

Tourism and Hospitality Sustainability Modules

Module 4: Resource Management, Climate Impact, and Environmental Conservation in Tourism

Overview

This module focuses on the environmental footprint of tourism and hospitality. Students examine how tourism activities, accommodation, food and beverage services, transport, attractions, and visitor behaviour place pressure on water, energy, waste systems, biodiversity, landscapes, and local environments.

The central idea of this module is responsible resource stewardship. Sustainable tourism is not only about reducing visible impacts such as waste, water use, or energy consumption; it also requires practical systems for measuring environmental performance, making evidence-based management decisions, verifying sustainability claims, and adapting to climate risk.

Students will consider how tourism businesses and destinations can reduce their footprint while still delivering quality visitor experiences and supporting business viability. The module also asks students to think about the relationship between tourism growth and environmental limits, especially in destinations facing water stress, waste pressure, coastal development, biodiversity loss, or climate vulnerability.

The emphasis is therefore on environmental management as an ongoing process: identifying resource pressures, monitoring impacts, assigning stakeholder responsibility, evaluating trade-offs, and improving practice over time.

Key SDG Links

- SDG 6: Clean Water and Sanitation
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth
- SDG 11: Sustainable Cities and Communities
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action
- SDG 14: Life Below Water
- SDG 15: Life on Land
- SDG 17: Partnerships for the Goals

Learning Objectives

By the end of this module, students should be able to:

- Identify the main environmental impacts of tourism and hospitality operations.

- Explain how water, energy, waste, biodiversity, emissions, and climate risk are connected to destination sustainability.
- Distinguish between superficial environmental claims and practical resource-management actions supported by evidence or indicators.
- Evaluate and justify environmental management strategies using sustainability indicators, stakeholder responsibilities, and evidence-based decision making.
- Evaluate trade-offs between environmental conservation, visitor experience, and business viability when designing tourism management strategies.
- Propose realistic conservation or resource-management actions for a tourism or hospitality setting and connect them to relevant SDGs.

Required Academic Reading

Students should choose one of the academic readings below and use it as a lens for the pre-class response.

- Gossling, S., Peeters, P., Hall, C. M., Ceron, J.-P., Dubois, G., Lehmann, L. V., & Scott, D. (2012). Tourism and water use: Supply, demand, and security. An international review. *Tourism Management*, 33(1), 1-15. <https://doi.org/10.1016/j.tourman.2011.03.015>
- Gossling, S., & Peeters, P. (2015). Assessing tourism's global environmental impact 1900-2050. *Journal of Sustainable Tourism*, 23(5), 639-659. <https://doi.org/10.1080/09669582.2015.1008500>
- Becken, S., & Simmons, D. G. (2002). Understanding energy consumption patterns of tourist attractions and activities in New Zealand. *Tourism Management*, 23(4), 343-354. [https://doi.org/10.1016/S0261-5177\(01\)00091-7](https://doi.org/10.1016/S0261-5177(01)00091-7)
- Buckley, R. (2012). Sustainable tourism: Research and reality. *Annals of Tourism Research*, 39(2), 528-546. <https://doi.org/10.1016/j.annals.2012.02.004>

Industry Practice Resource

Alongside the academic reading, educators may ask students to briefly consult one current industry framework or report. This helps students connect environmental sustainability theory to professional practice, especially around governance, measurement, monitoring, and accountability.

- WTTC. Hotel Sustainability Basics. Useful for identifying practical entry-level sustainability actions and basic performance areas for accommodation providers.
- GSTC. GSTC Destination Standard. Useful for thinking about destination-level governance, monitoring, stakeholder coordination, and environmental indicators.
- GSTC. GSTC Industry Criteria for Hotels and Tour Operators. Useful for connecting business-level practice to recognised sustainability criteria.

Students do not need to analyse the whole framework. They should identify one indicator, standard, or management principle that could help a tourism business or destination measure and improve environmental performance.

Pre-class Activities

Purpose

The pre-class activities prepare students to think about the environmental footprint of a tourism or hospitality experience. Students use one academic reading to identify where resource pressure is likely to appear and why environmental impact is a management problem rather than only a visitor-behaviour problem.

Students should also begin thinking about how environmental performance can be measured, monitored, and improved through management decisions.

Pre-class Activity 1: Reading Lens

Choose one academic reading from the list above. As you read, identify one concept that helps you think about tourism's environmental impacts. For example:

- water security
- energy consumption
- global tourism footprint
- visible and hidden impacts
- resource limits
- environmental indicators
- conservation pressure
- resource stewardship
- climate adaptation
- management versus individual responsibility
- evidence-based environmental management

Students do not need to master the entire reading. They should identify one useful idea and apply it to a tourism or hospitality setting. As you prepare, consider:

- How could this concept influence management decisions in a tourism business or destination?
- What evidence or data would be needed to confirm the environmental issue?
- How could technology support monitoring this environmental issue?
- Who is accountable for improving environmental performance?

Pre-class Activity 2: Environmental Footprint Snapshot

Choose one tourism or hospitality setting in Vietnam or Southeast Asia. You may choose from:

- a beach resort

- a city hotel
- a restaurant in a tourism district
- a cruise or boat tour
- an island destination
- a national park tour
- a heritage attraction with high visitor numbers
- a wildlife or nature-based tourism experience
- a conference or event venue
- a homestay or eco-lodge
- a theme park or entertainment attraction
- a destination familiar to you

Create a short Environmental Footprint Snapshot by answering:

- What resources does this setting use most heavily?
- Where might water use be high?
- Where might energy use be high?
- What types of waste are likely produced?
- Could tourism affect local biodiversity, landscapes, beaches, rivers, forests, or marine environments?
- What environmental issue would visitors notice?
- What environmental issue might be hidden from visitors?
- Which environmental impact is directly visible to visitors, and which remains largely invisible during the visitor experience?
- Which environmental issue is likely to become more severe under climate change?
- What evidence or data would help confirm this issue?
- How could technology support monitoring this issue?

Pre-class Activity 3: Short Written Response

Write 200-250 words and post to the class discussion forum before the session.

Respond to the following prompt: Use one idea from your academic reading to explain the most important environmental pressure in your chosen tourism or hospitality setting. In your response, include:

- the tourism or hospitality setting you selected
- the academic reading you used
- one concept from the reading
- one visible environmental impact
- one hidden environmental impact
- one stakeholder responsible for improving the situation

- one SDG that seems relevant
- one question you have about how environmental performance could be measured
- one piece of evidence or data that would help confirm the issue
- one realistic management action that could reduce the identified environmental pressure

In-class Activities

Activity 1: Visitor Journey Footprint Walkthrough

Goal: Help students understand how environmental impacts appear across the whole visitor experience and how environmental hotspots can be measured and managed.

In groups, students choose one tourism or hospitality setting from the pre-class activity and map the visitor journey from arrival to departure. Groups should consider:

- booking and pre-arrival communication
- transport to the destination or site
- arrival and check-in
- accommodation or site use
- food and beverage consumption
- activities, tours, or attractions
- water use
- energy use
- waste generation
- visitor movement inside the destination
- departure
- post-visit communication or feedback

For each stage, groups identify:

- one likely environmental impact
- whether the impact is visible or hidden
- who has the power to reduce it
- which SDG is connected to that impact
- which idea from the academic reading helps explain the issue
- one environmental indicator that could be used to monitor the impact

Possible indicators include:

- litres of water used per guest night
- kilowatt-hours of energy used per guest night or visitor
- kilograms of waste generated per visitor
- percentage of waste separated or recycled
- kilograms of food waste per service period

- carbon emissions per visitor, room night, or tour
- wastewater treatment quality or compliance
- number of visitors entering sensitive areas
- biodiversity disturbance reports
- resident or visitor complaints linked to environmental pressure

Groups should then identify the three biggest environmental hotspots in the visitor journey. For each hotspot, they should identify one indicator and the stakeholder with the greatest influence over reducing the impact.

Output: A simple Visitor Journey Footprint Map showing the main environmental hotspots, the SDGs connected to them, one academic concept used to support the analysis, one indicator for each hotspot, and the stakeholder most responsible for reducing the impact.

Activity 2: Resource Pressure Triage

Goal: Help students prioritise environmental issues rather than trying to solve everything at once, while distinguishing operational management from destination-level governance.

Using the same case, groups assess the following environmental pressure areas:

- water use
- energy use
- food waste
- single-use plastics
- wastewater
- solid waste
- carbon emissions
- biodiversity disturbance
- coastal or marine impact
- pressure on protected areas
- noise or light pollution
- visitor overcrowding
- land-use pressure

Groups must choose:

- the most urgent environmental pressure
- the pressure most visible to visitors
- the pressure most hidden from visitors
- the pressure most difficult for the business or destination to fix
- the pressure most connected to climate change

After choosing, groups discuss:

- Why is this issue urgent?
- Who contributes to it?
- Who is affected by it?
- What would happen if the destination ignored it?
- Which SDGs are most at risk?
- Which issue can the tourism business control directly?
- Which issue requires destination-level collaboration?
- What could happen if solving one environmental issue unintentionally creates another?

Output: A short Resource Pressure Triage Summary identifying the top environmental issue, the hidden issue, the issue most difficult to manage, one relevant academic idea, one issue that requires destination-level governance, and one possible unintended consequence.

Activity 3: People, Planet, Profit Action Plan

Goal: Move students from environmental diagnosis to realistic tourism and hospitality action using prioritisation, indicators, and evidence-based decision making.

Groups now develop a practical sustainability action plan for their case. Rather than selecting three actions independently, they first review possible actions and prioritise them using a simple matrix.

Possible actions:

- install water refill stations for visitors
- reduce single-use plastics
- introduce towel and linen reuse systems
- measure and reduce food waste
- improve waste separation and recycling
- switch to energy-efficient lighting and appliances
- use renewable energy where feasible
- improve wastewater treatment
- train staff in environmental practices
- educate visitors on responsible behaviour
- reduce buffet overproduction
- source food locally and seasonally
- create wildlife protection rules for visitors
- limit access to sensitive natural areas
- use booking systems to manage visitor flow
- support conservation projects through visitor fees
- partner with local environmental organisations
- communicate sustainability actions transparently
- monitor water and energy consumption monthly
- provide incentives for low-impact visitor choices

Action prioritisation matrix:

Action	Environmental impact	Feasibility	Cost or resources required	Priority	One-year success indicator

After completing the matrix, groups choose their three highest-priority actions. For each chosen action, groups explain:

- What environmental problem does this action address?
- Which stakeholder should lead it?
- What would it cost or require in practical terms?
- Which SDG does it support?
- How could the business or destination measure success?
- How will you know whether this action has been successful after one year?
- What trade-off or resistance might appear?
- Which actions can individual businesses solve, and which require destination-wide collaboration?

Groups should also explain how their actions balance people, planet, and profit. They should avoid proposing actions that are environmentally positive but unrealistic for the business, unfair to staff, or inconvenient in ways that visitors will not accept. They should also consider whether solving one environmental problem could create another environmental, social, or business challenge.

Output: A one-page People, Planet, Profit Action Plan with three prioritised actions, their SDG links, one academic concept used, one likely implementation challenge, one stakeholder responsibility, and one one-year success indicator.

Post-class Activities

Post-class Reflection

Students respond to the prompt: "Why is environmental sustainability in tourism a management responsibility rather than only a visitor responsibility?"

In their reflection, students should include:

- one environmental impact they had not previously considered
- one idea from the academic reading that helped them understand the issue

- one hidden resource issue in tourism or hospitality
- one action that seems realistic for businesses or destinations
- one SDG that became clearer through the module
- one trade-off between environmental protection and business growth
- one example of how governance, monitoring, or measurement helps ensure environmental sustainability is more than a one-off initiative