

Drinking water issues in Greater Mumbai mapped using GIS for location specific solutions

The scarcity of adequate drinking water is global, but its' solutions are mostly location specific. Indian Institute of Environment Management (IIEEM), an R&D institute in Environment Management, Biotechnology and Bioinformatics at the South Indian Education Society (SIES) campus in Navi Mumbai is identifying and addressing location specific drinking water issues in slums in Greater Mumbai with the help of GIS technology.

The project is being supported by the Natural Resources Data Management System (NRDMS) Programme of Department of Science & Technology (DST), which is promoting R&D for solving area specific problems based on geospatial technology.

As per Census 2011, population of Greater Mumbai is 12.44 million, out of which about 41.84% lives in slums. In the present project, conducted at SIES IIEEM Navi Mumbai, drinking water quality of various slum locations of Greater Mumbai was analyzed in the laboratory.

In order to address drinking water issues in detail, a questionnaire survey and analysis was conducted in selected slum locations. Officials from Municipal Corporation of Greater Mumbai (MCGM) have supported in this survey. Participation of local slum dwellers was ensured in the study since the beginning of the project.

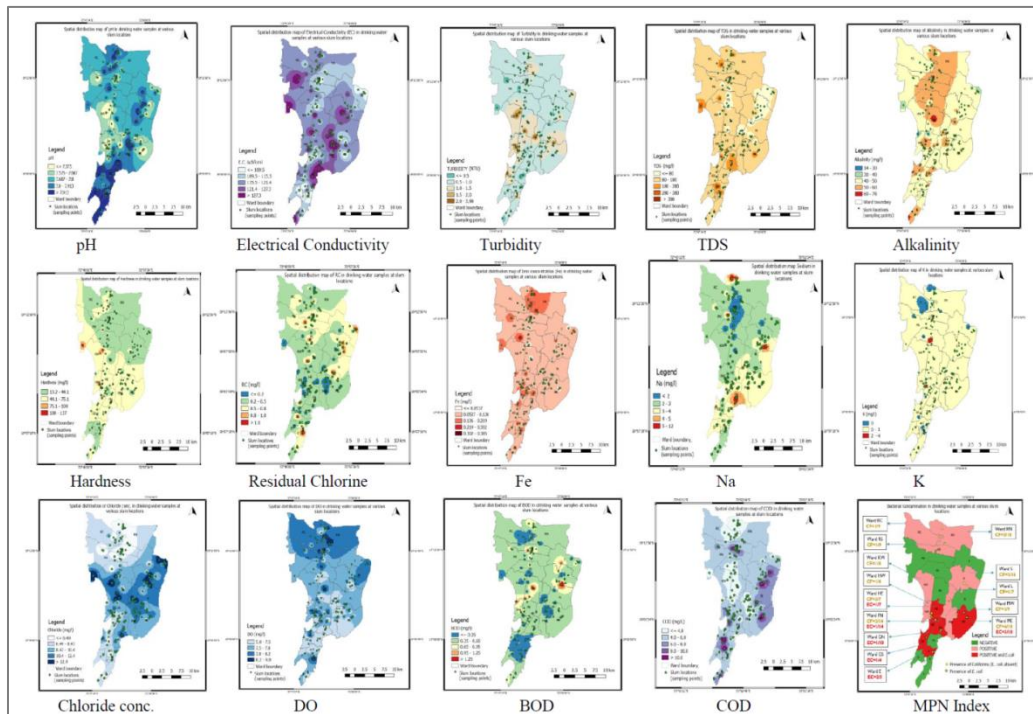
GIS based water quality maps were generated on the basis of the survey and analysis, which were then used for analyzing poor drinking water quality zones. Such GIS based database help in effective planning and management. Low cost water purification methods were also recommended for slum residents.

Dissemination of knowledge on low cost drinking water purification methods was conducted through a training programme on 'Management of Drinking Water Quality'. Training programme was followed by a one day workshop on 'drinking water management in urban areas and on role of GIS in mapping and planning. This helped sensitize various stakeholders like MCGM officials, local slum residents, NGO representatives and researchers.

Ground water quality was also analyzed for selected wards of Greater Mumbai. Poor ground water quality areas and saltwater mixing zones were identified since the study area is located in coastal region. Salt water intrusion zones were identified and mapped in selected wards of Greater Mumbai using GIS.



Slums in Greater Mumbai



Water Quality maps of slums locations of Greater Mumbai



Dr. Saumya Singh, Principal Investigator of the Project, conducting Training Program on “Management of Drinking Water Quality”



One Day Workshop on “Drinking Water Management in Urban Areas and Role of GIS in Mapping and Planning”