



▶ Tourism Environmental Footprint in Sweden

Global Forum on Tourism Statistics 2018

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Contents

▀ Introduction

- Linking Tourism and Environmental Accounts

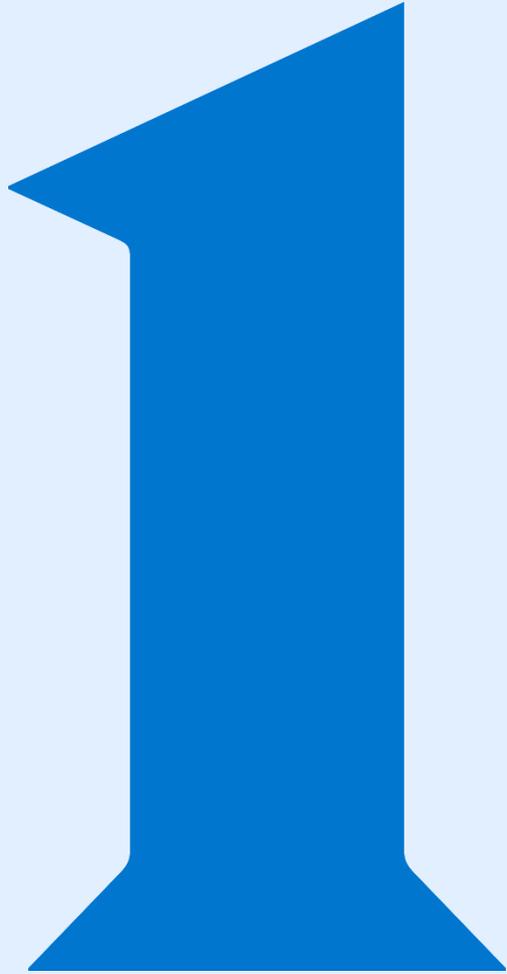
▀ Methodology

- Use of Input-Output Analysis

▀ Results

- Tables on tourism CO2 emissions

▀ Conclusions



▶ **Introduction**

Linking Tourism and
Environmental Accounts



Tourism and the environment

Why and for whom

- ▶ Important to increase knowledge of tourism environmental effects, and to find right policy measures to support increased sustainable tourism
- ▶ A big advantage of linking TSA-SEEA is that it is based on already existing frameworks and on existing data sources
- ▶ This study measures environmental impact in terms of greenhouse gas emissions



► **Methodology**

Use of Input-Output Analysis

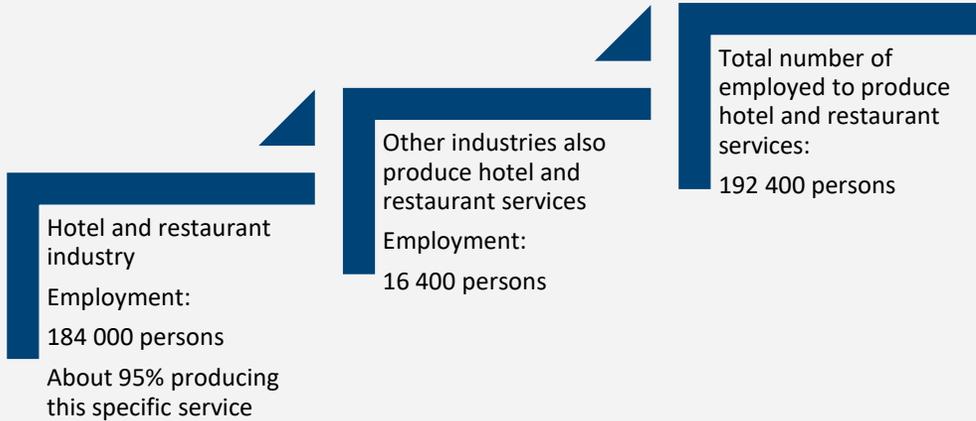


Input-Output Analysis

Development of a new method

- So far - the primary focus, has been on direct effects of tourism on the economy
- This study uses the TSA-SEEA linking possibilities but is built on a more sophisticated method by using input-output analysis
- Based on the National Accounts' symmetrical input-output tables, which in turn, is based on yearly supply and use tables
- A product's final use, but all stages of production prior to consumption are included (the value chain). The intermediates need intermediates that also need intermediates, etc
- The idea can be compared to a life-cycle analysis, where you can follow the environmental impact of a particular product, from the extraction of materials to waste treatment

Production side (example): Employed persons in hotel and restaurant services with use of Input-Output Analysis



Final use side (example): Employed persons in hotel and restaurant services with use of Input-Output Analysis



Production and Final use

E.g. Hotel and Restaurant

- H&R sector employs 184 000 by using IOA. Of the sector 95% of the activities were H&R jobs, and 5 percent services for other sectors
- On the other hand, other sectors also produced H&R services. Total 192 400 employed to produce H&R services
- Among the employees 2/3 produced for final use – 157 000 employees
- Of the H&R employees for final use, 77% are employed in the H&R sector, and 23% employed to produce intermediate goods for H&R

Example: Food industry

Tourism employment

Industries \ Products	Food	Other products	Fuel	Hotels/Camping/Restaurant services
Food	3 126	5		
Other products	152	1 943	12	
Fuel	1	1		
Hotels/Camping/Restaurant services	101	55	6	
Second home	87	47	5	
Road/Rail transport	178	87		
Maritime traffic	4	2	2	
Air transportation	1	1	0	
Car rental	22	16	1	
Package trips, etc	1	1	0	25
Film, Culture	31	20		
Trade fairs	176	119	15	2 44
Passport/Visa	58	28	8	
Photo/Washing/Hairdresser	56	36		
Boating	53	35	8	
Other	2 472	1 032	183	9 5
Trade	333	200		
Total	6 850	3 629	374	36

- 3 126 Tourism employees in Food industry working in the production of Food...
- ...but, total tourism jobs in Food are 6 850, i.e. more than half of the tourism jobs in Food industry is doing other tourism production activities than food production
- In the same way, food production activities is performed in industries, other than the Food industry, e.g. restaurants
- This matrix is constructed to visualize the tourism value chain and complexity in tourism production



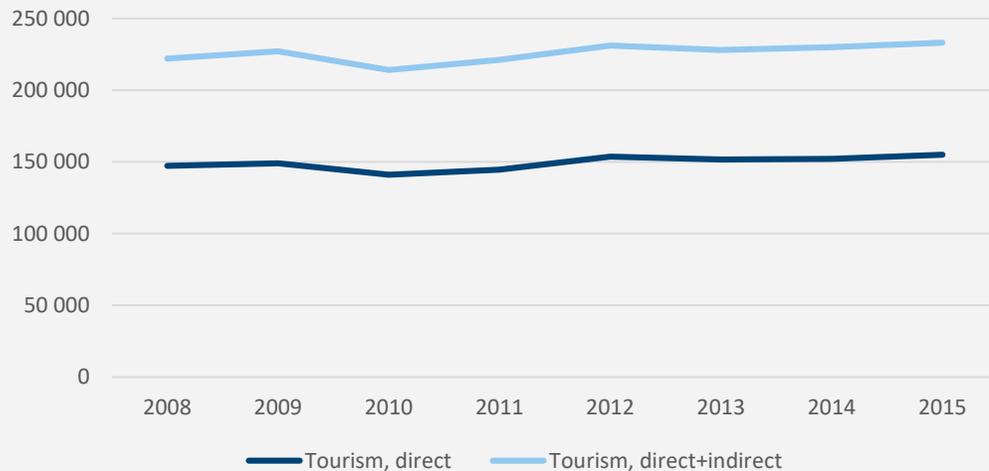
▸ Results

Tables on tourism CO₂
emissions

Indirect tourism

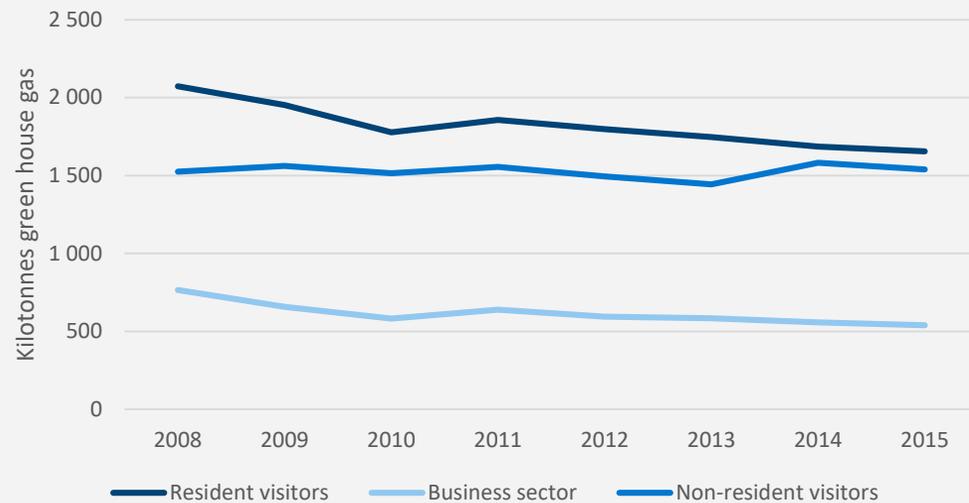
By using input-output analysis

Tourism employment In Sweden

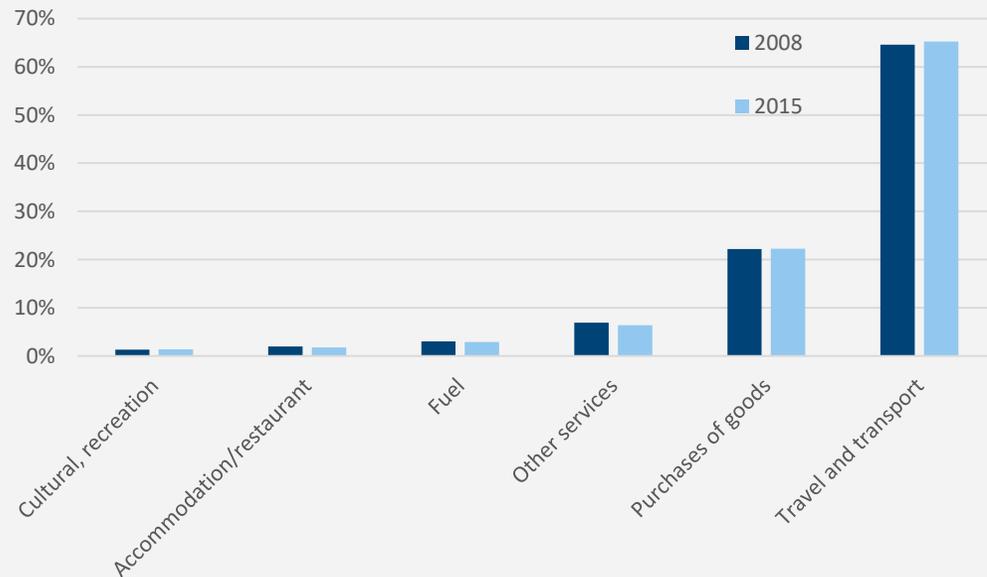


- ▶ The indirect effects adding about 50 percent extra employment to the tourism sector
- ▶ The tourism multiplier is higher for tourism employment compared to the multiplier for tourism value added
- ▶ The Swedish tourism to GDP ratio (direct) will increase from 2.7 to 3.7 if including indirect tourism effects

Greenhouse gas emissions in tourism consumption



Greenhouse gas emissions in indirect tourism consumption



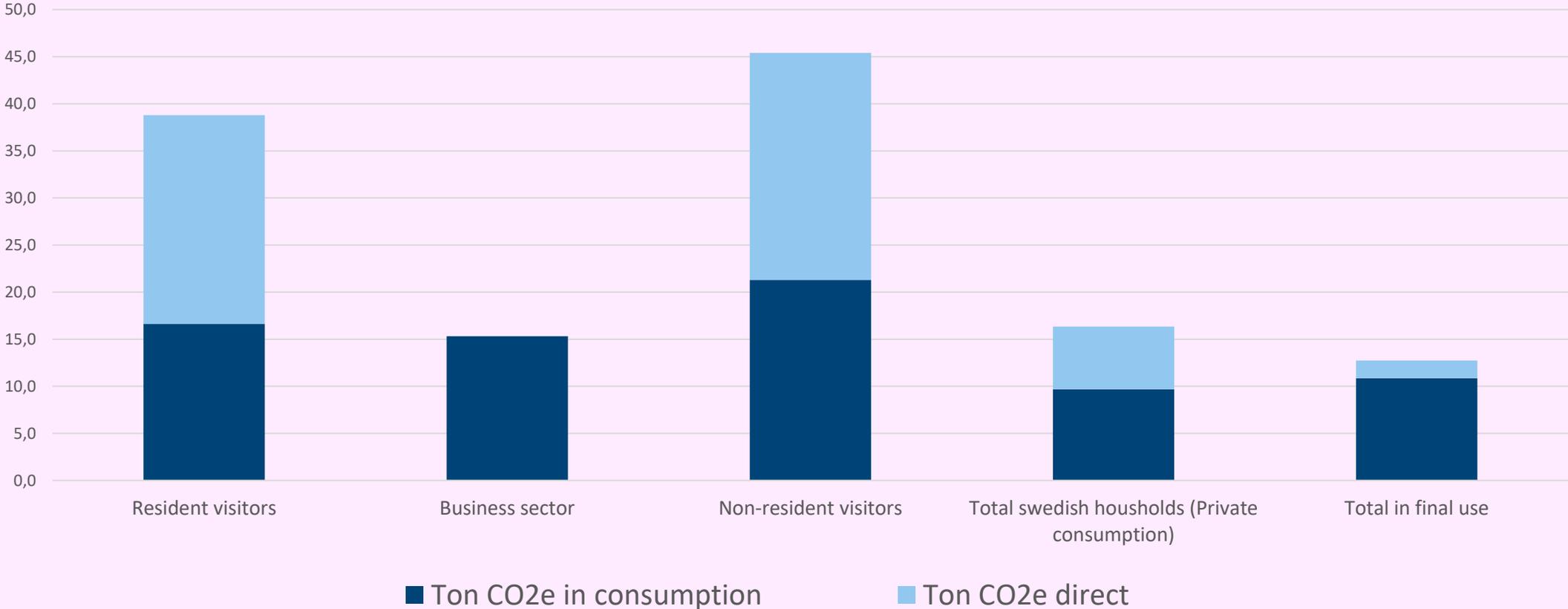
TSA-SEEA Results

Greenhouse gas emission have decreased

- ▶ Greenhouse gas emissions from tourism consumption have decreased over time (by 14% 2008–2015)
- ▶ Emissions by international visitors remain largely at the same level, due to increased international tourism
- ▶ Travel and transport is the primary contributor to CO₂ emissions. About two thirds of the emissions comes from travel and transport

Greenhouse gas emissions in tourism

Ton CO2 per million SEK tourism expenditure 2015



4

► **Conclusions**



Conclusions

- Indirect effects on tourism, by using input-output analysis, increasing the tourism sector in Sweden by 50 percent in terms of tourism employment
- Greenhouse gas emissions due to tourism have decreased in Sweden over the period 2008–2015
- This study shows that travel and transport is the primary contributor to CO₂ emissions
- For non-resident visitors the greenhouse gas emissions per consumption unit is twice as high as the reference group of Swedish households

Conclusions (cont.)

- The important link between tourism and greenhouse gas emissions must not be neglected
- Upcoming studies of tourism environmental footprint should consider analysis other environmental aspects



Thank you for listening!

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