# GOVERNANCE FOR SUSTAINABILITY IN HYDERABAD (India)

## ACTION BRIEF

## STRATEGIC TRANSPORT PLANNING TOOL

**CODE:** HYD-AB1

**TOPICS:**
MOBILITY
PLANNING

### CHALLENGE

There is a growing awareness of the negative effects of an increasing motorized traffic in cities by relevant ministries and planning bodies in India. This relates firstly to the traffic and environmental quality of cities, but also increasingly to climate change both affecting as well as resulting from the transport sector.

Not only does the transport sector contribute to climate change with approx. 20% of the Greenhouse-Gas-Emissions (GHG) but its functionality - and with it the urban life and economy - is also badly affected by its implications e.g. rainwater floods.

So far, no standardized methodologies exist in India to quantify especially environmental impacts ex-ante for different strategies. However, these impacts need to be taken into account when choosing the most appropriate strategy for a "future-proof" and resilient transport system.

### ACTION

Against the backdrop of the above described situation the objective of the strategic transport planning tool (STPT) is to provide planning bodies with an instrument that supports them in answering the following questions:

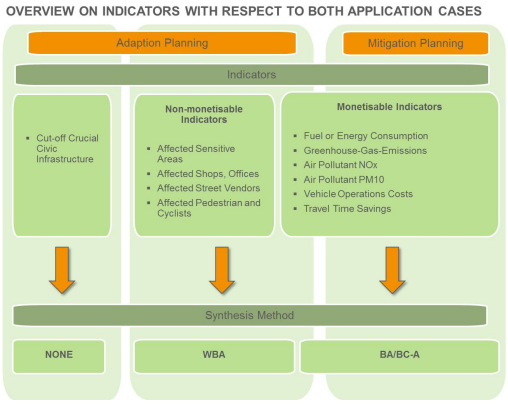
1. How can the transport infrastructure be adopted to extreme climatic events in the most efficient way (adaptation planning)?
2. What potentials for reducing energy-consumption, GHG- emissions and air pollution can be expected by certain measures or strategies in the transport sector (mitigation Planning)?

The STPT consists of a multi-modal transport model (TM), set-up with PTV software VISUM and based on secondary data from Hyderabad plus a tool for impact analysis. The range of impacts considered is shown in Fig. 1.

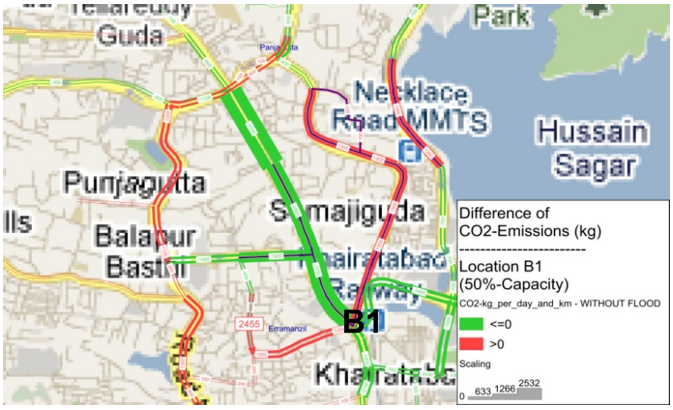
One special feature of the tool is that transport emissions are calculated directly within the TM with the newly embedded Module "HBEFA", based on the latest version of the European Handbook of Emission Factors for Road Transport (Fig. 2). Compared to the usual approach of calculating emissions externally to TM, the new way of emission calculation is more efficient.

In addition, the tool is able to incorporate specific climate change data, respectively flood locations, from the PIK-Tool CATHY. This facilitates adaptation planning as well as mitigation planning in the transport sector (see also Fig. 2)

The STPT has been developed and tested with different case studies by PTV and its Indian research partners: the National Institute of Technology Warangal (NITW), the Engineering Staff College of India (ESCI) and the Jawahrlal Nehru Technical University (JNTU).




Impact assessment: overview on indicators per application case




Direct comparison of $CO_2$-emissions between the cases no flood and flood of location B1 in TM (green=less emissions than no flood case, red=more) (source: own graphic, based on google maps)

## RESULTS

STATE OF IMPLEMENTATION:

– Strategic transport planning tool is set-up successfully

LOCAL USERS / TARGET GROUPS:

– Main users: local planning authority HMDA and bus service provider Andrah Pradesh State Road Transport Corporation (APSRTC). Accordingly, they were involved in the set-up by contributing data & local knowledge, as well as discussing the approach and results
– Second user: local research partner NITW, who also contributed know-how & data for the development of the tool

IMPACTS:

– Capacities on climate change impacts in the transport sector and on the methodology of ex ante evaluation, e.g. regarding the energy-efficiency of multi-modal transport strategies, were built with all authorities and partners
– NITW already included the method and know-how in its curriculum and in a capacity building programme for professional transport planners; so, a wider group of actual and future professionals and the planning quality/standards benefit from STPT
– HMDA and APSRTC will introduce the gained know-how in their planning processes

MULTIPLICATION:

– The tool was presented at various capacity building workshops at NIT Warangal and the Urban Mobility Conference India 2012 – the main transport planning conference in India on national level
– A user-friendly booklet on assessment procedure including an excel-tool is available at PTV homepage
– The tool will be multiplied within the scope of a master thesis at NITW

LONG-TERM CONSOLIDATION:

– Results of capacity building activities are very encouraging and should be continued and transferred to other institutions

## CONTACT

Project: Climate and Energy in a Complex Transition Process towards Sustainable Hyderabad - Mitigation and adaptation strategies by changing institutions, governance structures, lifestyles and consumption patterns
Web: www.sustainable-hyderabad.de

Tanja Schäfer
PTV Group
Email: Tanja.schaefer@ptvgroup.com
Web: www.ptvgroup.com
Downloads:
http://conceptsandsolutions.ptvgroup.com/de/referenzen/

SPONSORED BY THE
Federal Ministry of Education and Research
Future Megacities
Megastädte von morgen
www.future-megacities.org
SUSTAINABLE HYDERABAD