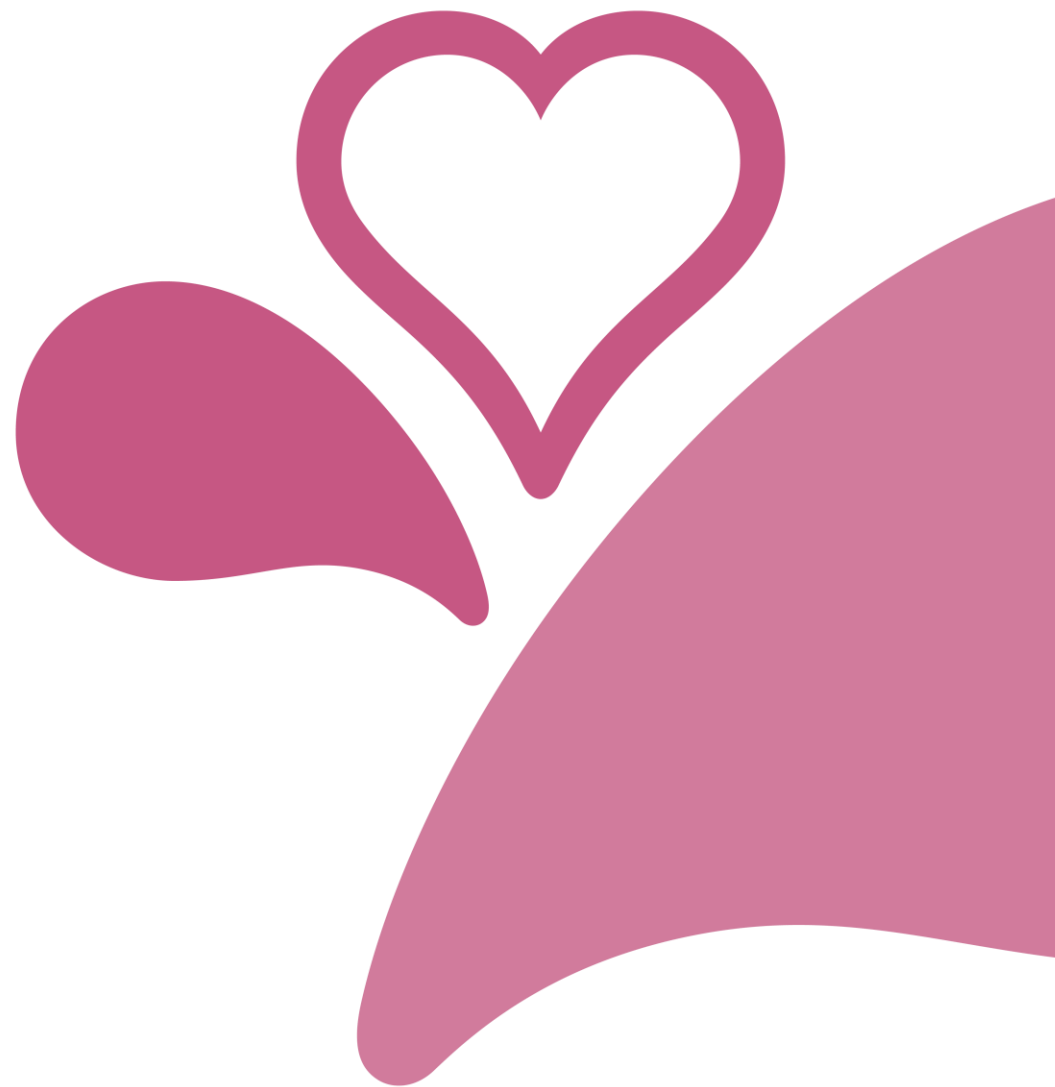


Environmental impact of tourism in Brussels



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 GHG¹ 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

1. Lenzen, M., Sun, Y. Y., Faturay, F., Ting, Y. P., Geschke, A., & Malik, A. (2018). The carbon footprint of global tourism. *Nature Climate Change*, 8(6), 522-528.

Relevant articles on the subject

Numerous articles were consulted as a source of information and inspiration

Environmental impact of **transport** to Brussels

Boussauw K. & Decroly J.-M. (2020). The international climate footprint of a cosmopolitan city: magnitude and trends of Brussels' air travel burden. In S. Vermeulen, A. Mezoued and J-P De Visscher (Eds.), *Towards a Metropolitan City Centre for Brussels*. Brussels: ÉUB & VUBPRESS

Environmental impact of **tourism activities** in a destination

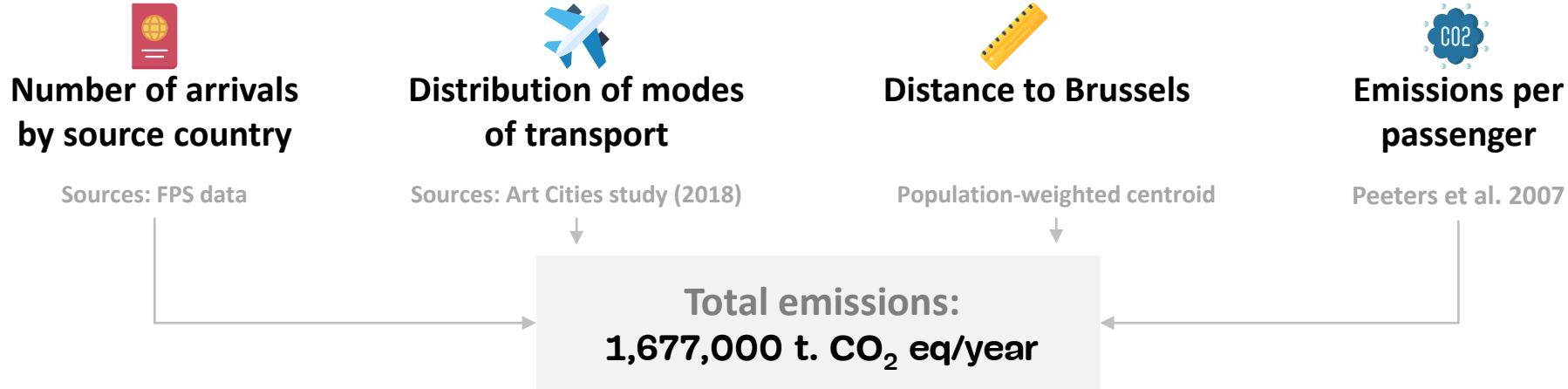
- **Barcelona:** Rico A., Martinez-Blanco J., Montlleo M., Rodriguez G., Tavares N. Arias A., Oliver-Sola J. (2019) Carbon footprint of tourism in Barcelona, *Tourism Management* 70: 491-504
- **Australia:** Dwyer L., Forsyth R., Spurr R. & Hoque S. (2010) Estimating the carbon footprint of Australian tourism, *Journal of Sustainable Tourism*, 18:3, 355-376
- **Switzerland:** Perch-Nielsen S., Petrus A., Stuck M. (2010), The greenhouse gas intensity of the tourism sector: The case of Switzerland, *Environmental Science & Policy* 13(2):131-140
- **New Zealand:** Becken S. & Simmons D. (2001) Understanding energy consumption patterns of tourist attractions and activities in New Zealand, *Tourism Management* 23, 343-354
- **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
- **Brazil:** Pereira, R. P. T., Ribeiro, G. M. & Filimonau, V. (2017) The carbon footprint appraisal of local visitor travel in Brazil: a case of the Rio de Janeiro-São Paulo itinerary. *J. Clean. Prod.* 141, 256-266
- **Naples:** Pagliara, F., Biggiero, L., & Henke, I. (2019). The Environmental Impacts Connected with Travelling to events: The Case Study of the City of Naples in Italy. In 2019 IEEE International Conference on Environment and Electrical Engineering, 1-6.
- **Beijing:** Yu, L., Bai, Y., & Liu, J. (2019). The dynamics of tourism's carbon footprint in Beijing, China. *Journal of Sustainable Tourism*, 27(10), 1553-1571.



Emissions due to transport to a destination

Based on calculations by Boussauw and Decroly (2020)

Parameters and methodology



Breakdown by continent

	% overnight stays	% emissions
Europe	77.7%	26.3%
Americas	3.6%	38.2%
Asia	6.9%	26.5%
Africa	0.9%	2.9%
Oceania	0.8%	6.0%

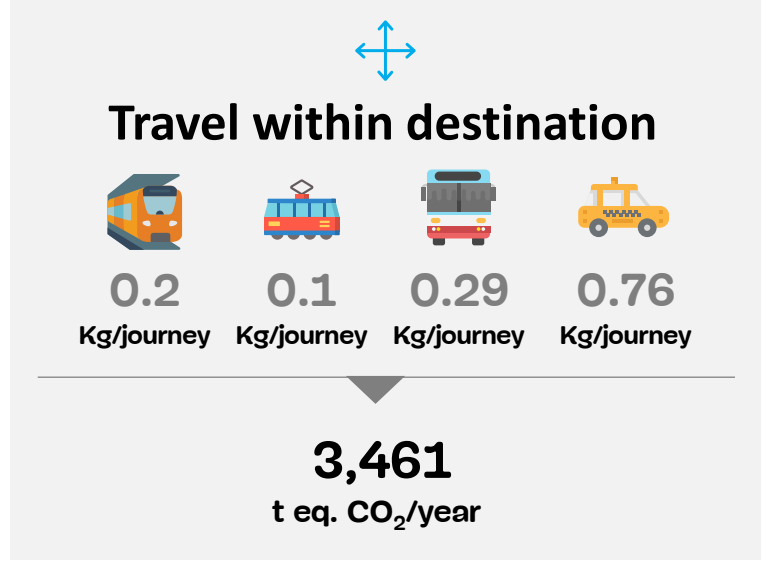
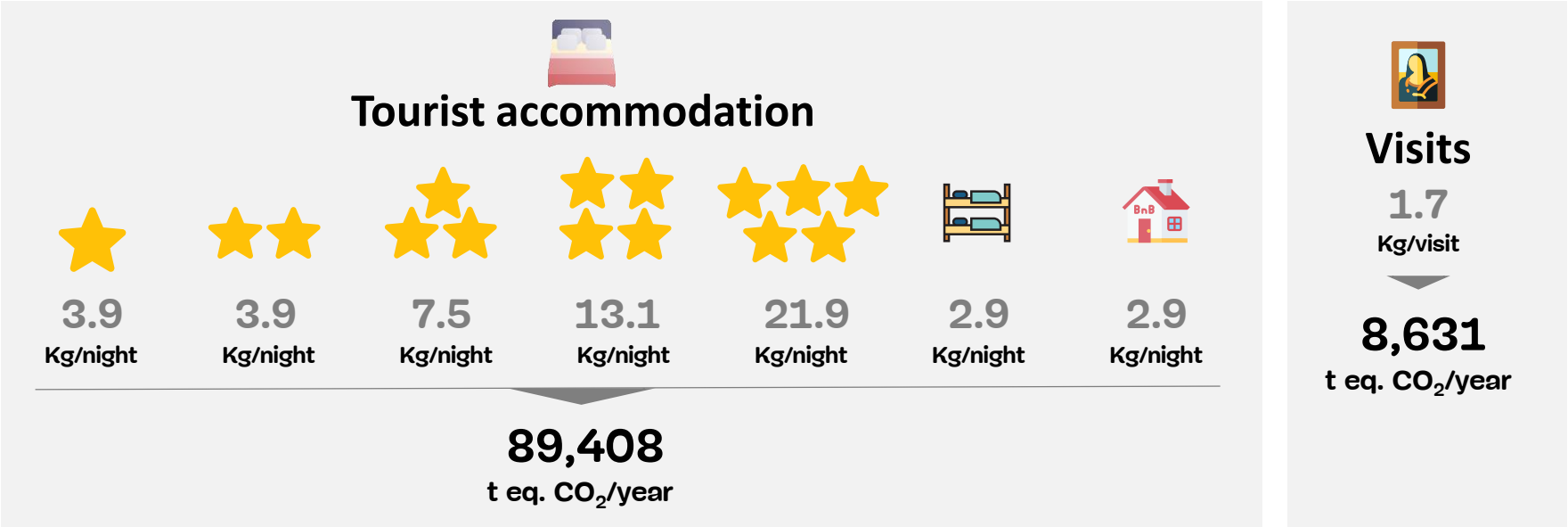
Top-10 markets

	% overnight stays	% emissions
1 USA	5.8%	22.5%
2 China	2.2%	8.9%
3 Japan	1.4%	6.7%
4 Brazil	1.2%	5.3%
4 Australia	0.7%	5.1%
6 Spain	5.7%	4.5%
7 France	12.1%	3.8%
8 Mexico	0.6%	2.6%
9 Italy	3.7%	2.6%
10 India	0.7%	2.5%



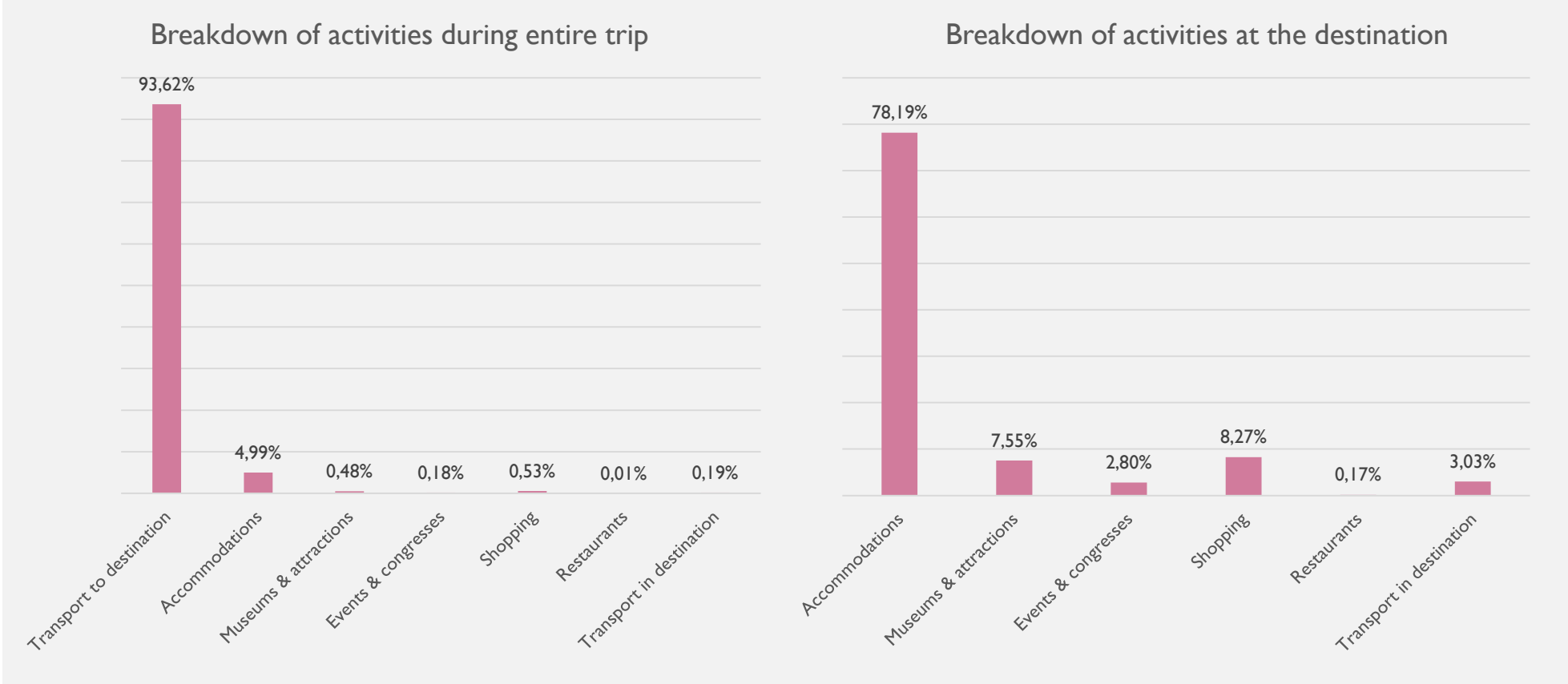
Tourism sector emissions in Brussels

Using the parameters calculated by Rico et al. (2019) in Barcelona



Total GHG Emissions

Equivalent to half of the direct emissions of the Brussels Capital Region



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 loyalty¹

Action plan for concrete sustainability and with private and public partnerships

Setting up a monitoring scheme in partnership with the sector



1. Merli, R., Preziosi, M., Acampora, A., & Ali, F. (2019). Why should hotels go green? Insights from guests experience in green hotels. *International Journal of Hospitality Management*, 81, 169-179.