Environmental impact of tourism in Brussels
Environmental impact of tourism
Tourism has an important impact that is often undervalued in official accounts.

Tourism is one of the main sources of GHG emissions:

- **8% of global GHG\(^1\) emissions** (direct and indirect emissions)
- Mainly linked to the use of **transport to (international or not) destinations**
- These emissions are not **taken into account** in regional emissions statistics
- In view of the climate emergency, **rapid action** is therefore essential

It is therefore necessary to understand the situation in order to find realistic solutions:

- Measure the magnitude of current emissions
- Understand the contribution of different actors in Brussels tourism
- Take into account the current situation of actors regarding the economic crisis
- Propose positive actions with a significant impact

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Relevant articles on the subject
Numerous articles were consulted as a source of information and inspiration

Environmental impact of transport to Brussels

Environmental impact of tourism activities in a destination
- **Iceland**: Sharp H., Grundius J. & Heinonen J. (2016) Carbon footprint of inbound tourism to Iceland: A consumption-based life-cycle assessment including direct and indirect emissions, Sustainability, 8, 1147
Emissions due to transport to a destination
Based on calculations by Boussauw and Decroly (2020)

Parameters and methodology

- **Number of arrivals by source country**
  - Sources: FPS data

- **Distribution of modes of transport**
  - Sources: Art Cities study (2018)

- **Distance to Brussels**
  - Population-weighted centroid

- **Emissions per passenger**
  - Peeters et al. 2007

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**Total emissions:**
1,677,000 t. CO₂ eq/year

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**Breakdown by continent**

<table>
<thead>
<tr>
<th>Continent</th>
<th>% overnight stays</th>
<th>% emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>77.7%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Americas</td>
<td>3.6%</td>
<td>38.2%</td>
</tr>
<tr>
<td>Asia</td>
<td>6.9%</td>
<td>26.5%</td>
</tr>
<tr>
<td>Africa</td>
<td>0.9%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Oceania</td>
<td>0.8%</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

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**Top-10 markets**

<table>
<thead>
<tr>
<th>Market</th>
<th>% overnight stays</th>
<th>% emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5.8%</td>
<td>22.5%</td>
</tr>
<tr>
<td>China</td>
<td>2.2%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>1.4%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Australia</td>
<td>0.7%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Spain</td>
<td>5.7%</td>
<td>4.5%</td>
</tr>
<tr>
<td>France</td>
<td>12.1%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.6%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Italy</td>
<td>3.7%</td>
<td>2.6%</td>
</tr>
<tr>
<td>India</td>
<td>0.7%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
Tourism sector emissions in Brussels
Using the parameters calculated by Rico et al. (2019) in Barcelona

**Tourist accommodation**

- 3.9 Kg/night
- 3.9 Kg/night
- 7.5 Kg/night
- 13.1 Kg/night
- 21.9 Kg/night
- 2.9 Kg/night
- 2.9 Kg/night

Total: 89,408 t eq. CO₂/year

**Conferences**

- 5.8 Kg/participant
- 3,202 t eq. CO₂/year

**Restaurants**

- 0.02 Kg/night
- 189 t eq. CO₂/year

**Shopping**

- 1.0 Kg/night
- 9,455 t eq. CO₂/year

**Visits**

- 1.7 Kg/visit
- 8,631 t eq. CO₂/year

**Travel within destination**

- 0.2 Kg/journey
- 0.1 Kg/journey
- 0.29 Kg/journey
- 0.76 Kg/journey

Total: 3,461 t eq. CO₂/year
Total GHG Emissions
Equivalent to half of the direct emissions of the Brussels Capital Region

Breakdown of activities during entire trip

Breakdown of activities at the destination

Total emissions generated by visitors to Brussels
1,791,345 t CO₂ eq

Total direct GES emissions in Brussels
3,703,230 t CO₂ eq (2018)
Conclusions and next steps
A positive approach is possible, with an improved customer experience

Our figures confirm the prevalence of emissions caused by the use of transport to a destination

Key parameters provide guidance for action

- **Number of arrivals**: encourage longer stays to decouple overnight stays from arrivals
- **Choice of transport**: set up partnership schemes to encourage the use of greener transport (train, bicycle, etc.) or compensation
- **Distance from the source country**: environmental factor to be integrated in promotion choices. “Back to Brussels” strategy for neighbouring countries

Levers also exist to influence internal factors at the destination

**examples:**
- **Accommodation**: Labelling of accommodation and promotion of labelled establishments
- **Restaurants**: Highlighting GoodFood restaurants, improving waste management at events
- **Shopping**: Promotion of sustainable businesses and local products

These actions are valued by visitors and can generate a competitive advantage

- Environmentally-friendly practices in hotels have a positive impact on visitor satisfaction and loyalty

**Action plan for concrete sustainability and with private and public partnerships**

Setting up a monitoring scheme in partnership with the sector