



An atlas on geo-information for urban spatial planning in the Dhaka Metropolitan Region, Bangladesh

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Dhaka Metropolitan Region (DMR) can be considered third of the fastest growing mega-cities in the world, receiving more than 70 new inhabitants hourly. Consequently, densely built-up areas in the developed parts of DMR are subject to extensive restructuring as common six- or lower storied buildings are replaced by higher and heavier constructions. Additional stories built on existing houses occasionally exceed the allowable bearing pressure on the subsoil as supported by the foundations. Additionally, newly developing city areas are projected in low-lying areas modified by extensive, largely un-engineered landfills. These terrains bear widespread unfavorable building ground conditions down to 30 meters depth.

The urban planning authority RAJUK is continuously developing a detailed area plan (DAP) that includes an overview land use plan at a scale of 1:50.000 covering the entire DMR area. Supporting urban overview planning with geo-information, the technical cooperation project “Geo-Information for Urban Development” (GUD) between Germany and Bangladesh prepared spatial information on the three most important geo-factors identified by RAJUK relevant for overview planning at the DAP scale, namely general foundation suitability, inundation potential, and earthquake hazard potential.

The spatial products of the GUD project are compiled with a description on workflows, background data used and the engineering geological database into a comprehensive atlas. The atlas considers geo-information from the perspective of urban spatial planning to form one important component of environmental information mandatory. The atlas, structured to attract non-geoscientists, first introduces geo-information for urban planning with highly abstracted map information on general building ground suitability. The latter is a combination of the three geo-factors mentioned above, presented in a single map and accompanied by general recommendations on suitable infrastructures developments in areas with specific subsurface properties. For readers that are more experienced and professionals, the atlas further presents the three geo-factors in more detail, including maps of single parameters used to produce maps on foundation suitability, inundation potential and earthquake hazard potential. Also described is the data for generating the maps of the atlas. The geospatial information presented through the atlas is intended to support future risk-sensitive urban planning in the DMR area at the DAP scale.