



Hochschule
für nachhaltige Entwicklung
Eberswalde



Mit der Natur für den Menschen – seit mehr als 185 Jahren.

Sustainability and the Nature-based Tourism Industry

Prof. Dr. Wolfgang Strasdas
“Nature-based Tourism & Protected
Area Management“ module
May 30, 2023





Structure of the lecture

- 1. Accommodation**
- 2. Specialised tour operators**
- 3. Outdoor manufacturers & retail**



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Tents and cabins



- **Selective siting**
- **Environmental management system**
- **Energy supply (incl. transport)**
- **Water management**
- **Waste management (Reduce!)**
- **Sustainable food**



Tents and cabins



Source: Lonely Planer; photo: Meiqianbao/Shutterstock

- **Non-toxic, recyclable materials**
- **Appropriate sites:**
 - Durable surfaces
 - No vegetation vulnerable to trampling
 - Not too close to water





“Leave no trace“ principles



Plan Ahead & Prepare



Travel & Camp on Durable
Surfaces



Dispose of Waste Properly



Leave What You Find



Minimize Campfire
Impacts



Respect Wildlife



Source: <https://Int.org/why/7-principles/>

What is a lodge?

- Originally from hunting tourism
- A rustic, but comfortable, often luxurious accommodation
- Located in natural, often remote areas (challenge of access)
- Use of natural construction materials or safari tents
- Level/quality of services similar to hotels
- Natural ambiance and experience of nature
- Limited number of beds (exclusiveness)





Traditional village style: Namibia Wildlife Resorts





Lapa Rios luxury lodge, Costa Rica





Lapa Rios luxury lodge, Costa Rica



Modern design: Fish River Canyon Lodge, Namibia



Tented safari camp, Tanzania





Interior: Moderate price range





Bush camp, Tanzania





Nature-based accommodation in Germany



Source: <https://www.destinature.de/destinature-wellness/>



Nature-based accommodation in Germany





Traditional accommodation, Mongolia





The issue of basic hygiene





The issue of basic hygiene



What is an eco-lodge?

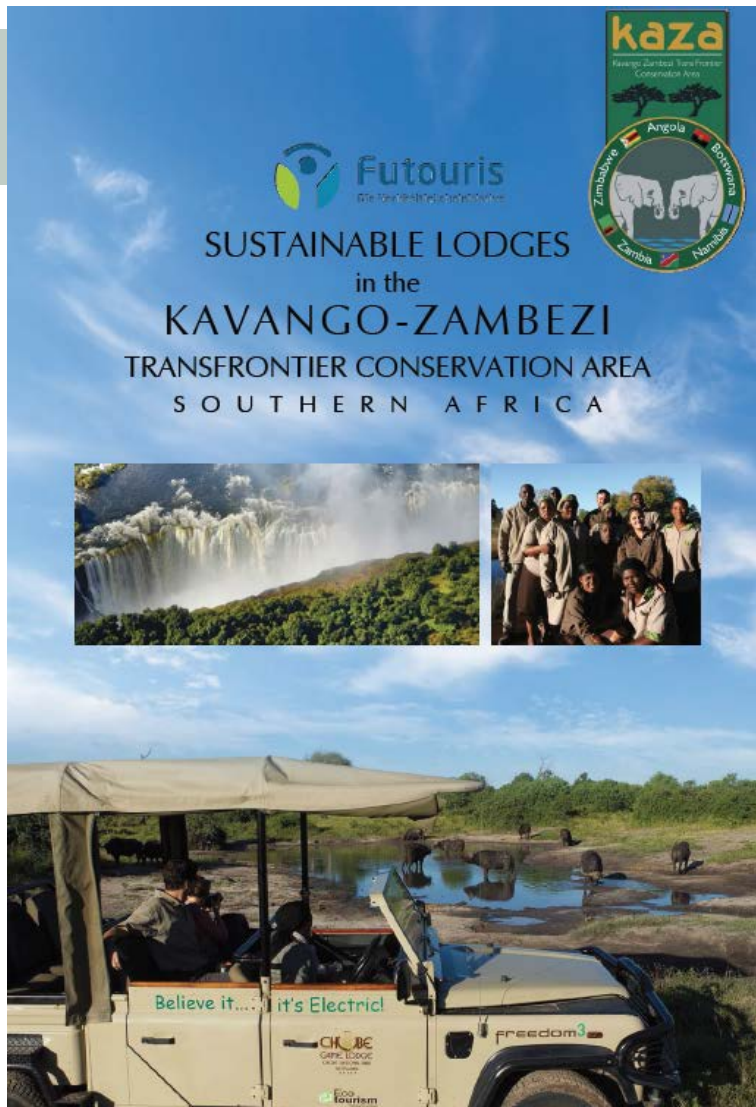
- **Selecting an environmentally suitable site** (zoning, EIA)
- **Use of environmental technologies** (renewable energies, compost toilets, reed bed sewage treatment)
- **Environmental management** (reducing resource consumption, waste management, guest information)
- **Adapted architecture** (landscape/region; local, non-endangered building materials)
- **Adapted landscaping** (native plants) or intact natural site
- **Participation of local communities** (participatory planning, local staff and procurement, joint ventures)

Source: International Ecodge Guidelines, TIES 2002

Relevant GSTC criteria for hotels/TOs



- A7.1 – Compliance with zoning requirements
- A7.2 – Capacity of the natural & cultural surroundings
- A7.3 – Locally appropriate & sustainable practices & materials
- A 8 – Observe land, water and property rights
- A 9 – Provide information & interpretation on natural/cultural surroundings
- D3.1 – Contribute to biodiversity conservation
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- D3.6 – Wildlife harvesting prohibited or strictly regulated



- Strong commitment to **biodiversity conservation**
- **Natural resource conservation** less pronounced
- **“Social license to operate”**
- **Local benefits limited**

Renewable energies





Diversity management: Female safari guides



Economic aspects of eco-lodges

- often owner-operated; very few chains
- Time-consuming planning process
- rel. low construction costs (low building materials)
- High investment costs for environmental technologies and appliances
- High transportation costs (guests, food, fuel & other supplies)
- Control over surrounding land-use needed
- High marketing/overhead costs per bed/room
- Seasonality
- Local staff training costs (*but*: lower associated costs)

on the other hand:

High prices for exclusive experience of nature !

Source: The Business of Ecolodges: A Survey of Ecolodge Economics and Finance, TIES 2001



Certification schemes for nature-based accommodation





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- 1. Accommodation**
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- 3. Outdoor manufacturers & retail**



Overview



ADVENTURE TRAVEL
TRADE ASSOCIATION

Es geht um die Welt.

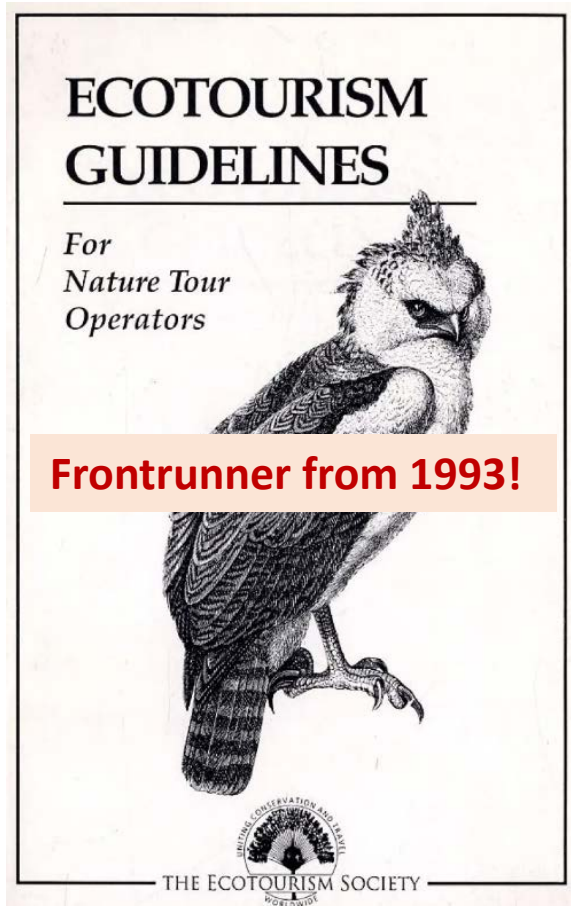


CANAECO
Cámara Nacional de Ecoturismo
y Turismo Sostenible de Costa Rica





Certification schemes for tour operators



The 6 principles of Nature's Best, Sweden

- 1. Respect limitations of the destination**
(minimise environmental and cultural impact)
- 2. Support the local economy**
- 3. Environmental management of company**
- 4. Contribute actively to conservation**
- 5. Promote the “joy of discovery“, knowledge and respect**
- 6. Quality management incl. safety**



GSTC criteria for TOs (transport)



1. Where practical and feasible, the cleanest and most resource efficient transport options are used in the provision of tour programmes and excursions.
2. Information is provided and promoted to customers on alternative (climate friendly) transport options, where available.
3. Alternative transport options (e.g. bike rental, car sharing, pick-ups) for guests and staff are provided or facilitated.
4. Markets accessible by short and more sustainable transport options are favoured.
5. Local suppliers are favoured and daily operations seek to minimize transport use.

Case study: CSR among adventure TOs (ATTA, outbound)

- 1. The “Unconcerned” (32%):** no CSR commitment at all or some rudimentary statements without any substantiation ⇒ **CSR 0.0 at best**
- 2. The “Philanthropists” (22%, mostly North American):** more involved in charity projects (often to a large extent) than practicing CSR in core business ⇒ **CSR 1.0**
- 3. The “Somehow Committed” (36%):** practice CSR to various degrees (often in combination with philanthropy), but without a clear strategy behind it or without extensive communication (many expedition cruise companies ⇒ **between CSR 1.0 and CSR 2.0.**
- 4. The “Strategists” (11%):** are certified and communicate their own CSR activities extensively (including philanthropy). They use different CSR management tools, for instance carbon accounting, a sustainability code for their suppliers or a code of conduct for travelers. ⇒ **CSR 2.0 or even CSR 3.0**

Source: Strasdas 2019; data from 2018; N = 76

ATTA case study: Sustainability dimensions covered

- **Contribute to local development** (economically, philanthropy)
- **Waste management, “Leave no Trace“**
- **Biodiversity conservation & animal welfare**
- Climate protection (mostly through carbon offsetting & tree planting)
- Minimizing resource use (energy, water)
- Fair treatment of local staff (e.g. porters)
- Cultural sensitivity towards host population

What is missing or rarely mentioned

- Sustainable transport
- Human rights due diligence

Source: Strasdas 2019; data from 2018; ranked by importance; N = 76

Sustainable transport: The forgotten dimension of ecotourism





Case study: Carbon footprint of safari tourism in Namibia



Research methodology

- **Select 3 inbound tour operators** (up-market – mainstream – trekking)
- Select **representative tours** of each TO
- **Product carbon footprint**: calculate emissions per person (per trip/per day) from source country to destination
- **Scopes 1 and 2**
- **Flight emissions**: all GHG (CO₂-e) → atmosfair calculator
- **Fuel/electricity data** as well as **tourism-related data** (distances covered, type of vehicle, occupancy) from TOs
- **Fuel conversion factors** from local study
- **Estimated (default) values** for most **accommodation** according to category and use of renewable energies (estimated Scope 3 emissions)

Source: Strasdas 2012





Selected tours

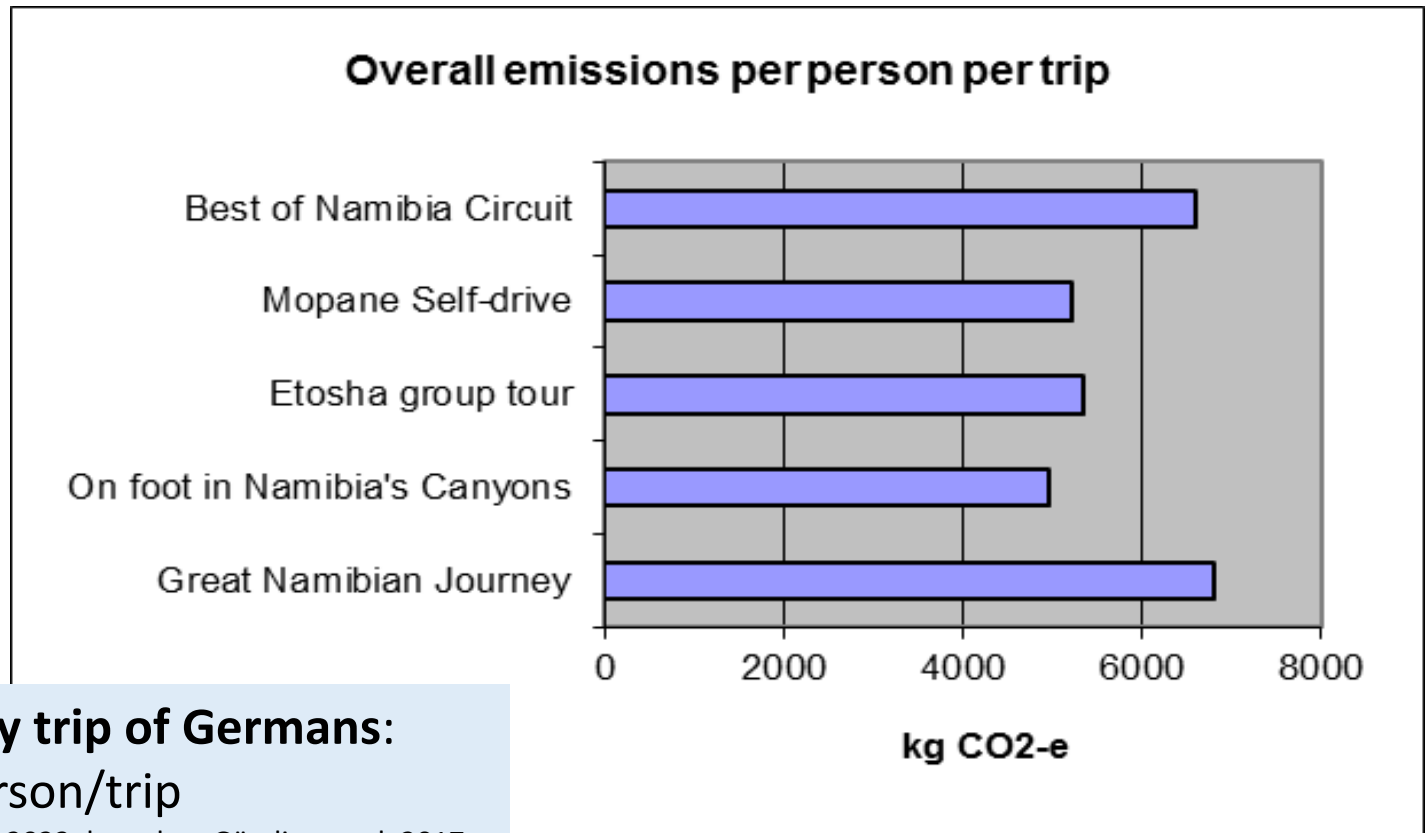
- 1. “Great Namibian Journey”:**
Upscale – small group – 2,700 km covered by road/air – 16 days
- 2. “Best of Namibia Circuit”:**
Luxury – customized – 1,750 km covered (fly-in safari) – 10 days
- 3. “Etosha” group tour:**
Mainstream – medium-sized group – 5,000 km covered by bus – 20 days
- 4. “Mopane” self-drive tour:**
Mainstream – customized – 3,170 km covered by ATV/4x4 – 15 days
- 5. “On Foot in Namibia’s Canyons, Deserts and Mountains”:**
Trekking tour – medium-sized group – 2,780 km covered by AT van – 20 days







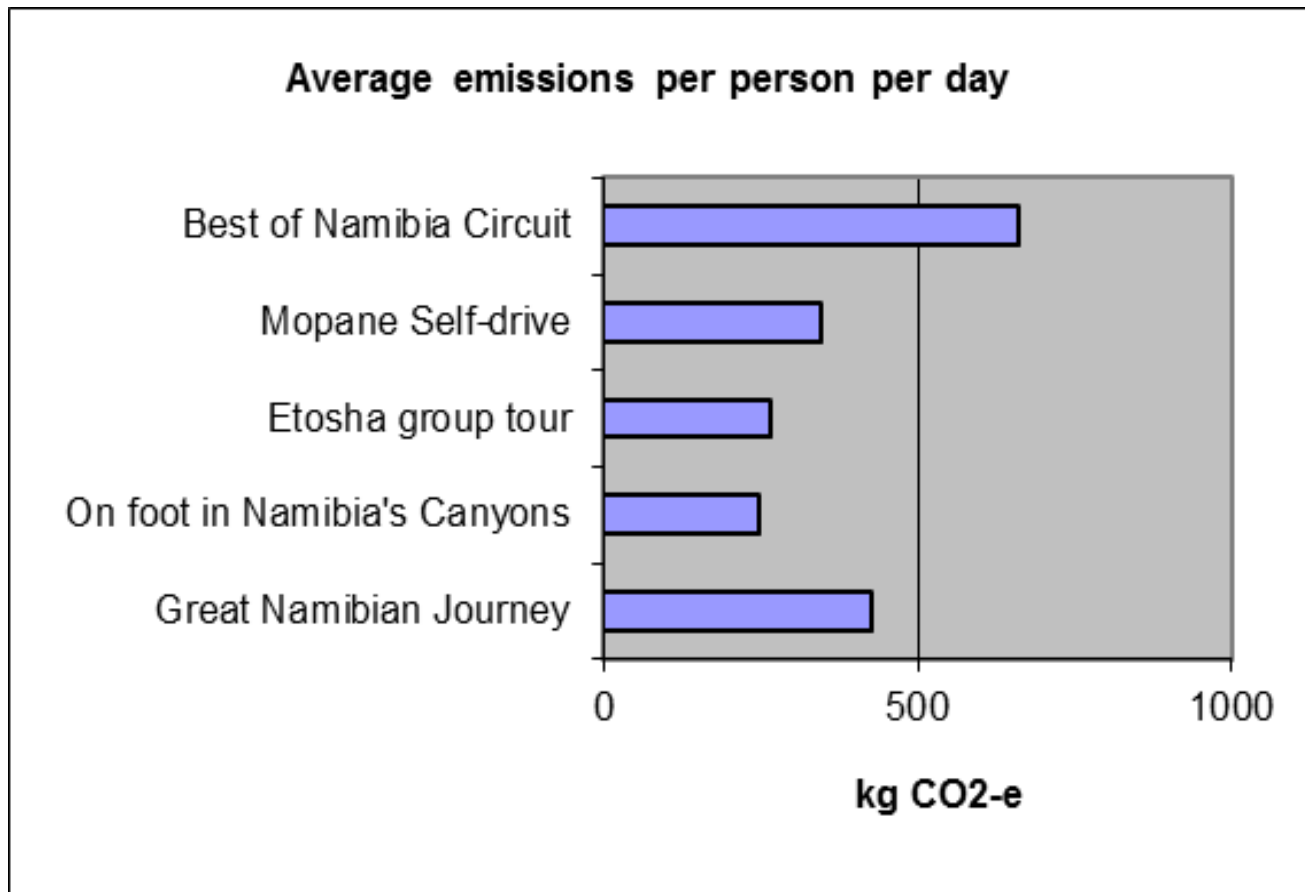
Research results



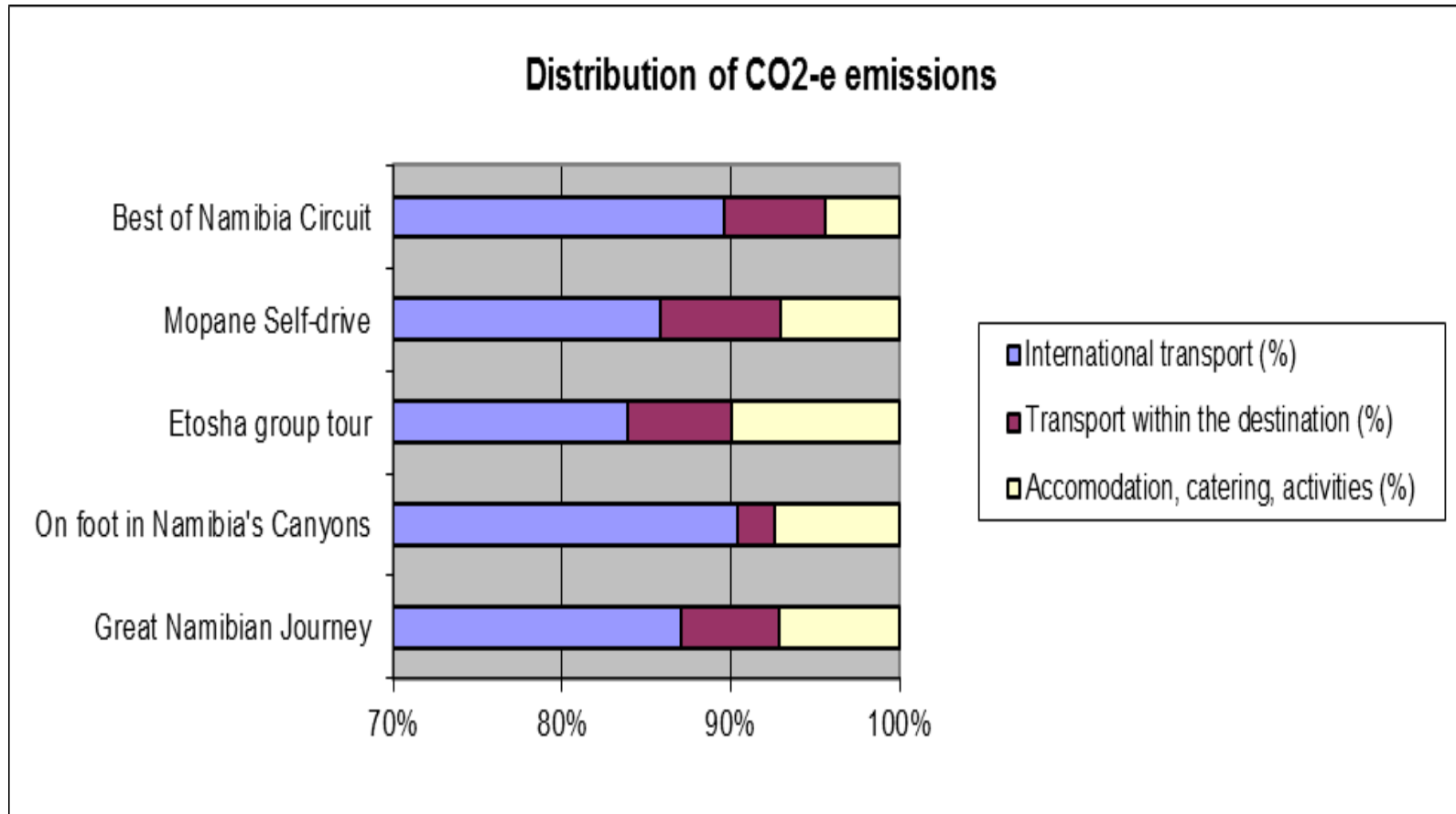
Average holiday trip of Germans:
ca. 0.8 tons/person/trip

(Lund-Durlacher/Strasdas 2023, based on Gössling et al. 2017)

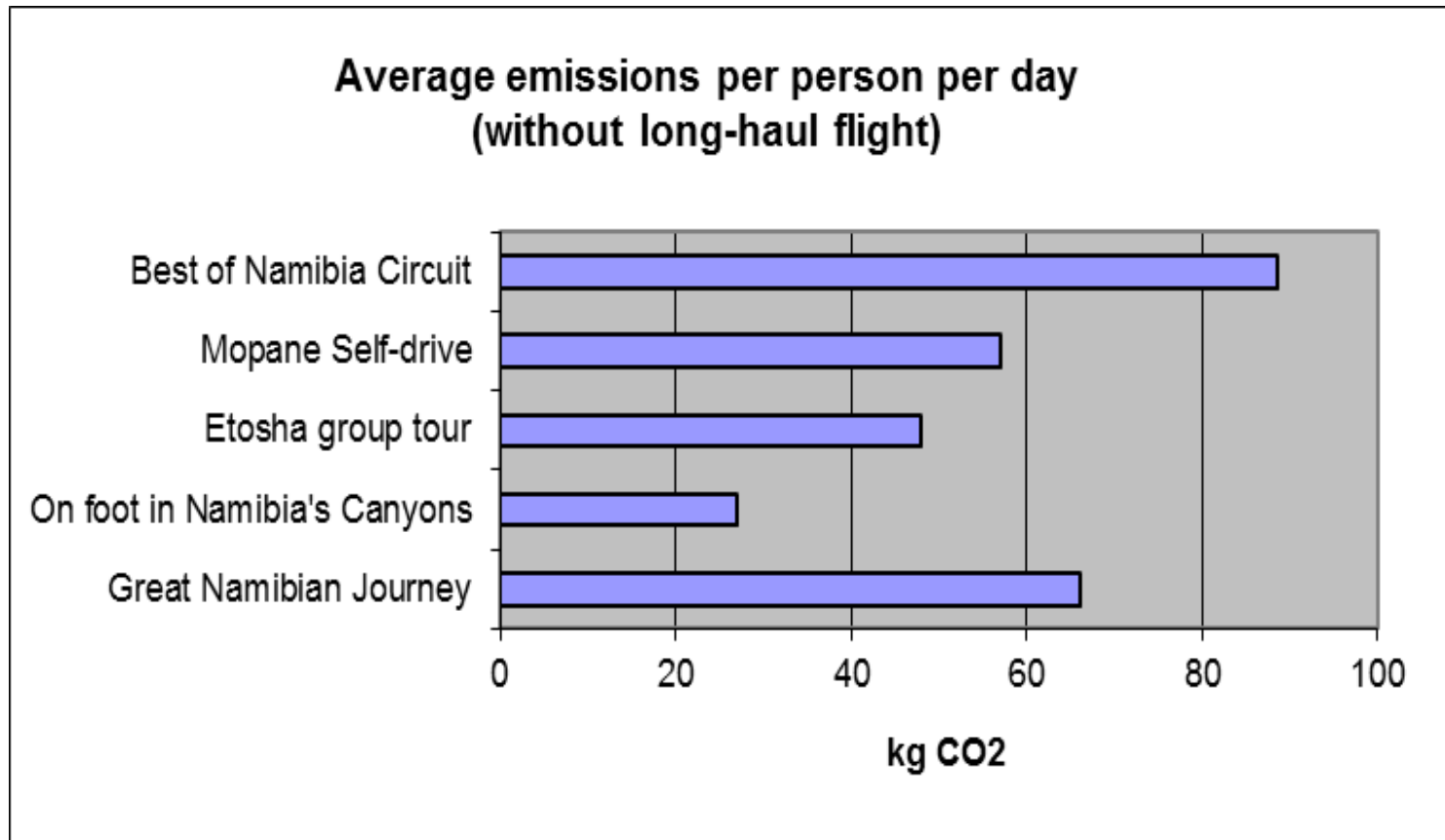
Research results



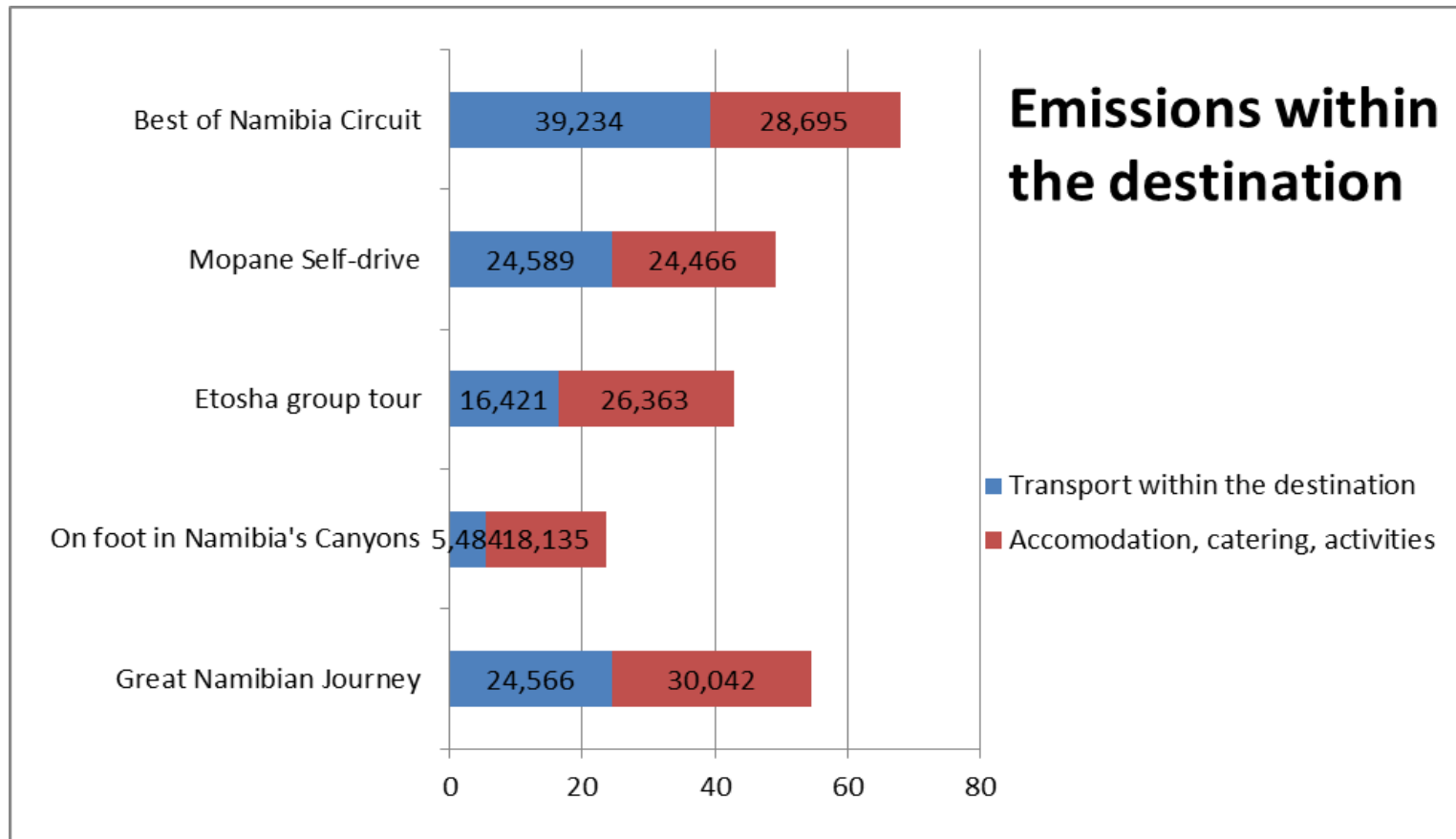
Research results



Research results



Research results





Research results: Eco-efficiency

Tourism offer	CO ₂ -e emissions in kg ÷ Package price in € (with long-haul flight)	CO ₂ emissions in kg ÷ Package price in € (in-country only)
Great Namibian Journey	0.97	0.17
On Foot in Namibia's Canyons	1.25	0.20
Best of Namibia Circuit	1.34	0.20
Etosha group tour	1.33	0.32
Mopane self-drive	1.96	0.44



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REI store in Seattle





Economic significance of the OR industry



Outdoor Industry Association: OR equipment manufacturers and retailers in the USA

OR industry includes:

- Boating & fisheries
- Recreational vehicles
- Hunting & shooting
- Snow sports
- Climbing, hiking, camping
- Running
- cycling
- Gardening

Economic significance of the OR industry

The **2022 Outdoor Recreation Economy report** measures the economic impacts of outdoor recreation in the United States in 2021. Outdoor recreation accounted for **\$862 billion in gross output** (total spending), **4.5 million jobs**, and **1.9% of the total GDP**. Outdoor recreation gross output **grew 21.7% in 2021**. ...

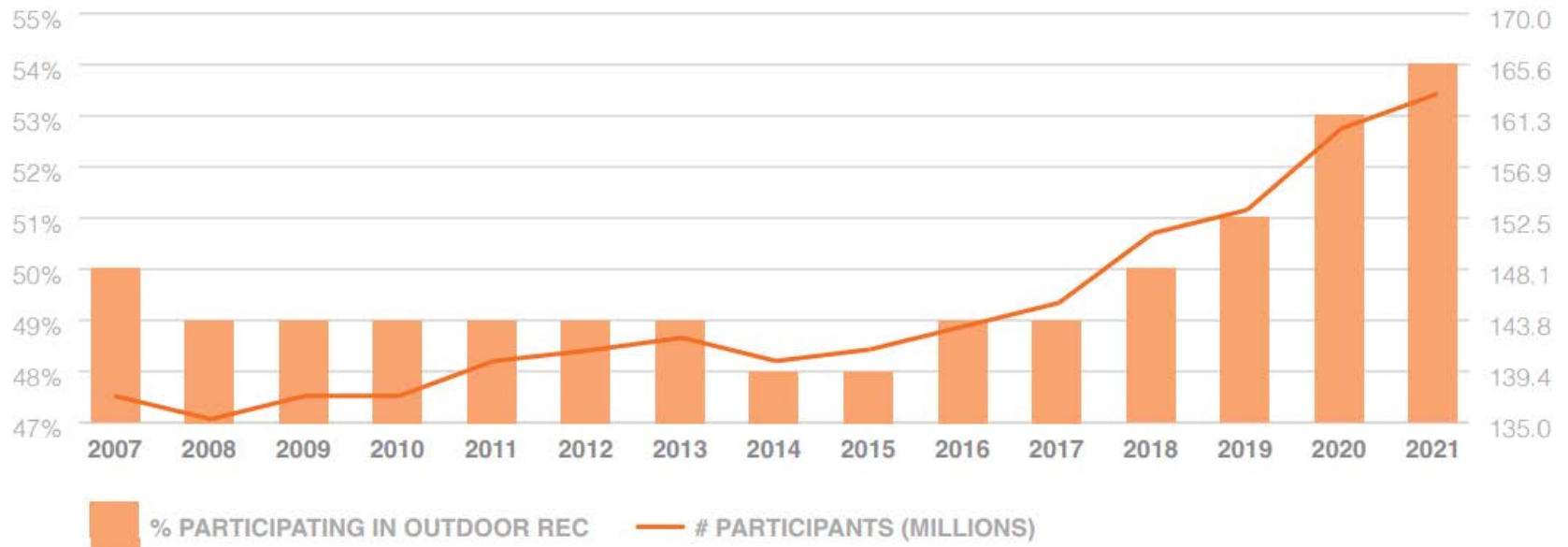
... (This) puts the outdoor industry on **even footing** with well-recognized industries including **mining** and **utilities**.

Germany: Bundesverband der Deutschen Sportartikel-industrie (apparel, shoes, equipment, bicycles): ca. **EUR 35 billion turnover annually**. (Source: BMU-Beirat Umwelt und Sport, Dec. 2021)

Economic significance of the OR industry (USA)

OUTDOOR PARTICIPATION GROWTH TRENDS

2007 TO 2021



Source: Outdoor Foundation 2022



Environmental impacts and sustainability





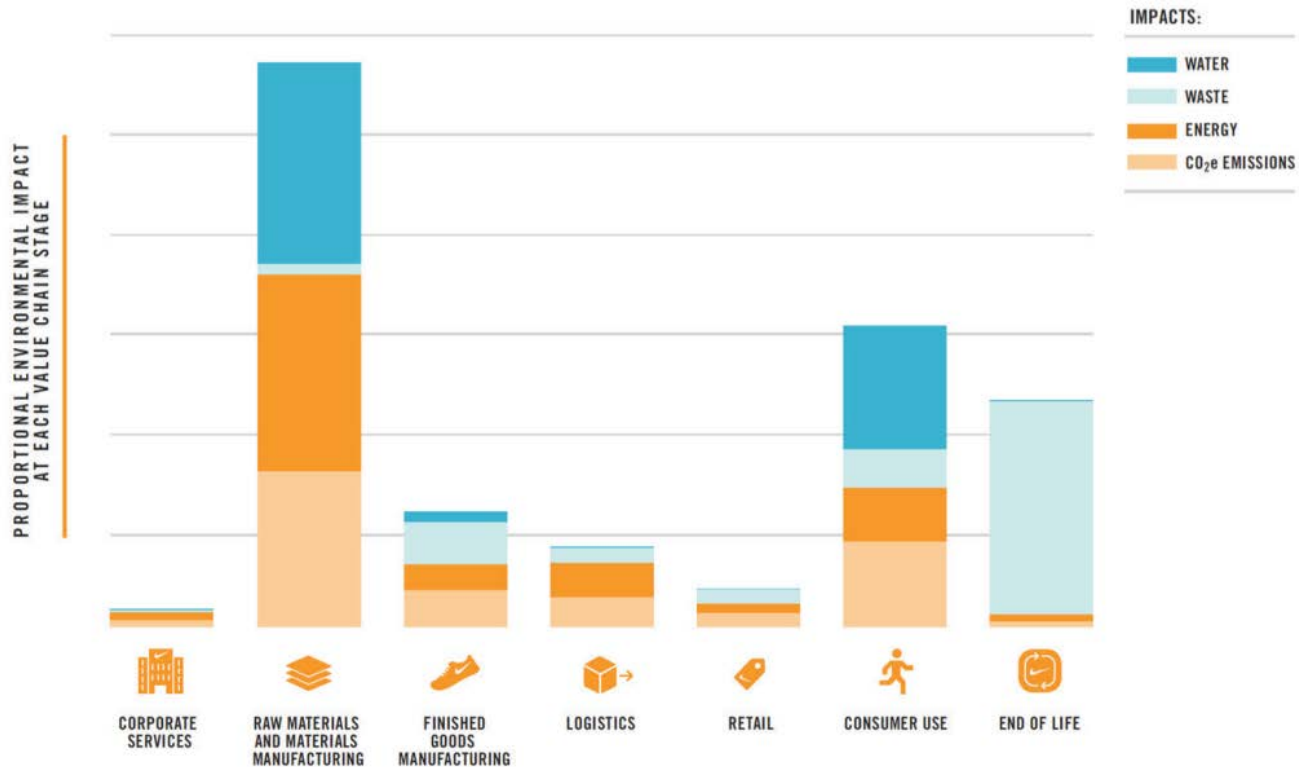
High-risk chemicals found in outdoor equipment

Chemical substances/classes	May be found in these types of materials
Alkylphenol (AP)	Natural Fibers, Synthetic Fibers, Leather, Synthetic Leather, Screenprint, Inks, Heat Transfers, Adhesives
Alkylphenol Ethoxoylates (APEO)	Natural Fibers, Synthetic Fibers, Lewather, Synthetic Leather, Screenprint, Inks, Heat Transfers, Adhesives
Antimicrobials*	Anti-odor Materials: Natural Fibers, Synthetic Fibers, Plastics, Leather, Synthetic Leather, Screenprint, Inks, Heat Transfers
Azo Dyes (Restricted ones)	Natural Fibers, Synthetic Fibers, Leather, Screenprint, Inks, Heat Transfers
Biocides	Anti-Odor Fabrics
Bisphenol A (BPA)*	Beverage and Food Containers (Water bottles, etc.)
Chrome VI	Leather
Dimethyl Formamide (DMF)	Synthetic Leather
Disperse Dyes	Synthetic Fibers, Leather
Flame Retardants*	Natural Fibers, Synthetic Fibers, Leather, Synthetic Leather, Plastics
Formaldehyde	Natural Fibers, Synthetic Fibers, Plastics, Leather, Synthetic Leather, Screenprint, Inks, Heat Transfers, Adhesives
Heavy Metals (Cadmium, Lead, Mercury, Silver) *	Natural Fibers, Synthetic Fibers, Plastics, Leather, Synthetic Leather, Inks, Anti-Odor Fabrics, Screenprint, Inks, Heat Transfers
Nickel	Metal Items
Organotin	Plastics, Rubber, Leather, Synthetic Leather, Screenprint, Inks, Heat Transfers

Source: OIA 2017

Life cycle environmental impacts of Nike apparel

Graph 1: Nike FY15, Value Chain Footprint Impacts⁵



NOTE: Corporate Services includes all headquarter facilities and corporate travel. Logistics includes transportation and distribution centers.

Source: OIA 2017

Recommendations for sustainable materials

Manufacturers

- CSR reporting; assume responsibility for entire **supply chain**
- No dangerous **chemicals** or **microplastics** (production process, final product)
- Preference for **organic, renewable** raw materials
- **Circular economy**: Redemption, recycling
- No **obsolescence** (durability) or **overproduction**

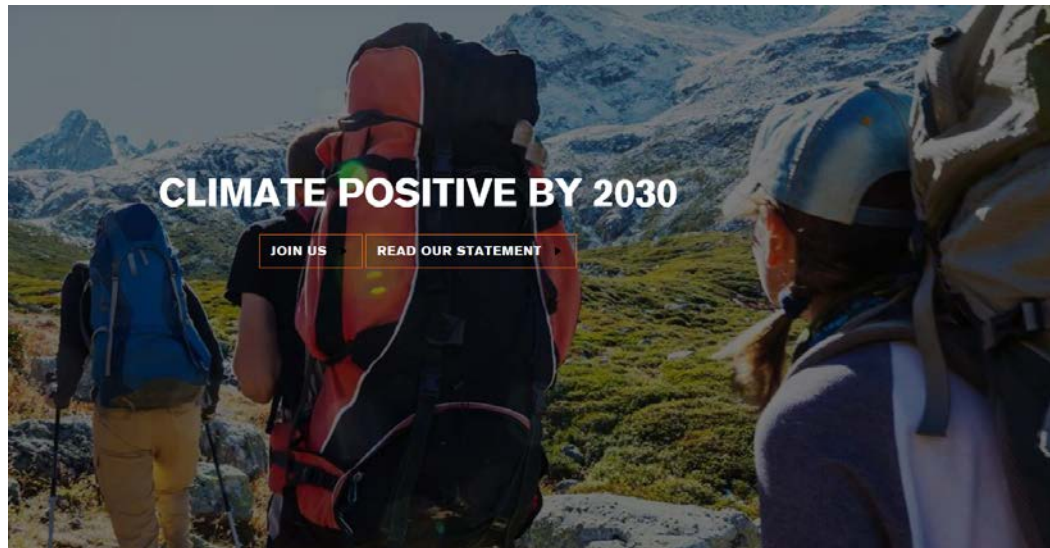
Retail

- Sustainable **purchase** criteria
- **Sharing/rental** business models
- **Repair services**
- **Customer information** (sustainability labels i.a.)

Source: BMU-Beirat Umwelt und Sport, Dec. 2021



OIA Pledges



“Climate positive means to reduce your greenhouse gas emissions in line with a **science-based target** (SBT) that addresses **all scopes**, to **remove** even more GHG from the atmosphere than you emit, and to **advocate** for broader systemic change.”

Group work

Form groups of 2 or 3 students and conduct a quick assessment of how the following tour operators make sure (or not) that they **do not negatively affect the biodiversity** of the natural (protected) areas they visit, or even **actively contribute to their conservation**.

- Hauser Exkursionen (DE, outbound, worldwide, hiking/trekking)
- Rucksack-Reisen (DE, outbound, Scandinavia & worldwide, outdoor)
- Intrepid Travel (AUS, outbound, worldwide)
- Lindblad Expeditions (USA, outbound, cruise expeditions)
- Wilderness Safaris (inbound, Southern Africa)
- Horizontes Nature Tours (inbound, Costa Rica)

Please prepare a short informal presentation of 5-10 minutes.

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