quality or its impact on policy- and decision-making.

Conclusion

Climate change is a relatively recent theme of policy debate in South Asia, but it has become an important area of media and civil society concern. While social science research in the region, especially in India, has diversified into many development-related themes,

its engagement with global environmental change and climate change is limited. It is focused on the established terrain of environmental studies, planning and development, economics and urban studies. There is little research funding for the social sciences and virtually no dedicated funding or institutional support for this area. It is not surprising that the region lags behind others in social science research output. In addition, the linkage of academic social sciences research with policy-making is weak. Consulting and advocacy groups have moved into this area, although the quality of their research and its impact may be questionable. In short, there is considerable potential for the development of social science research in this important area, but only if appropriate institutional and funding support and incentives are available.

Acknowledgement

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Notes

1. The South Asia sub-region here includes Afghanistan, Pakistan, Bhutan, Nepal, India, Bangladesh, Sri Lanka and the Maldives.
2. An examination of articles in the *Handbook of Climate Change in India* and Google Scholar citations for themes such as "climate change research in India", "social science research in India" and "social science research and climate change in India" yields useful insights.

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