Estimating Water Consumption, Energy Consumption, and Carbon Dioxide Emission in the Philippines

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Outline of Presentation

1. The Philippine National Agenda on Tourism
2. Compilation of Philippine TSA and Pilot MST
3. Performance of Tourism Industry
4. Way Forward
The Philippine National Agenda on Tourism

1. Philippine Development Plan 2017-2022
2. Sustainable Development Agenda 2030
3. Ambisyon Natin 2040 (Long-Term Vision)
4. 10-point Socio-Economic Agenda

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The Philippine National Agenda on Tourism

Target 8.9 – by 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

- 8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate
- 8.9.1p1 Tourism direct GVA as a proportion of total GDP and in growth rate
- 8.9.2.p1 Proportion of employed in tourism out of total employed

Target 12.b – develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs, promotes local culture and products.

- 12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools

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SUSTAINABLE TOURISM DEVELOPMENT is integral to the national socioeconomic development efforts to improve the quality of life of the Filipino people. -Department of Tourism

DOT Aims for Data-Driven Response to Tourism Recovery Under New Normal with Survey 01 December 2020

DOT supports Coron's sustainable tourism development to bounce back 04 March 2021

Adopting sustainable tourism for the environment - Manila 05 June 2021

Tourism industry in PH to ‘build back better’: DOT chief 27 September 2021
Compilation of Philippine TSA and Pilot MST

Statistical Frameworks and its Linkages

Measuring Sustainability of Tourism
Start: 16th International Conference on MST
Manila, Philippines, June 22-23, 2017

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Historical Development of Tourism Satellite Accounts in the Philippines

- Research study on the contribution of tourism to the Philippine economy (1988)
- Approval of methodology for compiling the PTSA (2009)
- Approval and adoption of 2016 PTSCS (2011)
- Official release of PTSA covering the period 2000 to 2010
- Release of the Revised Series 2000 to 2018 and Table on Tourism Collective Consumption and Table on Tourism Gross Fixed Capital Formation (2020)

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Some Initiatives on MST in Philippines

- Manila Call for Action on Measuring Sustainable Tourism, 6th UNWTO International Conference on Tourism Statistics
- Compilation of tourism Carbon Dioxide Emission Training on TSA and MST
- Philippine experience on MST for UNWTO Publication
- Web release of the preliminary 2012 to 2020 estimates on Water and Energy Consumption, and Carbon Dioxide Emission of the Philippines

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)

- Presentation of Measuring Sustainability of Tourism to Inter-agency Committee on Tourism Statistics
- Presentation during the 14th National Convention on Statistics
- 2021 United Nations’ Statistical Commission (UNSC) Side Event
Compilation of Philippine TSA and Pilot MST

MST Key Statistical Data and Indicators in the Philippine Context

**ECONOMIC**
- Domestic tourism expenditure
- Inbound tourism expenditure
- Outbound tourism expenditure
- Internal tourism expenditure
- GVA in Tourism Industries
- Tourism Direct GVA
- Employment in tourism industries
- Tourism Gross Fixed Capital Formation
- Tourism Collective Consumption

**ENVIRONMENTAL**
- Water Consumption
- Energy Consumption (use of Energy and Petroleum and other fuel products)
- Carbon Dioxide Emission (use of Energy and Petroleum and other fuel products)

**SOCIAL**
- Yet to be developed

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Data and Data Sources

- Philippine Tourism Satellite Accounts (PTSA), PSA
- National Accounts of the Philippines (NAP), PSA
- 2018 Supply and Use Table, PSA
- Derived composite prices of Water, Electricity, and Petroleum and other fuel products*
- Conversion Factors from Greenhouse Gases Equivalencies Calculator – Calculations and References, US EPA

*using data from MWCI, MWSI, LWUA, DOE, MERALCO
Compilation of Philippine TSA and Pilot MST

General Methodology: Water and Energy Consumption

Internal Tourism Expenditure x 2018 SUT Technical Coefficient **

Tourism Industries / Products

- Accommodation services for visitors
- Food and beverage serving services
- Transport services
- Travel agencies and other reservation services
- Entertainment and recreation services

**Technical Coefficients for the use of Water, Electricity, and Petroleum and other fuel products of each of the industries from the 2018 SUT corresponding to the each of the tourism consumption products above
### General Methodology: Carbon Dioxide Emission

Energy consumption from the use of Electricity and Petroleum and other fuel products

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Conversion Factor from US EPA Greenhouse Gases Equivalencies Calculator
Tourism contributed **5.4%** to the Philippine Economy in 2020.

- Inbound tourism expenditure contributed **2.9%** to the total exports in 2020
- Employment in tourism industries shared **11.9%** to the total employment in 2020

Tourism was valued at **PhP 973.3 billion** in 2020, declined by **-61.2%** from 2019.
Performance of Tourism Industry

The average water consumption of tourism is 440.99 mil. m³ from 2012 to 2019. In 2020, water consumption of tourism is 109.62 mil. m³.
The average share of tourism to the total water consumption of the economy is 14.8 percent from 2012 to 2019. In 2020, water consumption of tourism is only 2.5 percent of the consumption of the economy.
Performance of Tourism Industry

The average energy consumption of tourism from the use of electricity and petroleum and other fuel products is 11,264.48 KTOE from 2012 to 2019. In 2020, energy consumption of tourism is 3,533.24 KTOE. Accommodation services for visitors accounts for an average of 48.71 percent of the energy consumption of tourism from the use of electricity and petroleum and other fuel products.

TOTAL ENERGY CONSUMPTION, 2012 TO 2020
IN KILOTONNES OF OIL EQUIVALENT (KTOE)
3 Performance of Tourism Industry

The average share of tourism to the total energy consumption of the economy from the use of electricity and petroleum and other fuel products is 16.6 percent from 2012 to 2019. In 2020, energy consumption of tourism from the use of electricity and petroleum and other fuel products is only 4.6 percent of the consumption of the economy.

![Chart showing the share of tourism to the total energy consumption of the economy, 2012 to 2020, in percent.](chart.png)
Performance of Tourism Industry

From 2012 to 2020, the average share of Domestic Tourism to the Total Water and Energy Consumption of Internal Tourism is 79.0 percent and 78.0 percent, respectively.
The average Carbon Dioxide (CO₂) emission from the use of petroleum and other fuel products and electricity of tourism is 13,292.94 Gg from 2012 to 2019. In 2020, CO₂ emission of tourism from the use of petroleum and other fuel products and electricity is 4,475.62 Gg.
Performance of Tourism Industry

The average share of tourism to the Carbon Dioxide (CO₂) emission of the economy from the use of electricity and petroleum and other fuel products is 19.7 percent from 2012 to 2019. In 2020, CO₂ emission of tourism is only 7.7 percent of the CO₂ emission of the economy from the use of electricity and petroleum and other fuel products.
Ways Forward

EXPLORE ALTERNATIVE DATA SOURCES TO ENHANCE MST COMPILATION
1. To study other data sources to supplement existing data used particularly on parameters and assumptions adopted in the present MST compilation

STRENGTHEN CURRENT METHODOLOGY AND VALIDATION PROCESS
2. To conduct continuous study and consultations towards further improvement and of the methodology and validation process
4 Ways Forward

ADVOCACY OF MST TO USERS FOR POLICY DEVELOPMENT
3. To conduct Users Forum to create awareness and build knowledge among users to further the applications of MST for policy development

EXPLORE AND IDENTIFY ADDITIONAL SUSTAINABILITY INDICATORS
4. To study and generate preliminary estimates on Solid Waste

5. To identify additional indicators to be explored, especially on the social aspect of sustainability in tourism
4 Ways Forward

INTEGRATE MST WITH EXISTING ENVIRONMENT & ECOSYSTEM ACCOUNTS and EXPAND COVERAGE FOR BETTER ANALYSIS

6. To integrate the results of the MST with the available Environmental Accounts on water, energy, etc.
Thank you!

http://www.psa.gov.ph

http://openstat.psa.gov.ph

https://twitter.com/PSAgovph

https://www.facebook.com/PhilippineStatisticsAuthority