Analysis of cycling potential in small and medium-sized Brazilian cities

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Urban sprawl and motorization of cities

Source: ITDP
Federal Law 12.587/2012:

Brazilian modal share:

Share of cycling by cities’ population:

Source: Bicycle Innovation Lab; ANTP
70% of Brazilian pop. lives in small and medium-sized cities.

- **AVOID**
  - Reduce or avoid the need to travel
  - System efficiency

- **SHIFT**
  - Shift to or maintain share of more environmentally friendly modes
  - Trip efficiency

- **IMPROVE**
  - Improve the energy efficiency of transport modes and vehicle technology
  - Vehicle efficiency

Source: IBGE; GIZ
Objectives: Why cycling?

Potentialities

- Small-sized cities
- Medium-sized cities

Utilitarian cycling incentive

Disorderly growth

Limitation of financial and human resources

Lower investments for active transport

Compacted cities

Intermodality

People-oriented urban development
Study delimitation:

<table>
<thead>
<tr>
<th></th>
<th>UBERLÂNDIA (MG)</th>
<th>CABO FRIO (RJ)</th>
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</thead>
<tbody>
<tr>
<td>Population (2017)</td>
<td>676.613</td>
<td>216.030</td>
</tr>
<tr>
<td>Population density (inhab/km²)</td>
<td>164,42</td>
<td>526,37</td>
</tr>
<tr>
<td>Vehicle fleet [motorisation rate]</td>
<td>402.292 [0,59]</td>
<td>130.751 [0,61]</td>
</tr>
<tr>
<td>Available cycling data</td>
<td>None</td>
<td>Incipient</td>
</tr>
<tr>
<td>Economic vocation</td>
<td>Industry/agricultural, logistic</td>
<td>Industry/oil &amp; gas, tourism</td>
</tr>
<tr>
<td>Tourist vocation</td>
<td>Business &amp; events</td>
<td>Sun &amp; beach, ecotourism</td>
</tr>
</tbody>
</table>
Uberlândia: Present situation

Existing system = 6 terminals + 2 BRT

Planned system = 9 terminals + 6 BRT

Subtitle
Structural Public Transport System
Terminal
Existing
Existing / inactive
Planned
Rapid Transit System Lane
Existing
Existing / inactive
Planned
Coverage Analysis
Buffer 1km (Existing)
Buffer 1km (Planned)
Urban Area Boundary
IBGE 2010
City Hall 2015

Source: Souza
Uberlândia: Cycling planning incursion

Existing system = 6 terminals + 2 BRT

Planned system = 9 terminals + 6 BRT

Population density (inhab./km²)
0 1 2 3 4 km

Income distribution (minimum wage)
< ½ ¼ > 3

Source: Souza
Cabo Frio: Districts and centralities

1st District

$\approx \frac{3}{4}$ of total Cabo Frio’s inhabitants
35 km² of urban area
3 centralities with $\approx 4.571.43$ inhab./km²
Cabo Frio: Urban cycling data collected

Counting:
Cabo Frio
Wednesday, 2018

Total = 444.6 per hour

Counting:
Rio de Janeiro (Copacabana)
Wednesday, 2014

Total = 324.5 per hour

Source: Knopp; RioTur
Cabo Frio: Cycling and tourism

- **Seasonality effects**
  - Central area closure for individual motorised vehicles
  - Investment in public and active transportation
- **Intermunicipal cycle tourism routes**
  - Connection with 2nd district and other municipalities
Findings
Thank you!

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