



# **Working Group of Experts on Measuring the Sustainability of Tourism**

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## **The demand perspective in measuring the sustainability of tourism with specific focus on environmental aspects**

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## **Introduction -1**

### **From IRTS 2008 to the SF-MST**

#### **The paper's subject**

The demand perspective in the SF-MST.

#### **A follow up to a recommendation from IRTS 2008**

To take into account the relationships between tourism and sustainable development. To measure as first priority the links between tourism and the environment at the level of the national economy through an integration of tourism satellite accounts and environmental-economic accounts (IRTS 2008, Chapter 8).

## **Introduction - 2**

### **Beyond a conventional concept**

#### **Centrality of the demand perspective in the SF-MST**

In Chapter 3 - on the environmental dimension of sustainability - it is envisaged that initial estimates be undertaken applying first the supply perspective, mainly for feasibility reasons, but it is clear that the demand perspective is crucial both on a general conceptual ground and in terms of the statistical data that it specifically underlies.

#### **To enlarge the concept of demand perspective**

A demand perspective tailored for the SF-MST needs to cover both the activity of visitors and related environmental implications. It should go beyond visitors' consumption of products, taking into account with equal attention benefits obtainable by visitors directly from ecosystem assets.

## **Preliminary remark - 1**

### **Following a systems approach**

#### **A multiple capitals-based approach**

In the SF-MST priority is given to the option of applying a multiple capitals-based approach. In this respect, the discussion of the demand perspective in the paper is focused in particular on phenomena involving environmental and ecosystem assets.

#### **An accounting-based statistical framework**

The demand perspective discussed in the paper results essentially from considering the demand perspective in IRTS 2008 and TSA:RMF 2008 and complementing it through inclusion also of related environmental aspects according to the environmental-economic accounting framework provided by the SEEA.

## **Preliminary remark - 2**

### **Taking into account mainly direct flows**

#### **Main stream of official statistics data on flows - direct flows**

For describing the activity of visitors, in official statistics the flows that are taken into account are mainly direct ones. By starting from data on direct flows, in fact, researchers and decision makers can manage to obtain through specific elaborations the knowledge they aim for. First of all, therefore, the demand perspective in the SF-MST is focused on direct flows as concerns both visitor activities and related environmental impacts.

#### **Statistical information taking into account also indirect flows**

Indirect environmental flows are measured with a view to attribute to visitors' demand environmental flows generated by production processes along the whole supply chain activated by said demand.

## **Environmental flows caused by visitors' use of products**

### **Visitors' use of services**

Environmental flows linked to services actually are caused by industries serving visitors, not directly by visitors. They occur at the stage of production of the service, and in the SF-MST they are taken into account according to the supply perspective.

### **Visitors' use of goods**

Visitors cause directly environmental flows to occur when they make use of certain goods. In principle these may be either connected goods or non-tourism-related goods. Said environmental flows add to similar ones attributed to industries serving visitors in the SF-MST and they should be taken into account distinctly.

## **Environmental flows caused by visitors' use of goods - 1**

### **Examples of environmental flows directly generated by visitors**

When driving cars on holiday

- Air emissions generated through consumption of fuel for the car.

When staying with friends and relatives

- Air emissions generated through consumption of fuel for house heating
- Use of energy products and distributed water (depletion of environmental assets such as energy and water resources respectively)
  - electricity
  - abstracted water.

## **Environmental flows caused by visitors' use of goods - 2**

### **Integrating international statistical standards for tourism and the SEEA-CF**

Sound estimates of environmental flows that visitors directly generate could be obtained by integrating in a single framework data on tourism expenditure and physical data derived from air emissions accounts and physical SUTs e.g. for energy or water.

### **Apportioning procedures**

In practice, suitable calculation methods could be devised in order to single out visitor shares from data on environmental pressures attributed to households in environmental accounting physical flow accounts.

## **Environmental flows caused by non-resident visitors' use of goods**

### **Inbound tourism and the residence principle in the SEEA-CF**

As concerns non-resident visitors, no data on environmental pressures can be derived from SEEA-CF physical flow accounts for proper linking to visitor activities, since such accounts follow the residence principle. As far as inbound tourism consumption is concerned, therefore, it would not be possible to calculate environmental flows based on physical flow accounts data.

### **Suitable statistical information obtainable from «bridge tables»**

One could use, however, environmental data included in so-called bridge tables possibly produced for reconciling figures calculated according to the residence principle or not (see e.g. the bridge tables complementing air emissions accounts of the European Statistical System).

## **Impacts on the environment from visitors' demand beyond the use of products - 1**

### **Benefits derived directly from ecosystems**

Visitors may directly derive benefits from ecosystems irrespective of the use of services or goods, mainly through leisure activities, and in doing so they may at the same time exert directly impacts on the natural environment.

### **Integrating the international statistical standards for tourism and the SEEA-EEA**

Data on such activities could be integrated with suitable statistical information concerning the ecosystems directly involved, with a view to measure the impacts exerted on the environment. To that end ecosystem accounting data obtainable from SEEA-EEA accounts could be particularly suitable.

## **Impacts on the environment from visitors' demand beyond the use of products - 2**

### **Calculation procedures**

Using SEEA-EEA accounts' data not necessarily would involve the need of apportioning procedures because in principle the data at issue do not refer to households as is the case with SEEA-CF accounts. In most cases, in fact, the relevant data concern ecosystem conditions and are geo-referenced.

### **Inbound tourism**

Furthermore, in principle there would be no impediment to linking SEEA-EEA accounts' data to statistics on non-resident visitor activities, since ecosystem accounting data is not based on the residence of economic actors.

## Overview of a demand perspective focused on direct impacts on the environment from different types of visitors' demand

<b>Supply of statistical information on Tourism according to the SF-MST</b>		
based on the IRTS 2008		
based on the <b>TSA: RMF 2008</b>		
integrated with the <b>SEEA-CF EA</b> and the <b>SEEA-EEA</b>		
scope of the data: the economy and beyond		
<b>Economy</b>		<b>beyond the Economy</b>
		↓
Supply perspective (Tourism share of industries' output)	<b>Demand perspective (the activity of visitors)</b>	
	↑	
focused on the supply side of the tourism economy	<b>focused on the demand side of the tourism economy</b>	<b>focused on a non-market demand by visitors for benefits obtainable directly and for free from nature</b>
<b>Use of statistical information on Tourism for analysing Tourism's role in Sustainable Development (analytical work)</b>		

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## Environmental flows caused indirectly by visitor demand and generated by production processes along the whole supply chain

### A demand perspective not limited to direct environmental flows

A special type of demand perspective results by taking into account all environmental flows that visitors' demand indirectly causes to be generated in industries along the supply chain in addition to those directly caused by industries serving visitors themselves.

### Input-output analysis techniques

As highlighted in the SEEA volume on Applications and Extensions, I-O techniques allow, starting from SUTs, to calculate environmental flows occurring along the whole supply chain concerning a given product, attributing them to the final demand for the same product. Ad hoc calculation methods could be devised in order to single out visitor shares in said demand.

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## The “polluter pays principle”

### Support to integrated visitor-environmental policies

The demand perspective enlarged for considering also tourism relevant environmental aspects is particularly suitable for providing the statistical basis to support analyses and policies centred on the “polluter pays principle” with reference in particular to visitors.

In this sense, the special type of demand perspective focused on the whole supply chain linked to visitors’ demand applies if the visitor is deemed responsible also as concerns environmental impacts generated at the stage of the production of the product purchased.

## Concluding remarks - 1

1. A common understanding about what the demand perspective should mean in terms of concepts and measurement boundaries is needed. The demand perspective put forward in the paper is deemed suitable for the SF-MST; it has internal consistency and is comprehensive as far as environmental aspects are concerned.
2. Social aspects, not discussed in the paper, are of specific interest for the demand perspective.
3. The accounting approach as fundamental logic of the SF-MST and environmental accounting estimates from which to derive tourism shares are main elements determining the way the demand perspective is articulated in the paper.



## Concluding remarks - 2

4. **The residence principle** underlying the TSA and SEEA-CF accounts data may make it necessary to some extent to rely on availability of data sources beyond standard accounts.
5. **Statistical information at sub-national scales** can hardly be developed just by integrating TSA and SEEA-CF accounts data, at least as regards territorially little extended destinations not defined in administrative terms overlapping with usual official statistics spatial references.
6. **Data users' needs** are crucial in order to determine whether the demand perspective should be prioritized in developing statistical information on the sustainability of tourism. Of course, the resources available for producing the data are, in turn, a possible limiting factor.

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# Thank you for your attention!

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