Indo-Norway Project
CLIMATRANS: Climate Change Mitigation and Adaptation

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Financed by:

Partners:
CLIMATRANS: a challenging project

The Research Council of Norway approved financing in June 2014

Highlights of major events since:

• Paris Climate Accord 2015: India an important signatory to the Paris Agreement
• Significant decrease in costs of renewable energy and storage & potentials for electrification of the transport systems in India
• By 2050 India could significantly outperform its commitments under the Paris Agreement
• Rapid economic growth in India and optimistic predictions for coming years
• Creation of middle class, particularly in urban areas (yet a challenge)
• Increase in occurrences and severities extreme climate events
• Consequences for mitigation and adaptation scenarios for mega cities in India
• Recognition of studies on only on mitigation but also on adaptation
A multi-disciplinary and multi-theoretical project

The project focuses on five broad area of analysis:

- Current situation
- Outlining of trends up to 2050
- Scenario analysis
- Scenario evaluation
- Identification of institutional and other barriers for implementation

The selected case cities are:

- Delhi
- Mumbai
- Bangalore
Project’s milestones: (1)

- Development of common conceptual and methodological framework
- Past trends and future projections of exogenous variables for demand for transport
- Prediction of occurrences of extreme weather (rainfall and temperature) under Climate Scenario RCP 8.5 Predictions of CO2 emissions as well as PM2.5 and other pollutants from passenger transport in the case cities using rapid assessments
- Conversions of PM2.5 emissions to concentrations under RCP8.5 for the case cities
  Evaluation of mortality due to PM2.5 concentration of using WHO model
- Development of transport model systems for the 3 case cities
- Development of flooding models for Bangalore, Delhi and Mumbai
- Calculations of the Business as Usual Scenarios (BAU) up to 2050
Project’s milestones: (2)

- Each case cities has organized 2-3 stakeholders’ meeting
- Identification of policy packages for mitigation and adaptation based on a DELPHI study and consultations with stakeholders
- Calculations of policy scenarios up to 2050
- Calculations of CO2 emissions from the urban transport sectors using transport model systems for the case cities
- Calculations of the health effects due to PM2.5 for BAU and policy scenarios
- Evaluation of policy scenarios
- Examination of barriers to implementations

CLIMATRANS is the first international project that addresses the importance of mitigation and adaptation policies jointly.
Needs for further research

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Partners:
Data: Access to existing data and need for better data

- Historical data on extreme events (extreme rainfall and temperature)
- Measurement data: PM, NO2, O3 and background measurement data
- Time resolution off the data on measurement of pollutants (is very coarse), important for mitigation strategies
- Data on ammonia emission (important component of PM2.5)
- Environment: Emissions (all sectors) at national level and at urban areas
- Measurements of concentration of all local pollutants in urban areas
- Health impacts due to extreme weather, in particular due to high temperature
- Land use data: Work locations and settlement patterns by socio-economic categories
- Income distributions in urban areas
- Travel survey: At national level and in urban areas
- Car ownership data, car fleet
- Traffic counts: All modes at network level
- Transport related injuries and fatalities
Modelling efforts

- Climate and environment:
  - Modelling for the calculations of concentration of pollutants at city levels
  - Flooding
  - Evacuation plans

- Health impacts:

- Transport model systems:
  - Improvements in the developed model systems based on better data

- Unit values for evaluation
  - Values of travel time savings by mode
  - Economic (monetary) values of mortalities due to exposure to pollutants and extreme heath
  - Economic (monetary) values of fatalities and injuries related to traffic accidents
Further need for evaluation

Equity analyses
- Environmental justice
- Socio-economic
- Related to gender
- Accessability

Livability

Economic impacts
The CLIMATRANS project partners will present part of our achievements.

Your comments and inputs are most valuable to us.

And

Our utmost gratitude to Professor Sanjay Gupta and SPA for hosting this event.