Measuring the Sustainability of Tourism:
The Philippine Experience

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Outline of the Presentation

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II. Scope, Data, Data Sources & Methodologies
III. Preliminary Results of MST, 2012-2019
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High Level Discussion on Measuring the Sustainability of Tourism

Tourism contributed 12.7% to the Philippine Economy in 2019.

- Of the 6.9% 2019 GDP growth, tourism contributed 1.32 percentage points.
- Inbound tourism expenditure contributed 8.6% to the total exports* in 2019.
- Tourism employment shared 13.5% to total employment.

* Tourism was valued at PhP 2.5 trillion in 2019, up by 10.8% from 2018.

I. Philippine Initiatives on TSA and MST
High Level Discussion on Measuring the Sustainability of Tourism

Philippine Tourism Satellite Accounts

- Research study on the contribution of tourism to the Philippine economy (1988)
- Resolution 06-2009 - Approval of the PSA Board, the methodology for compiling the PTSA (2009)
- Approval and adoption of 2016 PTSCS (2016)
- PTSA Updating and Revision to align w/ the Revision of the SNA (2020)

Philippines: Measuring Sustainability of Tourism

- Manila Call for Action on Measuring Sustainable Tourism, 6th UNWTO International Conference on Tourism Statistics (June 2017)
- Compilation of tourism carbon dioxide emission (2018)
- Philippine experience on MST for UNWTO Publication (2020)
- Training on TSA and MST
- Presentation of the experimental estimates on MST – energy and water use of tourism industries during the meeting on Sustainable Tourism of Philippine Statistics Authority (PSA) and Department of Tourism (DOT) (2017)
- Presentation during the 14th National Convention on Statistics (2019)

High Level Discussion on Measuring the Sustainability of Tourism
II. Scope, Data, Data Sources and Methodology

**Scope**

Tourism Satellite Accounts
System of Environmental & Economic Accounts

- Energy Consumption
- Water Consumption
- Carbon Dioxide (CO2) emissions
Data and Data Sources

Department of Tourism
- Visitor Arrivals and Length of Stay
- Average Expenditures
- Distribution of Regional Travelers

Philippine Statistics Authority
- Philippine Tourism Satellite Accounts
- 2012 Input-Output Tables
- Philippine System of National Accounts
- Household Survey of Domestic Visitors
- Survey of Tourism Establishments
- Labor Force Survey
- Establishment Surveys

Department of Energy
- Common prices of petroleum products
- Volume of energy production

Methodologies

Energy Consumption
Sum of energy consumption on petroleum and other fuel products and electricity

PETROLEUM AND OTHER FUEL PRODUCTS
1. Tourism Gross Output (GO) = Tourism Expenditure \times I-O Technical Coefficient
2. Energy Consumption = (GO/price per liter of petroleum) \times Conversion factor

ELECTRICITY
1. Tourism Gross Output (GO) = Tourism Expenditure \times I-O Technical Coefficient
2. Energy Consumption = (GO/price per kWh) \times Conversion factor

Conversion factors:
- From MB to KTOE
- From GWh to KTOE

Notes:
1. 2012 Input-Output Table from Philippine Statistics Authority
2. Conversion factor: from MB to KTOE
3. Conversion factor: from GWh to KTOE

Sources:
- https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Methodologies

Water Consumption

WATER CONSUMPTION

1. Tourism Gross Output (GO) = Tourism Expenditure \times I-O Technical Coefficient
2. Water Consumption = GO/water price\(^1\) per cu.m.

\(^1\) Water consumption: water price - estimated using the National Accounts of the Philippines

Methodologies

Carbon Dioxide Emissions

PETROLEUM AND OTHER FUEL PRODUCTS

1. Get the petroleum and other fuel products consumption (in MB).
2. Convert the petroleum and other fuel products consumption from thousand barrels (MB) to barrels (bbl).
3. After converting to barrels of oil consumed, use the conversion factors to estimate the CO2 emission of consuming petroleum and other fuel products.

PETROLEUM AND OTHER FUEL PRODUCTS

CO2 emission of petroleum and other fuel products =

\[
\text{(barrels of oil consumed \times average heat content of crude oil \times average carbon coefficient of crude oil \times fraction oxidized \times molecular weight) / conversion factor to metric ton}
\]

Reference: https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references
Methodologies

Carbon Dioxide Emissions

**ELECTRICITY**

1. Get the energy consumption of electricity in kWh.
2. Get the average CO2 generated by delivered electricity at home.

Reference: https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

III. MST Preliminary Results, 2012-2019
From 2012 to 2019, the average share of Domestic Tourism to the Total Water Consumption of Internal Tourism is 73.60%.

The average share from 2012 to 2019 of Transport Services to Total Energy Consumption of Internal Tourism is 78.81%.
The average share from 2012 to 2019 of Internal Tourism’s Petroleum and Other Fuel Products Consumption to the Total Economy’s CO₂ Emission is 32.24%.

The average share from 2012 to 2019 of Internal Tourism’s Electricity Consumption to the Total Economy’s CO₂ Emission is 37.21%.
IV. Ways Forward

- Continuous training and technical assistance on deeper understanding of MST
- Regular advocacy programs & activities – users and data producers to institutionalize compilation of MST
- Updating of MST Estimates including the dissemination to various stakeholders
Thank you!

http://www.psa.gov.ph
http://openstat.psa.gov.ph
https://twitter.com/PSAgovph
https://www.facebook.com/PhilippineStatisticsAuthority