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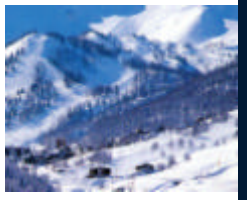


Climate change, the Environment and Tourism : the Interactions

General commentary

ESF LESC Exploratory Workshop
Milan, 4-6 June, 2003

Ghislain Dubois,TEC, 89 rue de la République - 13002 Marseille – France - + 33 (0) 4 91 91 81 25

Ghislain.Dubois@tec-conseil.com / June 2003

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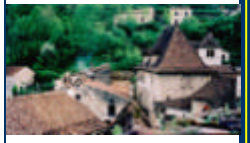

Contents

- The effect of climate change on the climatic and non climatic resources of tourism; adaptation of tourism
- The contribution of tourism to climate change
- The dependence of tourism on climate change mitigation policies

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A major constraint : the uncertainty on regional and local climate change

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A major constraint : the uncertainty on regional and local climate change

- Tourism research is dependent on climate research
- The lack of reliable local scenarios for climate change implies a high uncertainty in forecasting local impacts on tourism
- Contrasted scenarios rather than forecasting
- A need for a collective expertise of the validity of climate change hypothesis and their implications on the variability of results, for each case studies
- A new field: evaluating adaptation strategies for the tourism sector (technical feasibility, impacts on profitability, impacts on the environment, uncertainty)

  With a preliminary question: which governance for long term issues (public-private partnerships ?)

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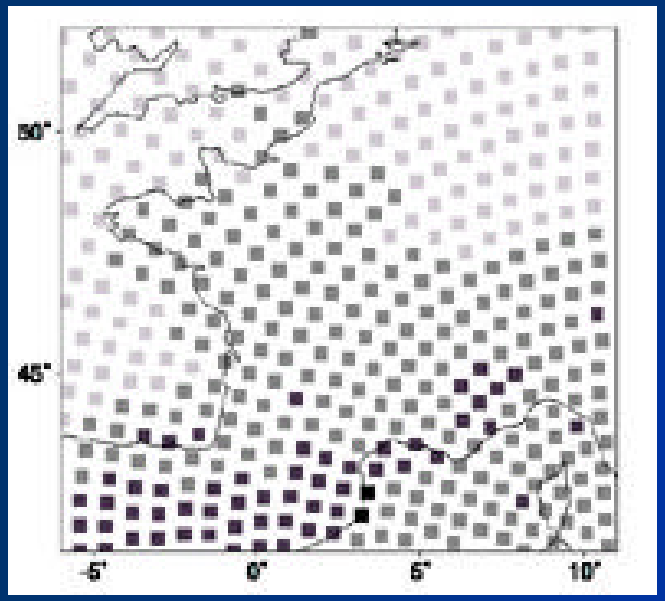
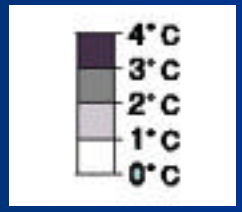
Temperatures

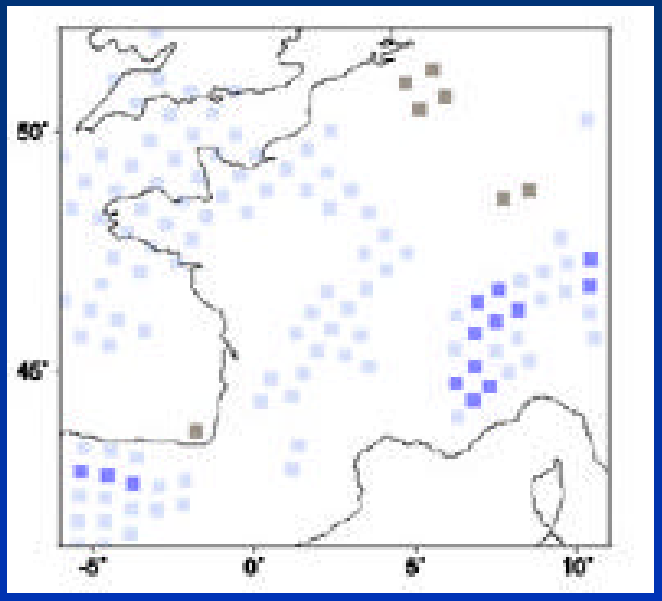
Summer

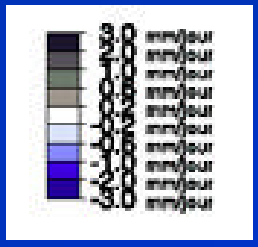




Rainfalls

Summer





Source: Meteo France

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Tourism impacts on climate change : the second side of the “Interactions”

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To what extent is it a problem ?

- Tourism transport from France and to France : from 7 to 8%
- Total tourism sector: from 9 to 10% ?
- A growing share of French emissions: the contribution of transport in French CO2 emissions jumped from 8% to 39% between 1960 and 1990
- A growing dependence of tourism on transports

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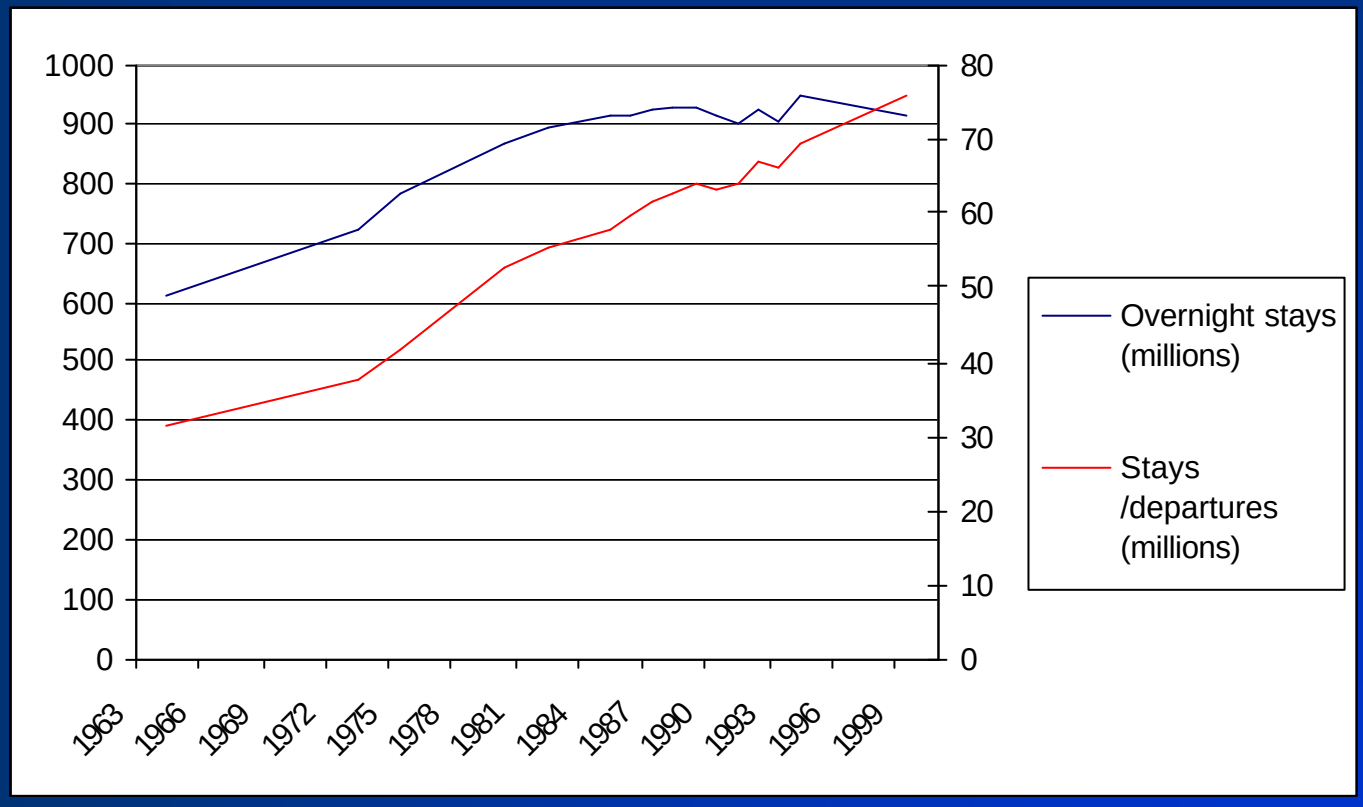
The growing dependence of tourism on transports

More transport for less tourism…

Evolution of overnight stays and departures- Long personal stays of French residents – 1964-1999



Source: Insee, Enquête « Vacances », 1964-1999

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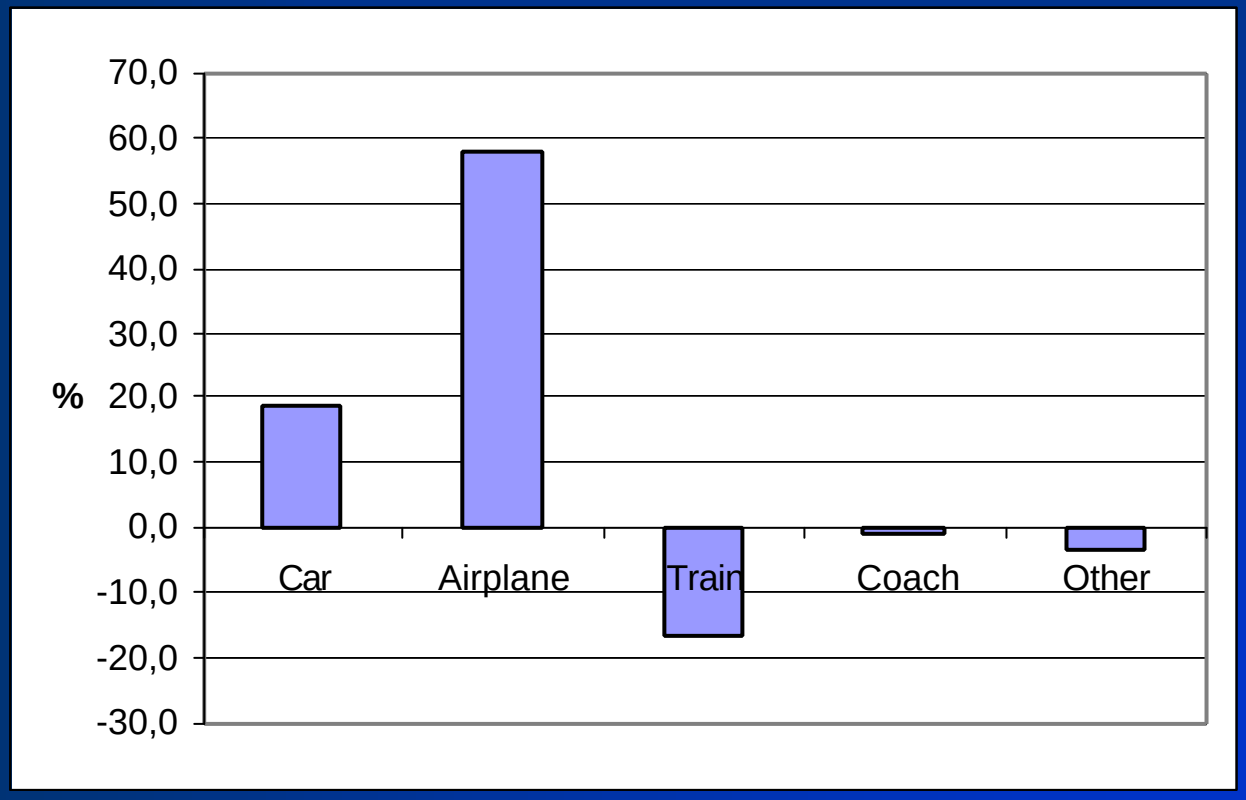
The growing dependence of tourism on transports

The evolution of modal split favour the most polluting means of transportation

Evolution of the modal repartition of holiday departures (> 4 nights), 1986-1999



Source: Insee, Enquête « Vacances », 1986-1999

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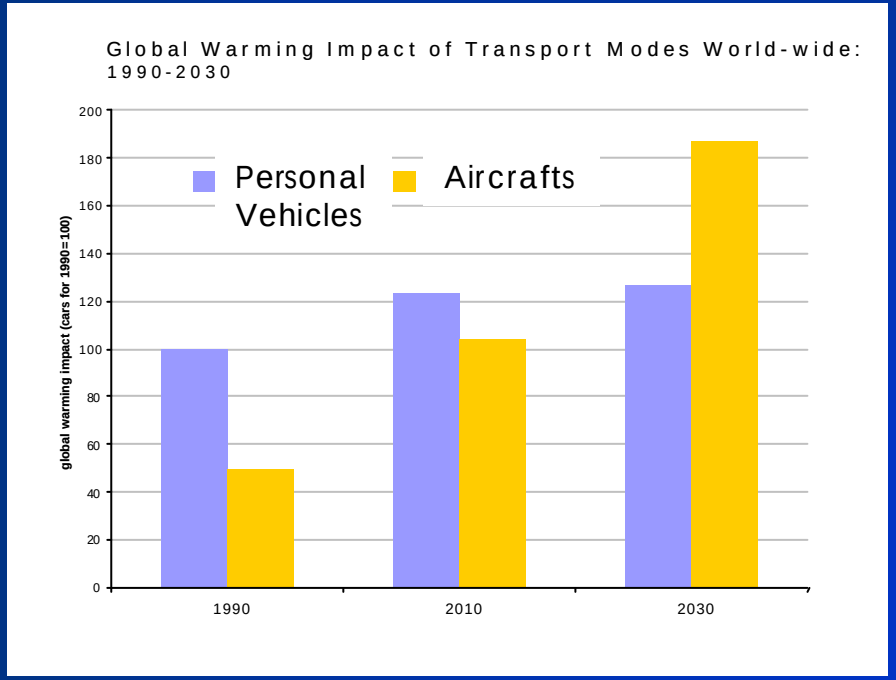
What is at stake ?

- In the short term and mid term : road transport
- In the long term : air transport

Global warming impact of Transport Modes- Worldwide 1990-2030 – Personal vehicles and aircrafts



Source: OECD, 2001

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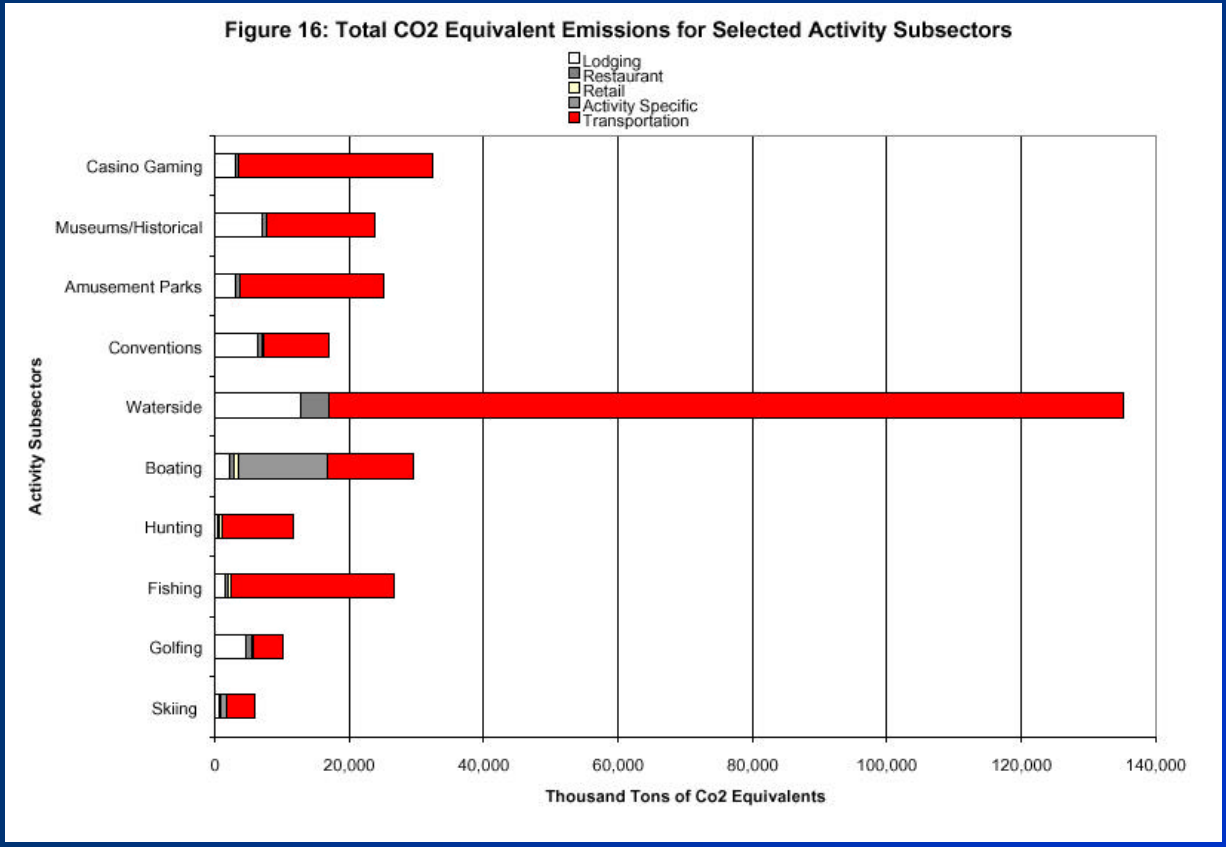
Methodological orientations

1. Concentrating on transports (roughly 80 % of the impacts)

Total CO2 equivalent emissions for Selected Activity Subsectors in the US



Source: EPA, 2000

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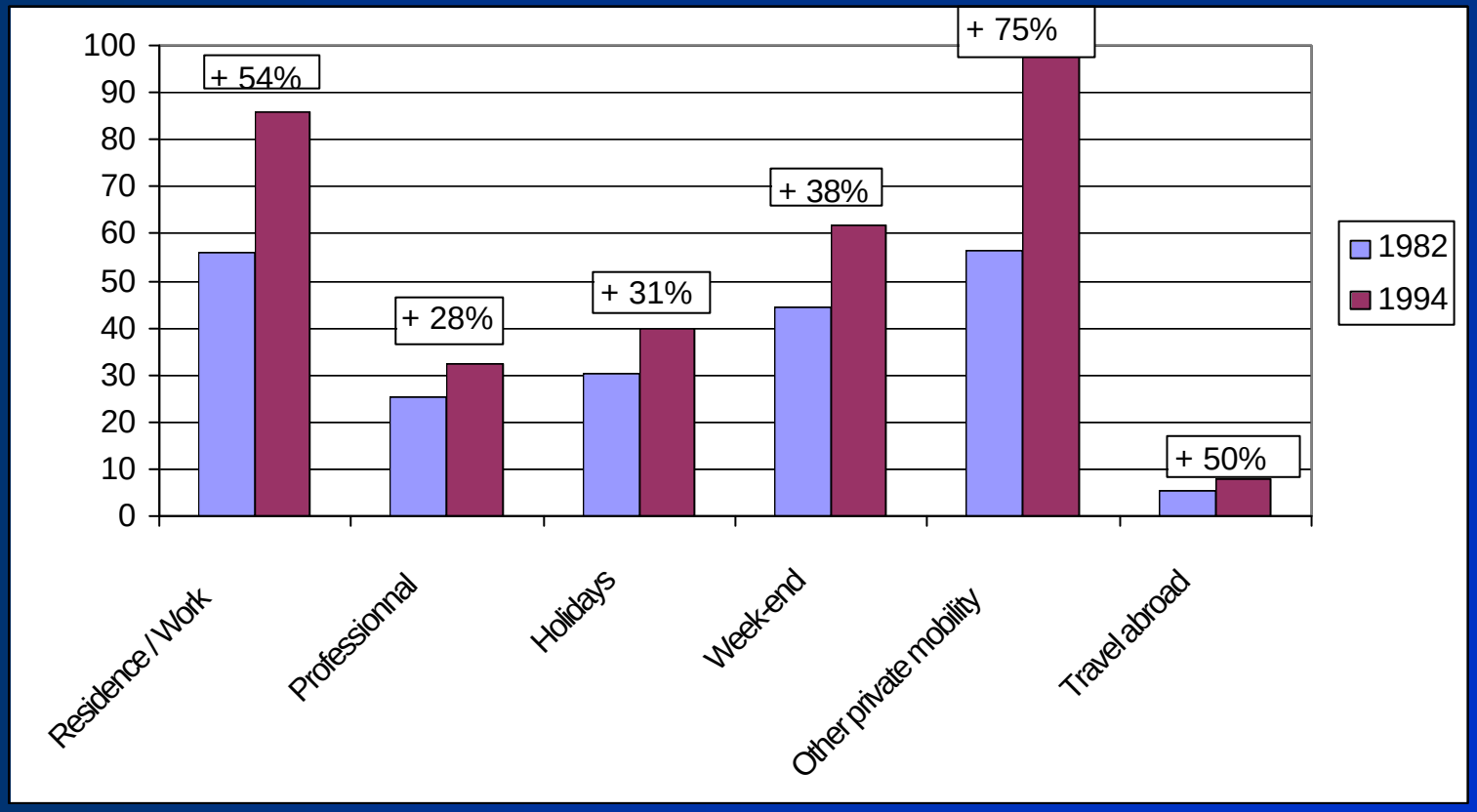
Methodological orientations

2. Linking tourism and leisure mobility

Average annual kilometres travelled by personal vehicles, by purpose
1982-1994- France



Source : Insee, « Transports et Communications » Surveys, 1982 and 1994

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Methodological orientations

3. Going one step beyond macro-sector evaluations, insisting on the impacts of production and consumption patterns on emissions profiles.

- Tourists can not be treated like freight

- Starting from « Tourism » rather than from « Transports » enables to start from needs (the need of leisure implies travel which impacts on the environment).

4. A need for common methodologies for national evaluations (ICCC and Kyoto are based on national inventories).

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Evaluating current impacts

Methods

- Who is responsible for the impacts of international tourism ?
- How to improve methods : tourism and transports databases

Possible works

- Country profiles (comparative research)
- Specific works

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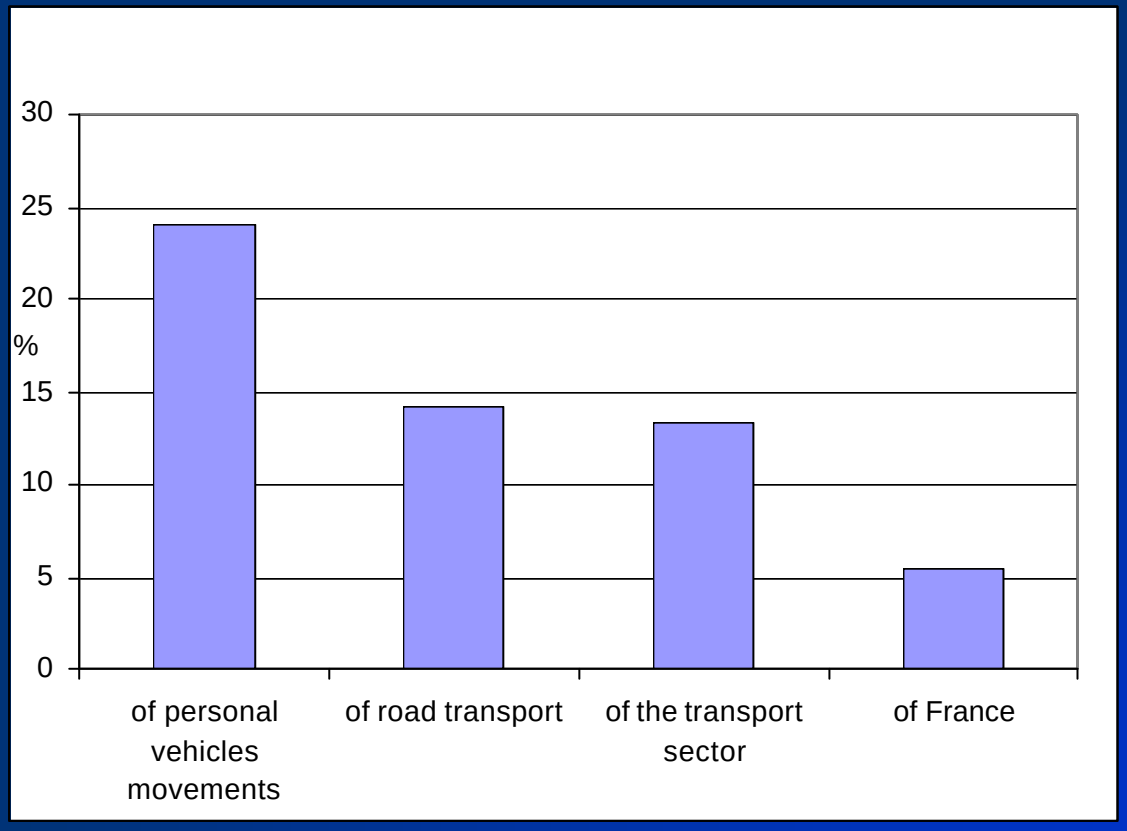
Country profiles

Contribution of French domestic tourism road transport to CO2 emissions of…



Source: Source : IFEN based on SNCF, European Environment Agency (Copert III and MEET programmes), IPCC, Airbus Industries, EDF

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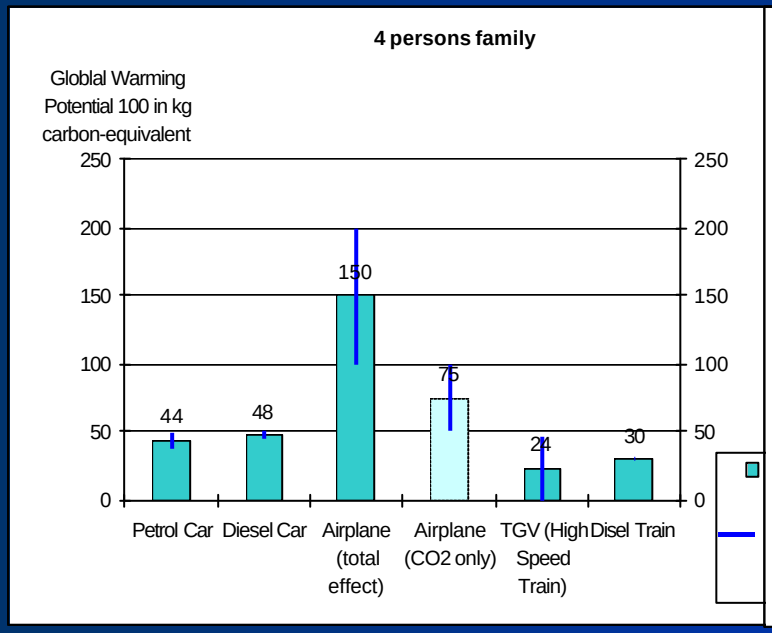
Transportation modes comparison

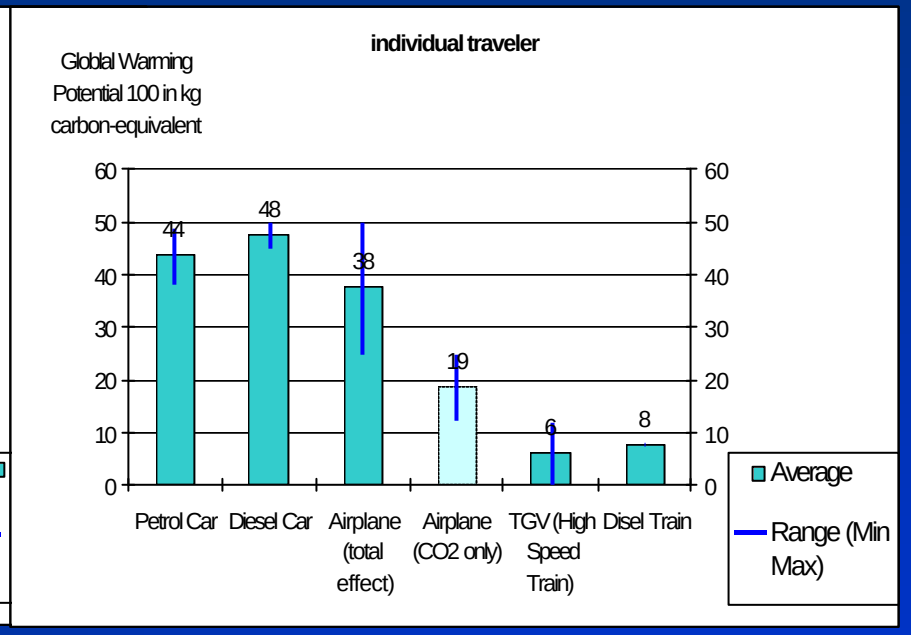
Individual responsibility in greenhouse effect

Impact on the greenhouse effect of a journey from Paris to Nice, depending on the mode of transport

4 persons family



Individual traveler



Source : IFEN based on SNCF, European Environment Agency (Copert III and MEET programmes), IPCC, Airbus Industries, EDF

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Estimating future impacts: future research

- Understanding mobility patterns and their evolution : history and sociology of tourism and leisure
- Elaborating mobility pattern prospects and their impact on CC
- National and global scenarios for tourism/leisure mobility demand

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		Annual number of trips	Distance per trip	Total annual km travelled	GHG intensity coefficient	Associated GHG emissions	Climate Change Index
Conventional				**5760**		**5370**	**1**
	Long dist	2	1500	3000	1	3000	
	very long dist		6000	0		0	
	Outing	6	200	1200	1	1200	
	bi-residential		500	0		0	
	short dist	52	30	1560	0,75	1170	
Great travellers				**11380**		**23185**	**4,32**
	Long dist	2	1500	3000	1	3000	
	very long dist	1	6000	6000	3	18000	
	Outing	8	200	1600	1	1600	
	bi-residential		500	0		0	
	short dist	52	15	780	0,75	585	
Home centred				**6720**		**11940**	**2,22**
	Long dist		1500	0		0	
	very long dist	0,5	6000	3000	3	9000	
	Outing	3	200	600	1	600	
	bi-residential		500	0		0	
	short dist	52	60	3120	0,75	2340	
Bi-residential				**24380**		**25185**	**4,69**
	Long dist		1500	0		0	
	very long dist	0,5	6000	3000	3	9000	
	Outing	3	200	600	1	600	
	bi-residential	40	500	20000	0,75	15000	
	short dist	52	15	780	0,75	585	

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How will tourism adapt ?

- to climate change

- to climate change mitigation policies

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Tourism facing mitigation policies

Factors for change

- Technical change and the booming of tourism flows

Car and aircraft energy efficiency improved 1% a year, while tourism flows grew 4% a year….

- Socio-economic changes

Incentives for longer stays and less departures, Tour operators policies, demographic changes (more retired people).

- Cultural change (inclination to travel)

History tourism shows that mobility patterns evolved a lot, and will still evolve a lot. Who can predict tourist attitudes in 50 years ?

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Tourism facing mitigation policies

Analysing the awareness of tourism stakeholders

International Federation of Tour Operators definition of Sustainable tourism " *That the tourism supply meets the demand in the long term* " (Eastbourne, 2002).

NGO Campaigns ("Carbon neutral", "Red card for Air Travel" campaign), conferences, press reviews, awareness raising (www.chooseclimate.org)...

Environmental reporting of airline companies

Sociology and political science could address this question

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Tourism facing mitigation policies

Impacts of mitigation policies

- Kerosene taxation for Airplanes

Remote destinations (often LDC) could be more touched

Worldwide or within OECD countries (equity)

- Infrastructure (rail) development

Expanding highways or high speed trains to Eastern Europe ?

- Tradeoffs, tradable permits...

What if tourism can not comply with Kyoto ? Trafeoffs within the transport sector (rail freight), or with other sectors (which can afford ?)