OVERVIEW

The very dynamic evolution of the cities poses special challenges for mobility concepts. In this context METRASYS addresses the topic of mobility in Hefei, the capital of Anhui Province. According to the recent census, 5 million people live in Hefei, among them 3 million people live in the urban area. Meanwhile, rapid motorization in Chinese cities is significantly impacting the way people live as well as the environment. The rapid growth in private car ownership has lead to excessive road constructions that are still insufficient.

APPROACH

METRASYS aims to provide decision-makers with the means to effectively implement and to efficiently guide sustainable transport in the city of Hefei. Here, special emphasis is put on the general transferability of development approaches on traffic management for comparably megacities worldwide. The cooperation with the relevant Chinese stakeholders has yielded valuable insight into the development of Hefei and guided an evolving approach to integrate transport and urban planning with the support of local decision-makers.

The approach devised in the project addresses both planning and operational aspects of the transport sector, supported by the deployment of a sophisticated geographic information system (GIS) and an advanced traffic management system. This system also facilitates environmental evaluations and analyses with an emission and pollution dispersion model developed in this project. This in turn provides a valuable feedback to the transport and urban planning process. Furthermore, the results are used to explore the opportunities in climate finance, which provides additional incentives for sustainable transport development.
RESEARCH AREAS

As indicated above, the project works in four main research areas, all related to energy efficient future mega cities:

1 **Technology Development**
   The developed FCD System provides traffic services which are distributed to road users through Digital Multimedia Broadcasting (DMB) using TPEG (Transport Protocol Experts Group), a new coding standard for detailed traffic and journey information to provide road user with comprehensive, up-to-date information.

2 **Model Development**
   The second area of investigation is the development of various models in order to assess the environmental and climate impacts of the traffic management system and the planned urban traffic development. The emission and immission models were successfully running with the collected data in Hefei for several days and were demonstrated at the Hefei environmental monitoring center. With the help of the models the monitoring center will provide an area-wide overview map of the pollutants for the city of Hefei.
   The traffic model for Hefei is currently developed in cooperation with the Nanjing University.

3 **Transport Planning**
   The third area of investigation is the integrated transport and urban planning. How is urban and transport planning organized in Hefei? What are the problems and how can METRASYS help to implement an integrated planning approach in the city of Hefei? Three main areas were identified: the new transport hub around the planned high-speed railway station, the old city center of Hefei as “Walkble City” and “Urban Planning Guideline”. The Hefei City Planning Bureau is currently engaged in elaborating guidelines in the various areas such as traffic management, traffic planning and urban development, with the intention to use these for the further development of the city.

4 **Climate Finance**
   The fourth area of investigation is the finance for sustainable climate-friendly transport. What are the opportunities to finance sustainable transport developments in Hefei through the Clean Development Mechanism (CDM) or other innovative forms of finance for sustainable low-carbon transport? Workshops with national and local institutions as well as face-to-face interviews revealed the structure of urban transport financing in Hefei as well as its shortcomings and opportunities. Based on this knowledge, the METRASYS project will propose solutions for sustainable transport financing for the city of Hefei. These solutions will be incorporated in scenarios for an energy efficient transport system in Hefei.

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