

## ENVIRONMENTAL IMPACTS OF URBAN AGGLOMERATIONS

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**Abstract:** Air pollution is a serious problem, in particular in Metropolitan areas of developing and transition countries. Major contributors to air pollution in these regions are emissions from traffic, domestic heating and industry as well as from changes in land-use (e.g. biomass). Because of the expected changes in urban population, standard of living, energy demand, climate change, transportation issues, economy and urban sprawl the future air pollution situations will reach levels leading to ecological and socio-economical consequences and health risks which are intolerable and require the implementation of mitigation and adaptation measures on urban and regional scales.

Emissions from Metropolitan areas are also the major global sources of environmentally important pollutants and thus are significant contributors to climate change by interactions on regional/continental scales. In the vicinity of conurbations the anthropogenic/biogenic emissions lead to high concentrations of secondary pollutants. The characteristics of these emissions (e.g. composition, heterogeneity, variability) and the processes leading to the corresponding spatial distribution of the air pollutants are not known. Emission reduction measures will affect not only air pollutants levels but also greenhouse gas concentrations, which are related to positive climate feedback mechanisms and are often in contradiction to each other. Therefore only interdisciplinary and holistic approaches can give solutions in order to improve the air quality and quality of life in urban agglomerations.

Within the frame of the German HGF-Initiative „Risk Habitat Megacity“ air quality is in close connection with the transportation sector on one hand side and health impact assessment studies on the other. Based on the cross-linkage of different disciplines, first results of the assessment of the air quality and the impact of global climate change to the air quality in urban agglomerations like Santiago de Chile or Mexico City will be presented.