Low Carbon Action Plan for Urban Freight in Panaji

Daring Cities Cornerstone Event

Supported by:

EcoLogistics
Low carbon freight for sustainable cities

based on a decision of the German Bundestag
Introduction to Panaji

**LOCATION**
15.29° N Latitude & 73.49° E Longitude

**AREA**
8.12 Sqkm

**WEST COAST OF INDIA**

**TOURISM - ATTRACTS FREIGHT**
- **2008 TO 2015**
  - 126% INCREASE
  - 5,48,117 to 12,37,019
- **FOREIGN**
  - 66% INCREASE
  - 83,292 to 1,38,504
- **DOMESTIC**
  - 33% OF THE STATE GDP

**EXISTING TRANSPORT STATUS**
- **VEHICULAR GROWTH RATE ALMOST DOUBLED IN 10 YEARS (2008 TO 2019)**
  - 98.6% DECadal
  - GROWTH RATE (APPROX) 8.4% AVERAGE
- **PUBLIC TRANSPORT**
- **SERVICE LEVEL BENCHMARK** 2%
The Corporation of the City of Panaji in collaboration with ICLEI South Asia started working on the project EcoLogistics in 2018 to build strategies and plans to develop and promote Low Carbon Urban Freight in Panaji.

Logistics is an important component of the urban mobility system.

- Freight vehicles, especially those in urban areas, produce more emissions and congestion than those that carry passengers alone.
- Has important impacts on the quality of life and working conditions in our cities.
- Variety of actors, needs and models of operation: e-commerce/home deliveries.
- Limited understanding and data about Urban Freight in Panaji.
LCAP Process

Stakeholder assessment - Discussions, interviews and followups

Analysis of existing freight commodities, issues, supply chains policy, infrastructure, regulations etc.

Multistakeholder committee formation, interaction and baseline presentation to the stakeholders

Gap Analysis - Regulatory, infrastructure, supply chains etc.

Formation of strategies - Short term, Medium term and Long term

Suggestions and comments from stakeholders to finalize the LCAP - UF
Approximate number of freight vehicles moving in the city (Daily)

- Heavy Goods Vehicles: 30 to 40
- Light Commercial Vehicles: 130 - 150
- Van/Rickshaws/Tempo/Pick up: 270 - 300
- Water Tankers + Night Soil Tankers: 110 - 130
- Two Wheelers: 500 - 600
- Bicycles: 10 to 15
- Urban Freight Hotspots: 3 to 4
- Freight Parking Stands: 2 - 3
- Loading - unloading bays: 5 (Market)
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**HCV**
- Highest in terms of total freight delivery by weight in Panaji
- Second highest in terms of total freight delivery by tonne-km in Panaji – for total trip length

**LCV**
- Highest in terms of freight delivery by tonne-km in Panaji – for total trip length
- Third highest in terms of total freight delivery by weight in Panaji

**SMALL SIZE FREIGHT VEHICLES**
- Second highest in terms of total freight delivery by weight in Panaji and total freight delivery by number of trips in Panaji

**TWO WHEELERS**
- Highest in terms of total freight delivery by number of trips in Panaji and total distance covered inside the city boundary

**Total freight delivery by weight in Panaji**
- HCV 10%
- LCV 74%
- Rest 16%
- Small freight vehicles 33%

**Total freight delivery by tonne-km in Panaji – for total trip length**
- LCV 74%
- Rest 16%
- HCV 10%

**Total freight delivery by number of trips in Panaji**
- 2 Wheelers -50%
- Small freight vehicles 33%
- Rest 17%

**Total distance covered inside the city boundary**
- 2 Wheelers 52.33%
- Small freight vehicles 33%
- Rest 17%
Freight Emissions in Panaji

Panaji CO2 and emissions for trip length within city boundary:
- 0.01 T
- 0.59 T
- 0.44 T

Panaji CO2 and emissions for total trip length:
- 0.01 T
- 6.68 T

4.19 Tonnes
- 0.01 T
- 5.74 Tonnes/Day

76.44 Tonnes
- 39.32 Tonnes
- 2.33 T

Total emissions (CO2) per day:
- 124.97 Tonnes/Day
Causes of emissions

- Wrong parking → Obstruction and congestion
- Inadequate parking → Congestion and increases idling time
- Infrastructure gaps → Inefficient supply chains
- Unplanned infrastructure → Obstruction and congestion
- Inorganized street activities → Obstruction to the movement and congestion
- Lack of technical advancements → Increased emissions
- Weak enforcement and indisciplined traffic → Obstruction and congestion
### Micro issues identified

<table>
<thead>
<tr>
<th>Street design</th>
<th>Traffic management</th>
<th>Traffic laws</th>
<th>Policy</th>
<th>Regulations</th>
<th>Road Safety</th>
<th>Infrastructure</th>
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- **Conflict of street activities**
- **Conflict between freight and cars**
- **Unsuitable road geometry for freight vehicles**
- **Portable Generator vehicles-ideal parking on the roads**
- **Absence of truck terminal**

- **Encroachment on freight parking by cars**
- **Absence of sufficient parking/unloading bays at the Panaji Municipal Market**
- **Congestion due to onroad unloading at Panaji Fish Market**
- **Absence of sophisticated unloading equipments**
- **Irresponsible Driving**

- **Inadequate freight signages**
- **Missing Landing/Birthing facility**
- **Unplanned and unsignalized junctions**
- **Absence of Traffic Barriers**
- **Traffic congestion due to on road loading - unloading activity**
Identified Goals for Panaji

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- **Road Safety**
  Reduce the social externalities from the sector

- **Low Carbon**
  Reduce environmental externalities from the sector

- **E-Commerce & reverse logistics**
  Making Urban logistics future ready

- **Urban Economy**
  Enhance urban economy through circularity

- **Integrated Urban Mobility**
  Reduce conflict between passenger and goods vehicles

- **Optimisation of Last mile logistics operations**
  Improving integration between long distance freight transport and urban freight

- **Resilient supply chain**
  Increase the resilience of essential commodities supply chain for shocks

- **Cost Reduction**
  Enabling a more efficient management of goods distribution
Strategies for short, long, medium

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**Short term strategies**
- Duration: 0 to 3 years
- Difficulty level: Easy - Medium
- Scale: Small scale, Street/ward/city level project
- Integration with the existing projects
- Demonstration to show the reduction in emissions

**Medium term strategies**
- Duration: 3 to 10 years
- Difficulty level: Medium
- Scale: Small - Medium, City/block level
- Medium scale infrastructure projects
- Expansion of short term projects

**Long term strategies**
- Duration: 10 to 20 years
- Difficulty level: Medium - high
- Scale: Medium - Large, Block/District/state level
- Large scale infra projects
- Development of detailed policies for freight
- Requires long term planning
- Projects based on short and medium term project experiences
Proposed strategies

Infrastructure + Regulatory/Policy/management + Planning + Technology

Short term strategies
- Easy loading - unloading
- Improved freight parking availability
- Electric bicycles for last mile
- Street Management Plan for freight
- Freight vehicle management
- Route optimization plan for Solid Waste vehicles
- Freight Signages

Medium term strategies
- Redesign intersection
- Landing/Birthing facility for ferries
- CNG
- Integrated planning for the market cluster
- Electrification
- Amendments to the existing freight policy
- Freight aggregator

Long term strategies
- City/State level logistics Policy
- Truck Terminal
- Integration of freight into regional and development plans
- Consolidation centre
- Low carbon zones for the city
- Regulating on street unloading - loading
THANK YOU

In India, freight transport volumes will grow by 6% annually between 2015 and 2030.

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Local Governments for Sustainability
SOUTH ASIA