

**COMMITTEE ON
STATISTICS AND THE TOURISM SATELLITE ACCOUNT**

Italy's MST Pilot Study

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Angelica Tudini, Carolina Ardi, Emanuela Recchini - Istat



Background and content

BACKGROUND

October 2016 – 1st Meeting of the Working Group of experts on Measuring Sustainable Tourism (MST) and January 2017 – Committee on Statistics and the TSA

→ Italy presented an outline of a case study on the interaction between tourism industries and the environment within an integrated TSA-SEEA framework; expected output:

		Tourism industries	Other industries	Total Economy	
Economic Module	Output				Source: Italian TSA
	Value Added				
	Employment				
Environmental Module	Air emissions				One or more – to be assessed
	Energy input				
	Environmental taxes				

CONTENT: CASE STUDY RESULTS

1. The actual TSA-SEEA integrated framework (Which economic data? Which environmental data? Why?)
2. Main results – environmental flow estimates by industry
3. How estimates were produced - methodology



TSA-SEEA integrated framework in the Italian case study

ECONOMIC MODULE (TSA consistent)	Tourism industries (11)		Other industries		Total Economy	
	Output (O)	Tourism Share (TS)	O	TS	O	TS
Products (14)						
Total output						
Total intermediate consumption						
Total Value Added						

Source: Italian TSA – 2015 (Istat - December 2017) - Table 6 Total domestic supply and internal tourism consumption
<http://www.istat.it/en/archive/208130>

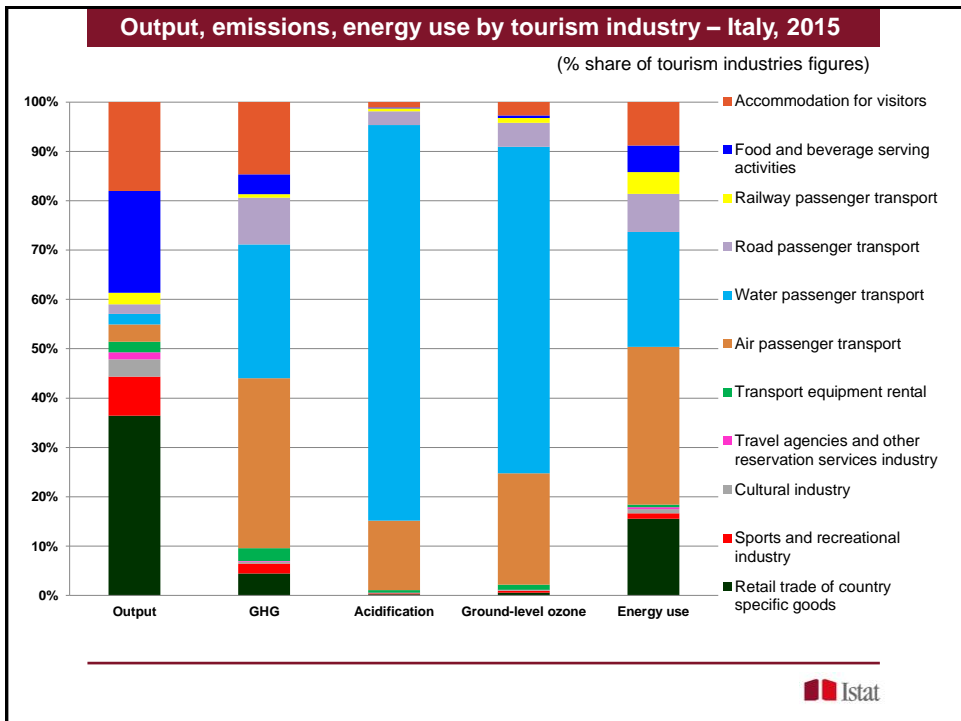
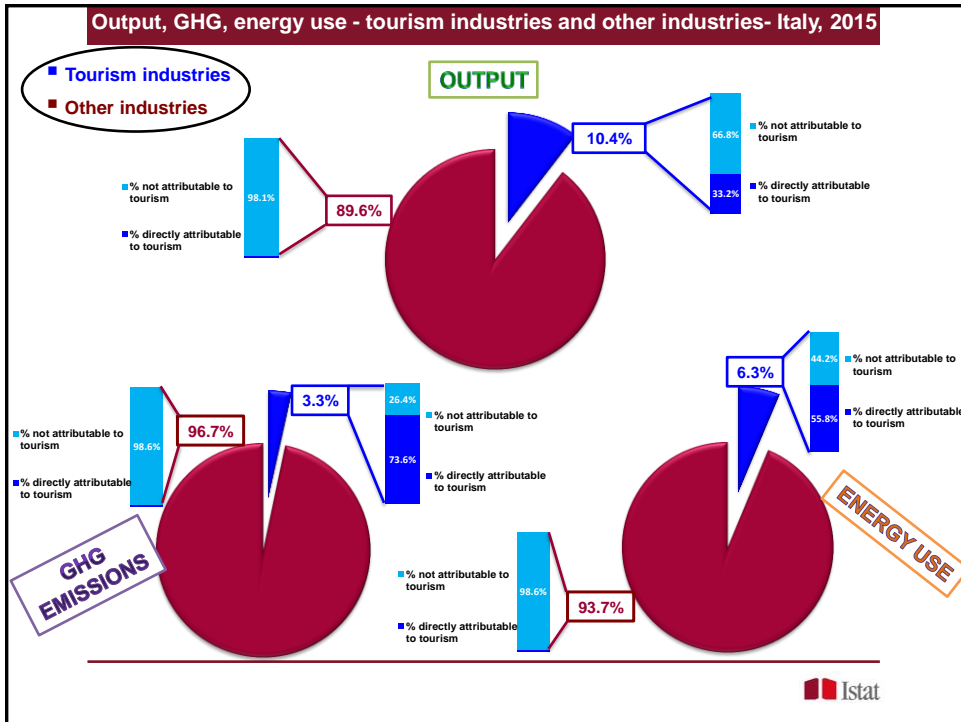
ENVIRONMENTAL MODULE (SEEA consistent)	Tourism industries (11)		Other industries		Total Economy	
	Output (O)	Tourism Share (TS)	O	TS	O	TS
Air emissions by theme						
GHG						
Acidification						
Ground level ozone						
Energy use (by purpose)						



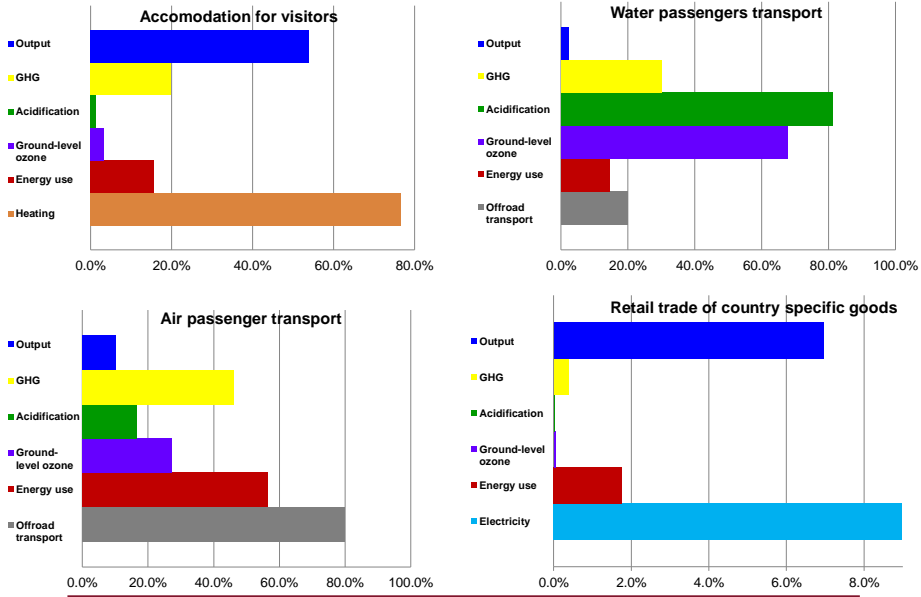
TSA-SEEA integrated framework in the Italian case study

PRODUCTS	Tourism industries											Other industries	Total economy	
	1	2	3	4	5	6	7	8	9	10	11			TOTAL
	O	TS	O	TS	O	TS	O	TS	O	TS	O	TS	O	TS
Tourism characteristic products														
...														
Other														
Total output														
Total intermediate consumption														
Total value added														
ENVIRONMENTAL FLOWS														
Air emissions (3)														
Energy use (4)														





Environmental profiles – Italy, 2015 (% of tourism share figures)



Methodology

Environmental flows (EF) estimates for the TSA-SEEA case study cover air emissions (EMI) for three environmental themes (GHG, acidification, ground level ozone) and energy use (EU) for four purposes (heating, road transport, off-road transport, electricity use).

Objective is to calculate:

1. Amount of environmental flows related to each tourism industry as a whole (regardless of the proportion directly attributable to tourism): $EF_{EMI_TOURind(i)}$ and $EF_{EU_TOURind(i)}$
2. tourism share of environmental flows: $EF_{EMI_TS(i)}$ and $EF_{EU_TS(i)}$

PRODUCTS	Tourism industries				TOTAL	Other industries		Total economy	
	1		i			...			
	O	TS	O	TS		O	TS	O	TS
Tourism characteristic products									
...									
Other									
Total output									
Total intermediate consumption									
Total value added									
ENVIRONMENTAL FLOWS									
Air emissions (3)									
Energy use (4)									



Environmental flows for tourism industries as a whole

1. Estimating environmental flows related to each tourism industry as a whole: **EF_EMI_TOURind_(t)** and **EF_EU_TOURind_(t)** requires to:

a. Identify tourism industries related environmental flows within the available environmental accounts data sources, consistently with TSA – see [examples](#) below

Tourism industry (a)	NA and environmental accounts economic activity classification (b)	Difference in scope - portion of economic activity (b) not included in tourism industry (a)
....		
3- Railway passenger transport	Railway transport	Freight rail transport
....		
6- Air passenger transport	Air transport	Freight air transport and space transport
10- Sports and recreational industry	Lotteries, betting and casinos related activities	none
	Sports, amusement and recreation activities	Activities of sports clubs. Fitness facilities

b. Single out environmental flows by tourism industry from environmental accounts (= national accounts) economic activity classifications: two cases



Full list – for reference

Tourism industry (a)	NA and environmental accounts economic activity classification (b)	Difference in scope - portion of NA economic activity (b) not included in tourism industry (a)
1- Accommodation for visitors	Accommodation	Accommodation for students, and workers such as student residences, school dormitories, workers hostels
	Buying and selling of real estate and real estate activities for third parties	No conceptual difference in scope but the portion of real estate activities not related to tourism is not included
	Rental and management of properties owned or leased	See above
2- Food and beverage serving activities	Food and beverage serving activities	Event catering and other food service activities
3- Railway passenger transport	Railway transport	Freight rail transport
4- Road passenger transport	Other land passenger transport	Urban and suburban passenger land transport
5- Water passenger transport	Maritime and inland water transport	Sea, inland and coastal freight water transport
6- Air passenger transport	Air transport	Freight air transport and space transport
7- Transport equipment rental	Renting and operating leasing activities	Renting and leasing of recreational and sports goods (part of tourism industry 10 – sport and recreational industry)
8- Travel agencies and other reservation services industry	Services activities of Travel agencies, Tourism Operators and related reservation services and activities	No difference in scope but the portion of output related to package tours is not included
9- Cultural activities	Creative, arts and entertainment activities	none
	Libraries, archives, museums and other cultural activities	Library and archives activities
10- Sports and recreational industry	Lotteries, betting and casinos related activities	none
	Sports, amusement and recreation activities	Activities of sports clubs. Fitness facilities
11 - Retail trade of country specific goods	Retail trade, except of motor vehicles and motorcycles	Retail trade of country non tourism specific goods



Environmental flows for tourism industries as a whole

CASE 1. If a national accounts economic activity and the corresponding tourism industry have the same scope (no difference reported in column 3)

→ the (known) environmental flow of the specific national accounts economic activity is also the EF of the corresponding tourism industry: Very few cases! For example:

Tourism industry	NA economic activity classification	Difference in scope
10- Sports and recreational industry	Lotteries, betting and casinos related activities	none
	Sports, amusement and recreation activities	Activities of sports clubs. Fitness facilities

CASE 2. The scope of tourism industry is smaller than the corresponding NA (some difference reported in column 3)

First best option: (TSA output method): subtract from available environmental flow estimates the portion that falls outside the scope of tourism, i.e. for example

Tourism industry	NA economic activity classification	Difference in scope
6- Air passenger transport	Air transport	Freight air transport and space transport

Can we identify this item in terms of emissions? Energy use?

→ feasible in one case only



Environmental flows for tourism industries as a whole

Second best option: environmental flows for tourism industries estimated as (tourism industry/NA) output ratio of the corresponding NA economic activity EF

$$\text{For emissions: } EF_EMI_TOURind_{(t)} = EF_EMI_NA_{(t)} * \text{output_TOURind}_{(t)} / \text{output_NA}_{(t)}$$

(the same holds for energy use data)

PRODUCTS	Tourism industries			Other industries	Total economy
	1	i	TOTAL		
Total output (available from TSA)					
ENVIRONMENTAL FLOWS					
Air emissions (to be calculated)					
Energy use (to be calculated)					
	National accounts economic activities			Other industries	Total economy
	j				
Total output (available from NA)					
ENVIRONMENTAL FLOWS					
Air emissions (available from environmental accounts)					
Energy use (available from environmental accounts)					



Tourism shares of environmental flows

2. Estimating environmental flows related to tourism shares $EF_EMI_TS_{(t)}$ and $EF_EU_TS_{(t)}$

For most tourism industries, tourism output ratios ($output_TS_{(t)}/output_TOURind_{(t)}$) derived from the Italian TSA were used to derive tourism share of environmental flows.

For emissions: $EF_EMI_TS_{(t)} = EF_EMI_TOURind_{(t)} * (output_TS_{(t)}/output_TOURind_{(t)})$
(the same holds for energy use data)

PRODUCTS	Tourism industries										Other industries		Total economy	
	1		i		...		TOTAL							
									O	TS	O	TS	O	TS
Tourism characteristic products														
...														
Other														
Total output (available from TSA)														
ENVIRONMENTAL FLOWS														
Air emissions														
Energy use														

Available from previous step



Tourism shares of environmental flows

For transport tourism industries (Railway passenger transport, Road passenger transport, Water passenger transport, Air passenger transport), product specific environmental flows were calculated - for air emissions (not for energy use).

For example for Air passenger Transport:

PRODUCTS	Tourism industries										Other industries		Total economy	
	1		Air passenger transport		...		TOTAL							
									O	TS	O	TS	O	TS
Tourism characteristic products														
...														
Air passenger transport (TSA)														
...														
Other														
Total output (available from TSA)														
ENVIRONMENTAL FLOWS														
Air emissions (of which air transport)														
Energy use														



Concluding remarks

Feasibility of an environmentally extended tourism satellite account case study for Italy

- **Already covered in this case study**
 - Air emission accounts
 - Physical energy flow accounts
- **Short term**
 - Environmentally related taxes by economic activity
- **Medium/long term**
 - Environmental protection expenditure accounts

Thank you!!

*[contacts for details on the Italian TSA-SEEA case study: ardi@istat.it
recchini@istat.it tudini@istat.it]*

[contacts for details on the Italian TSA: maresca@istat.it piscitelli@istat.it]