Operational framework for measuring sustainable tourism in destinations: the case of Santorini

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Committee on Statistics and TSA, Madrid 24-25/1/17

The objective of an UNWTO Sustainable Tourism Observatory

Create a tool for

• Measuring tourism activity at sub-national level
• Creating a causal chain between tourism activity, its total results and its per capita performance, its impact to a destination’s state and policy measures
• Interrelating economic, social and environmental goals of destination’s sustainability with tourism activity in order to evaluate and valuate the performance and the impact of tourism
• Planning and Monitoring for S Tourism and S Destinations

facilitating stakeholders’ decision making
The methodological framework

The methodological framework includes the following components:

**D** (Demand)
- Tourism infrastructure & services
- General infrastructure & services
- Cultural services
- Sports and recreational services
- Environmental – Natural Assets
- Cultural Assets

**P** (Production)
- Production receipts
- Employment
- Land use changes
- Water, energy & other resources consumption
- Solid and water waste production
- Air, Noise, Light etc pollution

**S** (Support)
- GDP
- Population size & structure
- Life expectancy
- Unemployment & income distribution (poverty level)
- Drinking water availability & quality
- Sea quality
- Soil quality
- Biodiversity
- Air quality
- Other resources quality and availability
- Landscape quality
- Urban quality

**I** (Influence)
- Capacity to provide economic welfare
- Capacity to provide social welfare
- Capacity to provide ecosystem goods & services

Methodology 2: policy making

**DF**
- Tourism infrastructure
- General infrastructure
- Attractions
- Expenditure
- Employment multiplier

**P**
- Tourism expenditure
- Employment
- Water consumption
- Energy consumption
- Waste production
- Land use change

**SI**
- GDP evolution
- Competitive sectors
- Degree of specialization
- Investment economic motives
- Improve accessibility
- Increase occupancy rate
- Waste treatment
- Expenditures increase

**Activity pattern**
- Activity's Footprint
- Direct effect

**Performance**
- Activity's Footprint
- Direct effect

**Impact**
- Area's sustainability
- Total effect

**Policy**
- Expenditures' increase
- Improvement economic motives
- Increase accessibility
- Increase occupancy rate
- Waste treatment
- Expenditures increase
The data collection for islands: the natural limits of the destination

• Secondary data
  – Administrative data: number of tourism enterprises, employment evolution, airport and sea arrivals, energy consumption, frequentation of museums
  – Collection from local sources: water consumption
  – Statistic information: demographic, economic, employment, unemployment

• Primary data
  – Land use – GIS
  – Tourists’ survey (ETIS adapted)
  – Tourism enterprises’ survey (ETIS adapted)
  – Local population survey (ETIS)
  – Destination questionnaire (UNWTO)
  – Expert evaluation & researchers assumptions

Basic information & practices used (1)

• Number of beds of all types of accommodation: hotels and similar, B&B, private houses, as base for estimation of the production capacity of tourism activity
• Estimation of tourists arrivals based on arrivals on the island by air and sea, per month
• Estimation of tourists night spent as base for estimation of real production
• Estimation of the water and energy consumption from residents and tourists based on seasonal fluctuations and per company from surveys
• Estimation of tourism expenditure
Basic information & practices used (2)

Creation of basic indicators for evaluation of tourism activity sustainability:
- beds/population (social pressure)
- beds/area (environmental pressure)
- Nights spent/bed (economic efficiency)
- Revenue & tourism expenditure /bed (econ efficiency)
- Expenditure/night spent (economic efficiency)
- Direct employment/bed (social efficiency)
- Water consumption/night spent (ecological efficiency)
- Energy consumption/night spent (ecol. efficiency)
- Solid waste production/night spent (ecol. efficiency)

Basic information & practices used (3)

Creation of basic indicators for evaluation of destination sustainability (1)
- % of tourism in destination’s GDP (evolution)
- % of tourism investment in total investment
- GDP evolution
- % of tourism employment in total employment (evol)
- Evolution of demographic ..... 
- Evolution of revenue per capita (share)
- Evolution of life expectancy
- Habitat fragmentation - biodiversity
- % water consumed by tourism
Basic information & practices used (3)

Creation of basic indicators for evaluation of destination sustainability (2)

- availability and quality of drinking water (import of bottled water)
- management of solid waste (% of recycled material)
- management of waste water (% of treated waste)
- Level of noise
- Level of atmospheric pollution
- Level of circulation problems
- Quality of urban quality
- Landscape quality

The case study of Santorini within Aegean Observatory

Driving forces. The description of tourism activity:
- 36,341 professional and 23,562 private beds
  Pressure: 4 beds/capita, 790 beds /sq. km
- 548 restaurants
- 113 Travel agencies
- 28 Rent a car
- Different activities (sea sports, excursions, climbing, hiking, diving)
- 2 Archaeological Museums, 2 archaeological sites, 15 wineries, 1 tomato factory and other places for visiting with ticket
- Beaches, Volcano, Churches, Settlements, Landscapes and other attractions without ticket
Tourism results/pressure main indicators

- 1.5 m of arrivals (ship, scheduled and charter flights) and 5.5 nights spent + 805,000 of cruise visitors (2015) and 13,528 locals

Occupancy rate: about 90 nights spent per bed
(from 120 to hotels to 75 other categories)

Seasonality:
39.6% during July/August
70.5% during May-September

Tourism results/pressure from tourist first survey

• Average stay: 5.8 days
• 70% stayed in hotels
• 52% had a B&B reservation and 35% room only
• Local transport: 43% by bus, 25% by rented car and 22% by taxi
• 20% tourism package,
• learned about the area from Internet 52%, friends and family 2%, tourism guide 24% ..
• Use of Internet: 82% for information and 70% for reservation
• Average daily expenditure: 286 euros
Tourism results and main indicators (1)

Environmental results
- 11% of land is built
- Increasing consumption of water & seasonality
- Production of energy seasonality

Impact of tourism to the destination

Economy:
- tourism driven 30% of the enterprises and 30% of the added value is coming from HORECA

Employment:
- Census: 1994 hotels-bars-restaurants + 1325 retail + 368 transport + 54 entertainment (concerns only locals)
- Based on national estimations: 0,29 employment in tourism per bed: 10.538 employment

Environment:
- Housing: 13528 houses for 2011 compared to 3755 for 1971 (27%) – intense and widespread construction
- 11% of the area is built
- Water scarcity – 5 desalination plants
- Congestion
For communication

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The OMT Observatory for Sustainable Tourism of Greek Islands (1)

- Launched in September 2014
- Based on the methodology presented
- Concerns 2 regions of 48 + 10 islands = 58 destinations
- Aegean is the main greek tourism destination
- Aegean has:
  - 9 international + 8 national airports
  - 30% of Beds (205.000 in hotels and 113.000 in secondary accommodation)
  - 18 M nights-spent in hotels (25% of the total)
Landscape, local cuisine, local production