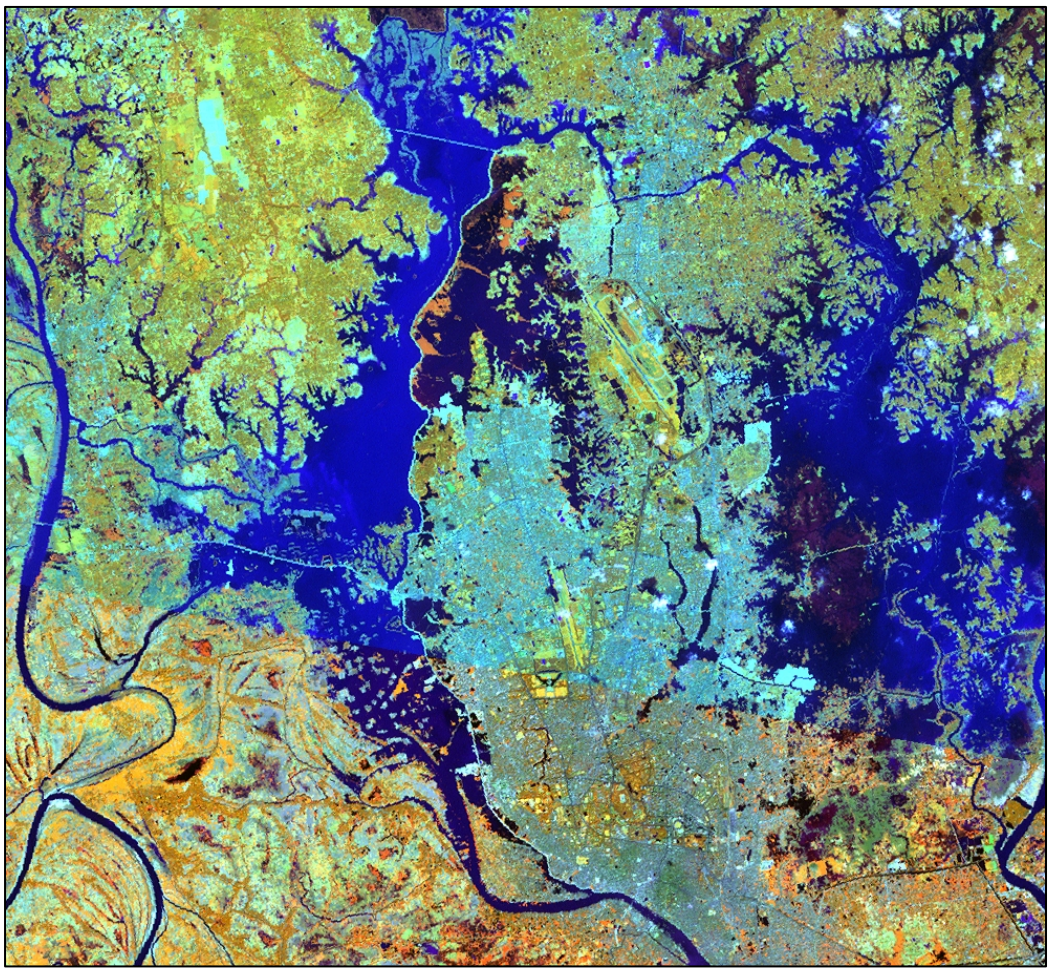
Project of a Berlin-Bielefeld Consortium to the DFG Priority Programme 1233 Megacities: Informal Dynamics of Global Change

DHAKA-INNOVATE



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Informal settlements, economic and environmental change, and public health - Strategies to improve the quality of life in Dhaka

Key word: DHAKA-INNOVATE

Applicants:

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Abstract

DHAKA-INNOVATE is centred around the informal settlements of Dhaka and focuses on 3 interwoven topics of vital relevance for the future development of the Mega-City of Dhaka, Bangladesh: Firstly, socioeconomic development, limitations, and improvement strategies; secondly, climatologic and air pollution effects from local to global scale; thirdly, public health issues related to socioeconomics, climate and air pollution. The research is undertaken in a spatially explicit way, linked in with remote sensing derived meta-indicators, and integrated via GIS-based modelling approaches.

The research is taking into account the globalised framework of relevant processes, both socioeconomically and environmentally. Local effects will hence be embedded in a multiscale framework, focussing to derive relevant indicators in the context of global, regional and local driving forces. Results will on the one hand facilitate an integrated modelling allowing for future perspectives in the light of relevant processes in the context of Dhaka. On the other hand, indicator based and spatially explicit explanation pathways open up the opportunity to transfer results to other Mega-Cities.

Profile and Objectives

The members of the research group follow up with the concept of DFG that “Mega-Cities are both subject to global ecological, socio-economic and political change as well as significantly contributing to it in their turn”. The federal government’s scientific board for „Global Change“ refers in its annual report to the environmental degradation by uncontrolled urban growth and the resulting “Favela Syndrome” as early as 1996 (WBGU 1996, 5). Therefore, the research group welcomes the call for proposals and suggests a project focussing on the improvement of the **quality of life and human health in the informal settlements of the Mega-City Dhaka**, Bangladesh’s capital.

The consortium intends to provide a contribution to the aims of the priority programme, i.e.

(1) analysis of complex processes

(2) orientation to the interaction between different sub-processes

(3) development of models, scenarios and management strategies.

Further on, the consortium will bring new knowledge especially to areas 2 “Dominance and differentiation of urban economies” and 4 “Complexity and dynamics of material and resource flow”; nevertheless, there are strong relationships with the 4th area, too.

The proposed project is focusing on the problems of **marginal quarters of Dhaka** and their wider environment. Particularly in marginal settlements, the consequences of uncontrolled growth become evident as “**syndromes**” or “complex diseases”. The syndromes cannot be “healed” separately, being components of a complex network of ecologic, economic, and social components. It is consequently necessary to develop adequate instruments and methods, which contribute to improve the quality of life in such marginal quarters.

At a starting point, the existing problems and syndromes of the natural and socioeconomic urban system have to be defined (**assessment of the exposure**), followed by a definition of **goals and hypotheses**. This is the basis for elaborating **applicable and sustainable models and scenarios**. It is beyond doubt that ecological risks and socioeconomic problems depend in multiple ways on each other. For instance, inadequate sanitary or public health systems, and socioeconomic stress do obviously not only interact among themselves, but are directly connected with physical issues like intolerable air pollution, vegetation loss and degradation, or uncontrolled land use change.

General Question	Sustainable Development of Economy, Climate and Health in marginal quarters of megacities – case study Dhaka	
Problem	The uncontrolled development of marginal quarters with a spatial mixture of insufficient housing conditions, lacking infrastructure and informal activities is directly connected to health problems of the population and environmental stress (air pollution, water)	
Challenge	One central element of sustainable development of Mega-cities is the improvement of the structure of marginal quarters, one decisive element is the transformation of informal activities to improve the economic base, the health situation and the environment based on geoinformation	
Participants of the research group	Prof. Dr. W.Endlicher Prof. Dr. E. Kulke Prof. Dr. A. Krämer Prof. Dr. P. Hostert	Climatology Economic Geography Public Health Geomatics

Sub-projects

The research group proposes three closely linked sub-projects on ecological, socioeconomic and public health. These are interwoven by cross-cutting methods through geomatics approaches, the fourth sub-project of the consortium:

Sub-project 1:

Limitations and potentials of development in the "informal sector" (Prof. Dr. Elmar Kulke)

Sub-project 2:

Exposure to heat waves and air pollution as well as the use of renewable energy resources (Prof. Dr. Wilfried Endlicher)

Sub-project 3:

Coping with the burden of disease, epidemiological models and public health interventions (Prof. Dr. Alexander Krämer, University of Bielefeld)

Sub-project 4:

Geomatics based assessment and analysis of informal growth and settlement structures (Prof. Dr. Patrick Hostert)

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