Enabling Sustainable Mobility in Indian Cities through better Institutions And Governance

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EMBARQ is a program for sustainable transport at the World Resources Institute. The EMBARQ global network catalyzes and helps implement environmentally and financially sustainable transport solutions to improve quality of life in cities.
EMBARQ’s Programs of Work in India

- **Bus Karo** - City Bus Systems, Bus Rapid Transit
- **Connecting the Last Mile** - Auto-rickshaws, Public Bicycle Schemes
- **Sustainable Transport Saves Life** - Road Safety Audits, Public Health Linkage
- **Making the Most of Metros** - Station Accessibility, Road Safety Audits, Station Area Development
- **Sustainable Mobility & Housing** - Pedestrian & Bicycling Mobility, Road Safety
- **Influencing Statutory Documents** - Policy Documents, Comprehensive Development Plans, Master Plans
Overview

- Background
- Defining institutions
- What comprises institutions?
- Urban transport institutions in India and the related challenges
- Attempted reforms and demonstrated success in India; Bangalore and Ahmedabad
- Where are we heading from here?
Defining Institutions

“The term ‘institution' is used to refer to many different types of entities including organizations as well as the rules, norms, and strategies used to structure patterns of interaction within and across organizations. While the buildings in which organized entities are located are quite visible, institutions themselves are usually invisible.” (Ostrom, 1990, p.822-823)

Institutions are “systems of hierarchical man-made rules that structure behaviour and social interaction. They consist of established, durable and stable rules, and vary from social values through norms to laws with ensuing specific rules.” (Groenewegen et al., 2010, p.25).

Institutions are the “humanly devised constraints that shape human interaction”. (North, 1990, p. 3),

“Organizations are groups of actors that share a common interest or goal; institutions structure and institutions define the relationships between actors and organizations.”. (Rietveld and Stough, 2006, p. 100).

The concept of governance encompasses institutions. (Biermann et al., 2009)
Institutional Analysis could include the following:

- Analyzing data coming from agencies such as bus companies, hospitals, traffic police, etc. to evaluate performance of the system.
- Examining how government agencies, schools, universities, etc. implement policies.
- Examining relationships between various actors.
- Studying how laws evolve over time.
- Determining why certain agencies/individuals behave the way they do.
- Understanding responsiveness of enabling agencies to feedback from users and service providers.
- Others.
## Mapping objectives with Analysis

<table>
<thead>
<tr>
<th>Policy objective</th>
<th>Questions to be raised for institutional analysis</th>
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<tbody>
<tr>
<td><strong>General issues</strong></td>
<td>Do the policy-makers have predictable responses w.r.t the various kinds transport policy measures? How must policy proposals be framed to have a chance of being implemented (given self-interest of politicians)?</td>
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<td><strong>Environment</strong></td>
<td>How much importance environmental concerns get while selecting transport projects? What is the level of participation of the community and NGOs in such projects? Who ensures this?</td>
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<td><strong>Accessibility</strong></td>
<td>Are transport services available at locations and times users need them to be available? What is the maximum distance passengers are willing to travel (on foot or by other means) to access public transport? stops, metro stations and rickshaw stands safely? Are the city streets walkable and cyclable? Is transport disabled-friendly? Can people afford to access public transport services? Do the transport services provide for and encourage people from different social classes? Who ensures this and how?</td>
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What comprises institutions?

3 integral components of institutions:

- **Enablers**: laws, acts, policies, orders, rulings, codes, etc.

- **Actors**:
  - Service providers:
  - Enabling agencies

- **Functions**:
  - Regulation and legislation
  - Planning and provision
  - Coordination and monitoring
  - Financing/taxation/pricing/revenue distribution
The urban mobility crisis in India
The urban mobility crisis in India (cont’d)

Total Urban Travel Demand in India, 2011 - 2031
(Million Trips Daily)

Source: EMBARQ India Analysis
The urban mobility crisis in India (cont’d)

Estimated Growth in Emissions from Urban Transport – 2000 to 2030

- Estimated growth in emissions from urban transport has increased by +7.05% per year.
- From 55 million tonnes of CO2e in 2000, it is projected to reach 425 million tonnes in 2030.

Source: Schipper et al 2008
The urban mobility crisis in India (cont’d)

- Policies favouring the use of the personal automobile
- Urban sprawl and mismatch of transport demand with reliable, good quality and accessible public transport supply
- Deteriorating quality of life in cities
- Cities not responsible for urban transport
- Multiplicity of organizations
Urban Transport Functions in India

- Traffic management (violation checks)
- Regulation and enforcement regarding motor vehicle emissions
- Vehicle licensing
- Planning and development of transport infrastructure (road & rail networks)
- Maintenance of roads and road side furniture
- Air quality monitoring
- Public transport organization, regulation, and operations
- Financing and investment
- Integrated land use and transport planning
- Road safety
- Management of informal transport modes
- Non-motorized transport planning
- Ensuring citizens’ participating in transport projects
- Parking and freight management
- Vehicle inspection and maintenance
Bangalore
Bangalore City Profile

- Formed in 1537
- Southern India. Capital city of Karnataka
- Population of 8.4 million (2011 census)
- India’s 5th largest city
- Population growth rate of 4% for over a decade
- Vehicular population of 4.2 million and growing with 1000 new vehicles being added to the road every day
- Textiles, manufacturing, IT services, informal sectors provide employment
- Most diverse institutional framework for transport in India; in some ways also most progressive
Urban Transport Plans for Bangalore Metropolitan Region

Overview of institutional set-up for urban transport in Bangalore

Source: EMBARQ Training module, created by Vivek Vidyanathan
BBMP

- Democratically elected municipal council
- Maintenance and development roads (expand roads), pedestrian facilities & other non-motorised transport
- Bangalore’s history playing a role in deciding BBMP’s understanding of urban transportation
- Old city – Narrow roads, mixed land use
- Cantonment – Separation of land use, wide and metalled roads
- Road expansion as a transport strategy since 1950s.
- **Negligible focus on pedestrians/non motorized transport**
- Contractor driven system
BDA

- Formed in 1976 by state government
- Mandate to plan for Bangalore city + surrounding areas
- Has been successful in developing master plans for Bangalore, creating layouts, developing roads, flyovers and underpasses.
- Has been accused to being illegal, overstepping its mandate and not consulting with citizens.
- Continues to plan for Bangalore city and beyond
- Funded by the state government
Created to replace the BDA

Supposed to plan for Bangalore Urban, Bangalore Rural and Ramanagara districts (excluding that part which is planned by the BDA)

Has prepared a structure plan for the Metropolitan region, and a CTTS – both of which are pending approval from the state government

No real power yet
DULT/BMLTA

- Created in the mid 2000s to co-ordinate urban land transport for Bangalore
- Created under Centre’s influence
- No real power. Met with limited success
- Has managed to create cycling tracks, raised the importance of non-motorised transport.
- Future not clear
BMTC

 Bangalore’s sole bus based public transport service provider (monopoly)

 Fleet of 5800 buses + 78000 trips daily

 Is one of the few profitable bus based urban transportation service providers
The latest addition to Bangalore’s public transportation projects

- 6.5 kms, 6 stations currently under operation
- Total budget of first phase over Rs. 8 billion crores, which is more than the budget of BBMP.
- Criticized for tree felling, being non participatory and expensive.
Non-state actors

- PRAJA – commuter rail system
- Hasiru Usiru – Pedestrian rights, non motorised transport
- Environment Support Group (ESG) – Rights based perspective. Looks at transport as a means of development.
- Ride a Cycle Foundation – Cycling in captive campuses
- Bangalore Bikes Club – Recreational cycling activities.
- ABIDE – seeks to promote Bangalore Regional Governance Bill which will address institutional and financial aspects of transportation.
- Consultants like Wilbur Smith which prepared Mobility Indicators – 2008, SCE Crocen which prepared draft of Master Plan for Bangalore – 2015 and others
- Work with independent departments and no way to consolidate results and take them forward
Summing up

“The institutional framework of urban transportation in Bangalore is constantly evolving, much like the city and its region themselves….Even with the above description of the institutional framework, it is still not very clear how urban transportation projects are actually decided. There is no one document that charts the course of urban transportation projects or one that reports progress on them.”

Source: Vaidyanathan and King, 2011
Critique of the present structure

- Multiple agencies working with multiple/conflicting mandates: BMRCL, BBMP
- Lack of inter agency co-operation: DULTA, rank issues
- Presence of multiple planning documents; MP vs. CTTP
- All departments/local bodies are funded and controlled by province/federal government
- Agencies with little or no reporting to elected city representatives and citizens
- The city’s elected representatives citizens have no real say in what transport projects should be implemented
- Obsession with big ticket projects and motorized transport
- Lack of communication other departments which have no direct link with transport (housing, commerce, health, etc.)
Possible Institutional Improvements in Bangalore

- Devolution of power to urban local bodies. 74th amendment of the constitution talks about this. States have done very little to give powers to the city.
- Participation of non-profit/citizen groups in decision making can be viewed as a positive, though certain groups have personal motives. Also, how does one define a community?
- Funding issues/money flow needs to be sorted out before structures are put in place.
- Agencies to be given teeth to perform functions they were created for.
Ahmedabad: Institutional excellence creating the Janmarg BRTS
Ahmedabad Profile

- Largest city in the state of Gujarat
- 7th largest urban agglomeration in India
- Population of 5.6 million
- Textile capital of India
- Finance and administrative hub of the state
  - Award-winning BRTS
Launched in October 2009
India’s first full BRT service
Covers 31 kms.
Ridership more than double (nearly 60,000 passengers/day) since opening
Over 40% of these switched from motorized two- and three-wheelers
System includes:
  • pre-board ticketing
  • high-quality median-aligned stations with level boarding
  • real-time information at stations
Janmarg - Bus Rapid Transit System (BRTS)

- Centralized Control
- Distinctive Image
- Stations with Prepayment and Level Boarding
- Segregated Median Busways
- Large Buses Multiple Wide Doors
- Large Buses Multiple Wide Doors
Institutional and contractual changes crucial to the fundamental delivery of the BRT system:

- Strong leadership and coordination among government agencies
- Technical and operational planning: outsourcing crucial functions to Indian and international experts in sustainable transport systems
- SPV to manage the day-to-day operations of Janmarg
Unique Qualities of Ahmedabad Janmarg

- Financial model, system design, and infrastructure design all based on the operations plan that was derived from extensive demand estimates
- First Indian system to set up a BRT management agency
- Pioneer in introducing competitive tendering of new operational contracts and in tying new operators to performance-based contracts
- First BRT system in India to have a control centre that employs GPS installed in every bus
- All technologies bundled under a single provider
Lessons for Institutional Best Practice from Ahmedabad

- Leadership in administration
- Coordination of various government agencies for quick and optimal implementation
- Creation of lean management agency focused on implementation using SPV model
- Janmarg a service to citizens – AMC owns up the deficit
- Planning and decision making outsourced to CEPT – a centre of excellence for urban transport
- Under PPP model, distribution of responsibilities match the strengths of each agency
- Full spectrum of management issues addressed
- Competitive tendering and tying operators to performance-based contracts
- Continuous performance monitoring and commuter satisfaction checks
3 areas in need of immediate attention and improvement from the perspective of making urban transport in Indian cities more sustainable (and only possible through effective institutional management):

- Improving bus systems
- Improving intermediate public transport systems
- Enforcement of urban road safety measures/laws to ensure safety of pedestrians/cyclists/any non-motorized transport users
Framework for an Improved Institutional Structure (cont’d)

- **Good governance** - principles of good governance such as transparency, accountability, and public participation must be adhered to in any kind of institutional transaction.

- **Sustainability** - taking into account economic, social, and environmental sensibilities and sensitivities of the society and local/cultural context becomes an integral aspect of sound institutional framework.

- **Legal thrust** - any aspect that significantly affects human life and well-being, the environment, and social cohesion must be controlled/regulated with adequate legal backing and enforcement.
Recommendations made so far..

- Start writing guidelines; defining frameworks
- Financial assistance backed by sound institutional structure
- Monitoring and reporting on a regular basis
- Capacity creation; dedicated cadre of urban transport professionals in the Government
- Comprehensive UT Act
- Unbundling regulatory functions from operations
- Cities to take on larger responsibility and more functions related to public transport
Conclusions

- Need for a cultural shift in the way urban institutions work if we are to move towards sustainable mobility solutions

- At the core of institutional success is the human element which can bring in powerful agents of change, such as:
  - Willpower
  - Cooperation (less ego?)
  - Honesty
  - Conscience
  - The ability to stand up for a cause
  - Teamwork
Thank You!

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