

**South Asian Historical Records and Climate: An Interdisciplinary
Workshop
March 4-5, 2011
Bangalore**

Background: The British Library (BL)'s digitization initiative was first conceptualized in July 2007. In that year, the British Library Board approved an International Engagement Strategy that commits the BL to a large-scale digitization of its major collections, and at the same time to partner other collections in danger of being lost. Over the last year, the BL has proposed the need to devise an India Strategy in order to digitize its South Asia collections. The framework for developing the India Strategy has taken shape over the last few months, in the form of BL and Higher Education Cell (HEC) collaboration.

British Library: The British Library, London, is one of the world's greatest research libraries. Its collections contain over 150 million items, and their unique breadth and diversity makes them a globally unrivalled asset. The India Office Records inherited by the BL constitute the single largest resource for Asian studies anywhere. The material originating from India includes 500,000 volumes of printed books in all South Asian languages, 70,000 volumes of official Indian publications in the India Office Records, 275,000 volumes of the archives of the East India Company, India Office and Burma Office, 30,000 manuscripts, 30,000 prints and drawings, 200,000 photographs and 105,000 maps.

Higher Education Cell: The Higher Education Cell (HEC), housed at the Centre for the Study of Culture and Society (CSCS), Bangalore, was incubated by the Tata Trusts in 2007. It has since then built a significant national network of higher education institutions as part of its effort to enable sectoral change. The HEC has been approached by the BL to anchor its India Strategy because of its strong partner network in the country, which can bring together: (1) major public and private archives; (2) key University departments capable of housing the archived material and using it for teaching and research purposes; and (3) technological partners capable of high-volume digitization.

Arts and Humanities Research Council: Established in April 2005, the Arts and Humanities Research Council [AHRC] is a Non-Departmental Public body. AHRC evolved from the Arts and Humanities Research Board, which was founded in 1998. Their key aims are to: (1) Promote and support the production of world-class research in the arts and humanities. (2) Support world-class postgraduate training designed to equip graduates for research or other professional careers. (3) Strengthen the impact of arts and humanities research by encouraging researchers to disseminate and transfer knowledge to other contexts where it makes a difference. (4) Raise the profile of arts and humanities research and to be an effective advocate for its social, cultural and economic significance.

The workshop was co-hosted by Divecha Centre for Climate Change and the Centre for Contemporary Studies.

Centre for Contemporary Studies: The Centre for Contemporary Studies (CCS), endeavours to bring to the campus some of the best practitioners of different disciplines

in the human sciences, such as philosophy, sociology, economics, law, literature, poetry, art, music, cinema etc. The aim is to forge useful and meaningful interaction between the natural sciences and human sciences with special focus on understanding the diverse research methodologies of different disciplines and create opportunities to rethink the foundations of our own disciplines.

Divecha Centre for Climate Change: The Divecha Centre for Climate Change was established at Indian Institute of Science in January 2009 with a generous financial contribution from Arjun and Diana Divecha and the Grantham Foundation for the Protection of the Environment. The primary goal of this centre will be to understand climate variability and climate change and its impact on the environment.

Participants

Over 35 participants attended the workshop from the following institutions: British Library UK, Divecha Centre for Climate Change, Higher Education Cell, Centre for Contemporary Studies, Arts and Humanities Research Council UK, Asoka Trust for Research and Ecology and the Environment (ATREE), National Centre for Biological Sciences, Indian Institute for Science Education & Research (IISER)-Pune, Himmothan Society, Atmospheric Circulations Reconstructions over the Earth (ACRE) UK, Indian Meteorological Department, MET Office, University of Exeter, University of East Anglia, University of Stirling, National Atmospheric Research Laboratory, Council of the Indian Institute of Tropical Meteorology, University of Westminster, Jawaharlal Nehru University, Ambedkar University, Delhi.

Main Objectives

1. To investigate how historical records are currently being used in work on climate
2. To consider how all such records can be collated and made available on digital or other platforms
3. To see if there are historical, literary, geographical or other ways of thinking about this material that adds value to the scientific research that has already been done
4. To consider what new research questions or possibilities are opened up by this data
5. To explore the opportunities for creative exploitation of the records for wider public and policy engagement on environmental and climate change

There were six sessions that spanned over the two days. Each session had a chair and speakers. Below is a summary of all the topics and the presentations. Each session was followed by a round of questions and discussions

I.THE ROLE AND VALUE OF HISTORICAL RECORDS ON STUDIES OF CLIMATE

Dr. Robert Allan (International ACRE Project Manager) introduced the group to ACRE (Atmospheric Circulations Reconstructions over the Earth).

Key Points:

1. The ACRE initiative both undertakes and facilitates the recovery of historical instrumental surface terrestrial and marine global weather observations to underpin 4D weather reconstruction (reanalyses) spanning the last 200-250 years for climate applications and impacts needs worldwide.
2. This data can be used for global climate research; climate applications, extremes, risks and impacts needs; educators & students, & the general public
3. ACRE has several data recovery and imaging and digitisation projects all over the world. Future projects include India as an important site and partner.

Dr. Philip Brohan (MET Office in the UK), gave a brief overview of the archives that are currently present.

Key Points:

1. There is data from the 1850's but he stressed that we require data from before. Currently there are collaborators in America who also aid in data extraction but there is a need to reach out to more countries.
2. Importance of affecting change at the level of policy to aid in the understanding of science through historical material in order to make predictions at for the present.

Dr. Simon Naylor (University of Exeter) introduced the group to some of the questions historical geographies of climate and weather can pose. He also suggested raising new questions and ways of thinking about historical data and how they can be further problematised. According to him, history of science has a role to play in identifying and translating these sources and can help better understand how and why weather data came to be in the first place.

Key points:

1. Does it matter where science is made and received?
2. Can the location make a difference to the conduct of science?
3. Can it make any difference to the content of science?

Dr. Dev Raj Sikka (formerly the head of India's climate research programme under the Department of Science and Technology) gave a brief overview of the Indian records currently in the Indian Meteorological Department. He also gave an interesting history (of India) of the links between politics and climate data collected during the British rule: the British needed to understand the Indian climate in order to administer the country.

Key Points:

1. Extending the scope of local environment and its impact on the regional environment.
2. Collaboration between countries for a digitisation project must occur at the level of governments.

II. INSIGHTS FROM THE EXPERIENCE OF USING HISTORIC RECORDS FOR STUDIES OF CLIMATE

Dr. Sandip Hazareesingh (The Open University) provided an overview of the agricultural improvement projects that have been done in the country since the 1920's. His presentation focused on the ecological impact of colonial rule on the country. His area of interest was the archival material on cotton production in the area of Dharwad and the impact of a climate crisis on it. He states that the colonial records do not provide many details on causes of the cotton production crisis.

Key Points:

1. It would be useful to compare and contrast different records to see the anomalies and gaps in knowledge and use these to reflect on colonial India where only few voices get reflected in the records.

Dr. Fiona Williamson (University of East Anglia) introduced her work of researching climate where she went through ship logs from the 18th to the 19th century.

Key Points:

1. Invaluable nature and use of these logs.
2. Challenges faced when doing historical work with respect to climate change.
3. Tension in doing climate research historically where debates about quantitative and qualitative data are most alive.
4. Time needed in order to do historical research is vast
5. Difficulty in getting funding.
6. Importance of the project of digitisation which, first and foremost, will lead to greater access to the public (schools, colleges).

Vinita Damodaran (Centre for World Environmental History, University of Sussex) gave a brief introduction to the work done by the Centre for World Environmental History. They engage in several interdisciplinary projects having a range of scholars from many disciplines. She highlighted the neglect of several colonial records which include data that trace important transformations in climate. She too stressed the need for digitization of these records.

Key Points:

1. These records have not been tapped for the wealth of information they can provide on social-economic climate of those times that they have been tapped only for the information on the environment.
2. Many of the contemporary challenges in climate being faced today have also been recorded in the colonial past.
3. The importance of getting indigenous responses (with specific respect to deforestation).
4. Bringing together disparate and fragmented research from all over the world and compiling them and digitizing them in order to facilitate new research.

Dr. Deepak Barua (IISER) is a plant ecologist who spoke on his area of interest: understanding mechanisms by which plants respond to their environment and

consequences of these responses. He plans on looking at historical records of plants' responses to climate change (sources: agricultural records,

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Key Points:

1. Importance of access to these data sets for his research.

III. HOW HISTORIC RECORDS CAN INFORM CONTEMPORARY PUBLIC POLICY AND PUBLIC ENGAGEMENT

Dr. Tim Chatterton's (University of the West of England) presentation introduced three reasons as to why it is hard to engage with climate change issues: the temporal, spatial and scientific. The presentation stressed on the need for inter disciplinary work. His presentation also highlighted the difficulties in representing the climate crisis (through numbers and tables) and what it means for public engagement. According to him, engaging with historical records for public engagement will:

Key Points

1. Bridge the gap between Social and Physical Sciences.
2. Create a social and cultural context for climate change
3. Link the UK to the rest of the world
4. Put 'Now' in an historical context
5. Accept that the future will be different
6. Show that the future is sooner than we might think

Dr. Matthew Hibberd's (University of Stirling) presentation was on the barriers to communicating climate change. His presentation introduced the study he is currently involved in, where he is conducting focus group discussions with youth in India and the UK on their engagement with climate change.

Key Points:

1. Academic cooperation as a driver for international understanding
2. The importance of collaboration in transmission of information between science and journalism.

M. Rajeevan (National Atmospheric Research Laboratory) presentation was on the need for rescue and preservation of historical data. His presentation focused on how historical climate records are especially useful to estimate long term climate variability and trends as well as in assessing the natural variability and climate change attribution. The presentation also focused on the data rescue and recovery efforts conducted in the country so far.

Key Points:

1. There are many challenges in data rescue and recovery:
 - Manuscripts are not properly organized
 - No indexing
 - Paper quality in bad shape
2. The natural variability of extreme events is still to some extent unknown

3. An extreme event that may seem extreme to us may be a purely random variation or part of the natural variability of the earth's climate.

IV. SCOPING THE AVAILABLE RECORDS: WHAT IS DIGITISED AND WHAT IS NOT

This session focused on the data that is currently available and the extent of its digitization.

Prof. R R Kelkar (Former Director General of the India Meteorological Department, New Delhi) provided a brief look into the history of recording climate data in the country specifically focusing on pre 1857 data was presented to the group. The presentation asked two key questions:

Key Points:

1. What are the sources of this data?
2. What are the problems encountered while using this data?
E.g.: Any meteorological instrument has to be calibrated with respect to a reference standard and corrections applied to bring the observations on par with observations made elsewhere.

Penny Brook (British Library) provided an overview of the archives of the India Office Records, which contain data recorded by the East India Company. The presentation focused on how archives are organized as well as introductions to guides currently provided by the India Office Records that aid in the access and organisation of the archives. A very complex organization would lead to an arrangement of archives which could seem difficult to access and comprehend. She also introduced the group to guides that aid in understanding the organization of the archives while doing research.

Nalini Persad (British Library) presentation depicted various examples of historical materials (pamphlets, manuscripts, news paper) that she engages with as Curator of the British Library South Indian Language division.

Key Points:

1. There is a lot of information in songs and poetry regarding climate change. Most of these are in the vernacular and include accounts of people's reactions to climate crises.

Dr. Malavika Chauhan's presentation focused on the relevance of climate change research for rural India and the data needs of rural development projects. She introduced the work done by the Himmothan Project (in the Himalayan region) while urging for climate data and research in the Himalayan region.

Key Points:

1. Climate is changing rapidly in this region and is leading to shifts agricultural systems also leading to severe economic losses.
2. There is data requirement for the following: forest conditions, water, rainfall, climate change impacts, disaster management

3. The Himmothan Project has conducted its own studies by doing surveys and the development of a primary field MIS.

Vijay Krishna (Arghyam) introduced the work of Arghyam, an initiative that strives to understand and address issues of quantity, quality and access to domestic water in communities across the country. Arghyam's key initiatives include the Project Grants, and the India Water Portal, about which he spoke in detail.

Key Points:

1. Arghyam aims at providing a knowledge base (data, statistics, movies) for NGO's
2. Data available in two languages-English and Kannada
3. They provide location specific data
4. Create collaborations between users and practitioners in the field.

V. INTERPRETATION, NARRATIVE AND REPRESENTATIONS IN HISTORIC RECORDS

Dr. Tom Corby, (Centre for Research in Education Art and Media) refers to this (inter-disciplinary model) as the convergence-divergence model of scientific collaboration. His presentations focused on two projects that are trying to make disparate data sets available to the public as well as trying to understand how these data sets are used to produce content and experience. The effects of these different data sets were also the focus of his presentation (for example, visual data created by artists).

Key Points:

1. Data has affective as well as cognitive affordances
2. Translation to human scale in public space
3. Makes concrete invisible processes.
4. Systems poetics, of environmental complexity.
5. Public engagement with climate knowledge is not a process of transmission;
6. Create collaborative spaces for scientists/artists to think speculatively

Dr. Richard Kerridge (Bath Spa University) introduced the group to eco-criticism, which is the study of literature and environment from an inter-disciplinary point of view. The presentation suggested that looking at literature from an eco critical perspective can provide much information about climate and climate change.

Dr. Ayesha Mukherjee, (University of Exeter) introduced the group to her study of England in the 1590's and the cultural experience of a crisis, in this case, famine. She introduced the group to the phrase "**Dearth science**": articulation and practice of an experimental program for the management of resources and knowledge, stimulated by perceptions of ecological crisis.

Key Points:

1. How, in specific cases, did human cultures adapt - or fail to adapt - to environmental degradation / disaster?

2. What does the available data mean in cultural terms?
3. How did people who endured specific circumstances of change experience and imagine their crises?
4. What is the widest possible range of texts and sources available to our investigations?
5. And how do these texts / sources speak to each other?
6. What is the relevance of a given historical case study to current environmental crises?

Charu Singh's [Jawaharlal Nehru University (JNU)] presentation focused on her research topic: The arrival of the science of meteorology in colonial India, and its development and institutionalization as a state science as well as a state department by the late nineteenth century.

Key Points:

1. Explores the monsoon through different registers: travel literature tracts of medicine and health science/meteorology and famine and drought in the Deccan in 1876.

VI. FUTURE DIRECTIONS: RESEARCH, DIGITISATION, DISSEMINATION

The final round of discussions focused on not only on the possibilities of future initiatives but also on the implications of doing inter-disciplinary research.

Key Points brought up in the discussion:

The Research Agenda: Doing Inter disciplinary work

1. The climate change discourse breaks up the past present future continuum, that history occupies, because conditions in the past affect conditions or perpetuate in the present and then the future. The nature of this work then, is truly inter - disciplinary where the foundations of disciplines are being shaken when they speak to one another.
2. The climate change discourse is pushing at the boundaries of the 'nation state' where local concerns often become or are connected to global concerns. The climate change discourse is an invitation for a global perspective. There is a need to connect activities with one's experiences. Further more by studying nature in this way it changes the way we understand the empire or the nation state.
3. There are four approaches in inter disciplinarily: (i) A top-down view of inter disciplinarity in which there are many local challenges that cannot be addressed unless we cross disciplinary boundaries. (ii) The bottom approach is when you have researchers from different disciplines working together where shifts in methodologies occur. (iii) Soft inter-disciplinarity: When one borrows from another discipline either in terms of knowledge or methodologies. (iv) Hard inter-disciplinarity on the other hand involves collaborating across disciplines which is harder to do because it involves dealing with knowledge/methodologies that one does not really understand. It is a higher risk activity.
4. It has been suggested that inter disciplinary work be done between organisations.

5. The importance of qualitative data in climate change: not just in verifying quantitative data but also in providing the wider context.

Digitisation and Dissemination:

1. There is a lot of archival material that needs to be organized for digitization. It was suggested that since research questions will aid in the organisation of this archival material if Research Fellowships be set up so scholars can not only access this vast store of data, but also aid in its organization.
2. The use of archival material could percolate to curricula used in Higher Education Institutions. This is a keen interest of the HE Cell where collaborations be built across Indian and UK institutions, to discover research themes that involve digitization and develop strategies around which they can then be disseminated to higher education institutions.
3. An agreement between the Indian Met Office and the UK Ministry of Earth Sciences is one such important collaboration that can assist in the setting up of a joint programme to take forward modern meteorology. In this agreement one of the ~~endeavors~~ could be that the UK provides India with the data that they have from 1800s and India would provide the data they have from 1875. The scope of this data can then be extended under such a joint programme.
4. There is a need to engage with partners with different interests: (i) Those that have a different set of archives (ii) A partner in science for future agreements between archiving organisations.

Deleted: endeavours

Pragmatic concerns:

1. Prevent the replication of data.
2. Which institution is best able to carry digitization forward?
3. Which institution's collections are in a better condition?
4. Setting up of a digitisation working group by which the group can come together and discuss possibilities for funding.
5. Selection of sources for digitisation. There is a difference in the data sources used by scientists and historians.
6. Prioritisation of data for digitisation as the amount of data left to be digitised is enormous. The prioritisation could be informed by the research problem.

COLLABORATIONS FACILITATED:

As a direct outcome of the workshop, future collaborations have been planned between:

1. British Library and the Ministry of Earth Sciences
2. Indian Meteorological Dept and UK Met Office
3. Himmothan Society, Arghyam, ATREE, AHRC-UK
4. IISER-Pune, National Centre for Biological Sciences, and Open University-UK
5. HE Cell and Divecha Centre for Climate Change

Appendix

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