



Zentrum für Entwicklungsforschung
Center for Development Research
University of Bonn

DFG Deutsche
Forschungsgemeinschaft



INDIAN
INSTITUTE OF
PUBLIC HEALTH
GANDHINAGAR

Workshop report

Are we getting crowded, thirsty and sick?

Urbanization, water management and human health

Venue: Hotel Cambay Grand,
Ahmedabad - 380 054, Gujarat.
January 24, 2013

About 30 experts from urban planning and public health met in Ahmedabad to discuss and debate the preliminary findings from the research project 'Urbanization, water management and human health in Ahmedabad'. The project was carried out under the 'Water and Health' research theme at Center for Development Research, University of Bonn with an aim to understand the linkages between water management and human health.

Research background

This offers insight to assess the progress of 'improved' drinking water and sanitation as a preventive measure used by national and international agencies not only towards meeting the MDG targets, but also reducing infectious diseases. Further, it will also offer insight to assess complex interaction of various determinants of health – "causes of the causes" of ill-health.

It is a "first gathering where health department and city engineer department of Ahmedabad Municipal Corporation were jointly discussing urban health issues".

Dr. Vijay Kohli, Deputy Medical
Officer, AMC

Funded by the German Research Foundation (DFG) the research (i) analyzed the spatial distribution of water-borne/vector-borne diseases in Ahmedabad city, (ii) assessed the socio-economic, institutional and ecological burden on water-transmitted diseases at the household level in two selected wards in the city, and (iii) analysed spatially and temporally the factors influencing water-borne diseases among individual cases in the two wards in the city.

Workshop: goals

The workshop was aimed to share the preliminary findings with government officials, practitioners and research communities. As acknowledged by **Dr. Vijay Kohli**, Deputy Medical

Officer, Department of Health, Ahmedabad Municipal Corporation, the workshop was the “first gathering attended where health department and city engineer department were jointly discussing urban health. In the past whenever there was outbreak of water-and vector-borne diseases the department of health officials were called, but never involved the department of city engineers.” He reaffirmed the importance of working together for ensuring well-being of urban health in a rapidly urbanizing India.

Urbanization

In his opening remarks **Prof. Dileep Mavalankar** (Dean of Indian Institute of Public Health-Gandhinagar) highlighted that urbanization has overcrowded our cities, and has led to deadly (re)emergence of disease that cuts across social boundaries. He reiterated that India in spite of its emerging economic power and space technology, unfortunately has not been able to ensure safe drinking water and sanitation to its people. “Few weeks back, two manhole workers died inside the campus of the Space Research Center in Ahmedabad due to poisonous gas. It

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Prof. Dileep Mavalankar,
Dean (Academic), IIPHG

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Surat plague

Inviting **Prof. Ghanshyam Shah**, a prominent political scientist and public health scholar, Dr Saravanan noted about his book (1997) on the Surat plague as the first political-anthropological piece of an epidemic in contemporary India. His book warns of a sociopolitical disease related to the value system of the populace, the lop-sided nature of development, the crisis in governance, and a fragile and fragmented civil society, which is still relevant in many developing world. In his key note speech Prof. Ghanshyam Shah (National Fellow, ICSSR), highlighted the importance of public health as encompassing improved quality of life and called for redefining urbanization in

“The urban and rural should be viewed as an integral entity and as continuum for urban planning and health management”

Prof. Ghanshyam Shah,
National Fellow, ICSSR

relation to enlightenment, modernity, and a rational way of living. Drawing from his book (1997) he revealed how the 1994 plague outbreak that originated in the vicinity of Surat rapidly spread due to the filth in the city. He argued that health has to be an integral part of the urban and industrial planning, rather than being at a fag-end of a crisis, and further highlighted that urban-rural has to be viewed in a continuum for planning rather than as separate administrative units. While Prof. Shah highlighted on the poor urban planning and governance and called for anti-filth campaign, the second key-note speaker **Prof. Darshin Mahadevia** (Professor and Dean

Center for Urban Equity, CEPT University) outlined how urban planners and policy makers conveniently ignore the urban poor (our slums). She argued that the urban planning has become more regulatory ignoring the informal sector of the society, which contributes about 80% of the employment in the State. She highlighted the importance of tenure security for the informal sector in urban regions to maintain better health. She described the existing three routes for tenure security – collective action through NGOs, new housing for weaker section through public policy and through market action. Drawing from her study in two wards in Ahmedabad she demonstrated how poor tenure security is linked with poor services affecting human health.

Research findings

The second half of the forenoon session was devoted to presenting the preliminary findings from the research project ‘Urbanization, Water Management and Human Health in Ahmedabad city’. The Project Coordinator **Dr. V.S.Saravanan** (Senior Researcher, Center for Development Research, University of Bonn), highlighted the worldwide growing importance of water supply and sanitation, and more so, the importance to understand the role of water management for human health especially in rapidly urbanizing economies. Ahmedabad set a perfect example, with more than 90 percent coverage of drinking water and sanitation, the city still faces increasing water- and vector-borne diseases (hereafter the diseases). The research findings were presented in three parts. The first part highlighted how the spread of diseases is historically rooted in the legacy of **urban planning and management**, and in the current state of **urban governance**. The second part followed the path of John Snow’s in finding the cause of diseases. This involved **mapping** the quality of water infrastructure and the incidence of diseases in two wards for two years (2011 and 2012). The **quality of water infrastructure** took into considerations the occurrence of water leakage, water quality issues and mixing of drainage and drinking water as reported by people to the City Engineers office and action taken by the officials to these complaints in the wards. This mapping was spatially correlated with confirmed incidences of water-and vector-borne diseases (as reported to the urban Health Centre) over a period of two years. This showed convergence of poor water infrastructure and high incidence of diseases in the selected two wards in the city. Though these were crude indicators, they illustrate a simplistic spatial correlation between poor infrastructure and incidence of diseases. It further highlights that the major contamination in drinking water takes place between the distribution-point and at the end-user point - due to mixing of sewerage and drinking water, illegal connections, and poor quality of water infrastructure.

“Tenure security improves quality of life, and in turn human health”.

Prof. Darshini Mahadevia,
Dean CEPT University

“Following John Snow, a renowned epidemiologist in 19th Century, the study finds a strong spatial correlation between poor infrastructure and spread of water-transmitted diseases”.

Dr. V.S. Saravanan,
Senior Research Fellow,
ZEF, University of Bonn

The third part from **Ms Shahin Saiyed** (Research Fellow, ZEF-IIPHG) highlighted results from a household survey that pointed out the importance of **social, economic, environmental and demographic factors** influencing the incidence of (confirmed) diseases in the sampled households. The survey revealed more than one incidence of diseases in 30% of the household between January to July 2012. Many of the households also had a number of chronic diseases, mainly pertaining to heart disorders, tuberculosis, diabetes, thus a probability of co-morbidity among individuals. The preliminary analysis reveal the role of social behavior of the households (maintaining hygiene, eating habits along the roadside, high mobility of the households, higher family size, consuming alcohol, and lesser education of adults in the household), poor quality of housing, occupation of the household members and the environmental hygiene (water stagnation around the house, bad smell in drinking water, households in low lying areas, and growing leakage in the drinking water pipeline) as a crucial cause for the incidence of diseases at the household level. Dr. Saravanan emphasized that the research is ongoing with a prospective survey among selected households (Sep 2012- Feb 2013) still to be completed, which will throw light on the socio-behavioral characteristics of the individuals, and specific factors influencing the incidence of diseases. The year 2013 will be primarily committed to analyzing the information (quantitative and qualitative) collected across different scales (individuals-households-ward-city) and using diverse spatial and statistical analytical tools.

The project findings were complemented with two other presentations on **urban health issues**. **Dr. G T Makwana**, (Dy Health Officer, Ahmedabad Municipal Corporation) examined the focal outbreak of the infectious viral hepatitis in Ahmedabad between 2011-12. Dr. Makwana revealed that many of the **outbreaks** happened due to **pollution of water**, especially between the pumping station (source) and the user-end (household). He identified illegal water connections as the foremost causes of pollution. Due to illegal water connections the pipes were broken. This gives chances for mixing of drainage and drinking water leading to infectious hepatitis. He cited many households go for illegal connection due to complicated process to get piped drinking water and sewerage connections. He called for 24x7 supply of water, raising awareness for the importance of safe water (boiling), and strengthening the health management information system. **Dr. Manvita Baradi** and her team from the Urban Management Center (UMC) shared their experience of preparing the health plan in Pune, Jaipur and Bhubaneswar in the country. Drawing from the case of Bhubaneswar, they highlighted an inadequate information system, poor health infrastructure, inadequate urban policies incorporating health dimensions, and inadequate interdepartmental coordination hampering the health status of the urban population.

Conclusions

Overall the workshop questioned the approach of 'improved' measures to achieve safe drinking water and sanitation measures, and to reduce growing infectious diseases in urban region. While improving the water infrastructure is of high importance, the workshop participants discussed and debated on issues that could be a precondition before venturing into this high capital intensive system. Drawing largely from the findings from the ZEF project, keynote lectures and other presentations, the suggestions were broadly on the following topics:

- (i) Strengthening health management information system (improving the monitoring of water infrastructure, entomological monitoring, and geo-referencing of the health-related information),
- (ii) Identify areas for improvement in urban policy (integrating health in urban planning process, improvement of drug policy, opportunities for secure land tenure, relook at staffing norms, identify incentives and disincentives for reducing incidence of disease).
- (iii) Identify areas for technological change (mapping the quality of pipelines, rehabilitating the existing sewerage and drinking water networks, technologies for cleaning sewerage lines and man-hole workers, improved technology for maintaining water pressure and leakages, use of electronic media for monitoring, water metering, and documenting success cases of water recycling).
- (iv) Early warning systems (strengthening the existing rapid response team, importance of geo-referencing the conditions of urban infrastructure)
- (v) Research on water pricing, incentives and disincentives mechanism, burden of direct and indirect cost of poor urban infrastructure on households, integrating the functionalities of urban departments, opportunities for safe disposal of solid waste, understanding of the co-morbidity of diseases)

Closing the workshop, Dr Saravanan thanked the participants, and the collaborating institutions for taking the project forward with some concrete research and practical initiatives along with Ahmedabad Municipal Corporation and also with Government of Gujarat.

WORKSHOP PROGRAM

ARE WE GETTING CROWDED, THIRSTY AND SICK?

URBANIZATION, WATER MANAGEMENT AND HUMAN HEALTH

24 January 2013

Hotel Cambay Grand, Near PERD Centre,
Sola Over Bridge, Thaltej, Ahmedabad - 380 054, Gujarat.

FINAL PROGRAM

TIME	NAME	TITLE OF THEIR PRESENTATION
CHAIR: Dr V.S.Saravanan, ZEF		
0900 – 0930	REGISTRATION	
0930 – 0945	Prof. Dileep Mavalankar, IIPH-G	Opening remarks
0945 – 1000	Dr. S P Kulkarani – MOH, Ahmedabad Municipal Corporation(AMC)	Overview of water- and vector-borne diseases in Ahmedabad
1000 - 1015	Mr Tarun Lad, City Engineer, AMC	Overview of water supply and sewerage network in Ahmedabad
1015 – 1045	Key Note address – Prof. Ghanshyam Shah, Indian Institute of Advanced Studies, Shimla	Urbanization and Public Health: some key issues
1045 – 1115	Key Note address – Prof. Darshini Mahadevia, CEPT	Tenure in low Income settlements and water accessibility in Ahmedabad
1115 – 1130	Tea Break	
CHAIR: Dr. Dileep Mavalankar, IIPHG		
1130 - 1145	Saravanan, V.S, ZEF	Urbanization, water management and human health - An overview of the project
1145 – 1215	Saravanan.V.S, ZEF	Urbanizing diseases: complexity of water-transmitted diseases in Ahmedabad
1215 - 1245	Saravanan.V.S, ZEF	John Snow (re)visits India: water infrastructure and human health in Ahmedabad
1245 - 1315	Saravanan.V.S, ZEF, Deepak Saxena, IIPHG and Shahin Saiyed-ZEF.	Integrated health risk assessment - Examining health inequities among the urban residents
1315 - 1400	Lunch	
CHAIR: Dr. Aparajita Shukla, NHL Municipal Medical College		
1400 - 1430	Dr Bhavin Solanki, Deputy Health officer, AMC	Monitoring and reporting of Public Health issues in Ahmedabad City
1430 - 1500	Dr G.D Makwana, Deputy Health Officer, AMC	Comparative analysis of infective hepatitis outbreak investigations reports in the Ahmadabad municipal corporation area (2010 – 2011)
1500 - 1530	Dr. Manvita Baradi and Meghna Malhotra, UMC	'City Health Plan Preparation: Pune, Bhubaneswar, Jaipur'
1530 - 1600	Tea Break	
CHAIR: Dileep Mavalankar, IIPHG and V.S.Saravanan ZEF.		
1600 - 1630	Group discussion and future research initiative	Participants will be divided into 3-4 groups to discuss possible future research initiatives.
1630 - 1730	Presentation from each group and concluding Remarks	

List of Participants

S.No.	Name	Institutional Affiliation	Position	Address	Email
1	Adesh Chaturvedi	United Nations Development Program (UNDP)- Jaipur	State Project Coordinator,	Rajasthan, Capacity Development for Local Governance, UNDP-Jaipur Rajasthan	adeshchaturvedi@hotmail.com
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3	Aparajita Shukla	NHL Municipal Medical College,	Associate Professor	V. S. General Hospital Campus, Ellisbridge, Ahmedabad - 380 006	draparajita73@hotmail.com
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6	Bhagiya N O	Ahmedabad Municipal Corporation	Asst. Engineer,	Bapunagar	
7	Bhavin Solanki	Ahmedabad Municipal Corporation	Deputy Health Officer,	AMC	

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8	Darshini Mahadevia	Faculty of Planning and Public policy, Center for Urban Equity, Center for Environmental Planning and Technology (CEPT) University	Professor and Dean (Acting), and Member-Secretary (Centre for Urban Equity)	University Road, Navrangpura, Ahmedabad, INDIA, 380009	darshini@cept.ac.in
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30	Mayur Patel	Ahmedabad Municipal Corporation	Dy City Engineer	Ahmedabad Municipal Corporation	
31	Falguni Mistry	Ahmedabad Municipal Corporation	Dy City Engineer	Ahmedabad Municipal Corporation	
32	Darshana Patel	Ahmedabad Municipal Corporation		Ahmedabad Municipal Corporation	
33	Yashpal Prabhakar	Ahmedabad Municipal Corporation		Ahmedabad Municipal Corporation	
34	Tejas Shah	Ahmedabad Municipal Corporation	Deputy Health Officer,	South Zone	-
35	Anna Zimmer*	University of Luzanne	Senior Research Fellow		-
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37	Harikumar Bhaskar	NSS Ayurveda Hospitals	Medical superintendent & Affiliated researcher at University of Heidelberg	Vallakulam and Aranmula	doctorhari@gmail.com

**Participants who could not make for the workshop.*