Improving evidence-based decision making in the tourism sector

A review of the current discussions of measurements of sustainable development indicators (SDIs) for enterprises

UNWTO Tourism Statistics Special Workshop
Nara, Japan, 17-21 November 2014
Background of the study

Sustainable Development Goals (SDGs)
Background of the study

- Comparing apples and pears - Different metrics, units, measures and reporting strategies
- There is a need to develop targets that could be monitored through a comparable and robust indicator system
This presentation

• Analyses the diversity of metrics and approaches around measuring performance in the environment indicator dimension of SDGs at the enterprises level (CO$_2$, energy, water and waste)

• Further, it focuses on the analysis of recommendations stated in the literature
Methodology I

• **Data**
  - Analysis of CSR (Corporate Social Responsibility) reports of 10 major global hotel chains

• **Methodology**
  - Content analysis is used to categorize information stated in CSR in three main categories:
    • basic indicators and metrics,
    • efficiency or management related indicators,
    • technology indicators
Literature review on the main research and initiatives on the standardization is conducted
Results I - Analysis of CSR reports
Results I

Number of CO2 indicators

- None: 3, 1, 2, 1
- 1: 4, 5, 3, 2
- 2: 2, 1, 4, 3
- 3: 1, 2, 3, 4

Number of Energy indicators

- None: 3, 1, 2, 1
- 1: 4, 5, 3, 2
- 2: 2, 1, 4, 3
- 3: 1, 2, 3, 4

Number of Water indicators

- None: 3, 1, 2, 1
- 1: 4, 5, 3, 2
- 2: 2, 1, 4, 3
- 3: 1, 2, 3, 4

Number of Waste indicators

- None: 3, 1, 2, 1
- 1: 4, 5, 3, 2
- 2: 2, 1, 4, 3
- 3: 1, 2, 3, 4
### Results I

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>All % or kg CO², KWH energy, m³ water or kg waste Reduction achieved</td>
<td>High</td>
</tr>
<tr>
<td>CO₂ No. Trees planted</td>
<td>Low</td>
</tr>
<tr>
<td>kg CO² offset</td>
<td>Low</td>
</tr>
<tr>
<td>Energy KWH per types of energy or fuel</td>
<td>Low</td>
</tr>
<tr>
<td>KWH green energy purchased</td>
<td>Low</td>
</tr>
<tr>
<td>Water % or m³ Water use in water scarce/non-water scarce regions</td>
<td>Low</td>
</tr>
<tr>
<td>m³ Wastewater treatment</td>
<td>Low</td>
</tr>
<tr>
<td>Recycle grey water</td>
<td>Low</td>
</tr>
<tr>
<td>Waste Total dry waste (lb or kg)</td>
<td>Low</td>
</tr>
<tr>
<td>Total wet waste (lb or kg)</td>
<td>Low</td>
</tr>
<tr>
<td>Total recycling (lb or kg)</td>
<td>Low</td>
</tr>
<tr>
<td>kg Recycling by type</td>
<td>Low</td>
</tr>
</tbody>
</table>
Results II – Literature analysis
General considerations

- Unit of measurement
- Type of measurement
- Period of measurement
- Boundaries
## General Considerations

<table>
<thead>
<tr>
<th>Unit of Measurement</th>
<th>Type of Measurement</th>
<th>Period of Measurement</th>
<th>Boundaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg for CO2</td>
<td>Total</td>
<td>Month</td>
<td>Life cycle considerations; Sub-national perspective</td>
</tr>
<tr>
<td>KWH for energy</td>
<td>Intensity (guest) - Per Guestnight (GN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liters for water</td>
<td>Intensity (hotel) - per square foot, meter, other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kg for waste</td>
<td>Context sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Positive effects”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Major issues in SDIs and metrics

• “How to measure” - a lack of harmonized units of measurements
• “What to measure” - measuring only basic indicators, while ignoring efficiency- and technology-related aspects. Negative impact vs. positive effects
• The context sensitivity
• Seasonality
• Multiple aspects of the value chain
Recommendations

How to measure:
Apply harmonized units – this report outlined some of the harmonized metrics for the energy, CO\textsubscript{2}, water and waste that can be easily applied to the tourism sector

- Kg for CO2
- KWH for energy
- Liters for water
- Kg for waste
Recommendations

What to measure:

• Total and Intensity (for guest and hotel) measures
• Context sensitivity and the “displacement effect”
• Important to measure both negative and positive aspects
Recommendations

Where and when to measure:

- Monthly reporting should be, wherever possible, given preference
- Need to consider consumption taking place throughout the entire life cycle, including supply, manufacturing, use, and disposition of a product
Thank you!

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