SOUTH PACIFIC TOURISM ORGANISATION

SUSTAINABILITY MONITORING PROGRAM

RESOURCE GUIDE FOR SUSTAINABILITY MANAGEMENT IN SOUTH PACIFIC ISLAND HOTELS

November, 2017

"RESOURCE GUIDE FOR SUSTAINABILITY MANAGEMENT IN SOUTH PACIFIC ISLAND HOTELS"

10YFP PROJECT

10-Year Framework of Programmes on Sustainable Consumption and Production

South Pacific Sustainable Tourism Enterprise Program

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In partnership with

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Introduction

In the following sections, this guide will introduce the South Pacific Tourism Organisation (SPTO) Sustainability Monitoring Program background and objectives, a business case for sustainability management in hotels, and the following eight themes for sustainability monitoring in hotels:

1. Energy Management
2. Water Management
3. Waste Management
4. Procurement
5. Employment
6. Pollution
7. Conservation
8. Cultural Heritage

Each theme will be presented in the following order:

- Rationale for monitoring and managing hotel impacts under theme
- Economic impact of sustainable management
- International benchmarks specific to the accommodation sector
- Best practices and new technologies available
- Indicators to be measured and monitored under the SPTO program, data collection sources and guidance

This resource guide is targeted at small, medium and large hotels participating in the SPTO Sustainability Monitoring Program. And aims to show where sustainable management of resources can lead to considerable cost savings, higher value quality customer experience, happier and healthier employees, and conservation of cultural and natural tourism assets for generations to come. This guide will also be useful in understanding the concept of indicator monitoring in hotels, how to measure, and the significance of each indicator.

SPTO Regional Monitoring Program

The South Pacific Tourism Organisation (SPTO) is the mandated regional inter-governmental body responsible for the marketing and development of tourism in the Pacific region. In 2015, the Council of Tourism Ministers for the Pacific approved the establishment of a new division within SPTO to spearhead regional programmes that support the efforts of National Tourism Offices (NTOs) and their national stakeholders including private sector, communities, other Government agencies and Non-Government Organisations in collectively building sustainable tourism destinations that bring economic benefits to its people, protects and preserves its environment and keeps its cultural practices intact.

In response to this mission, SPTO and Sustainable Travel International (STI), a not-for-profit organisation based in the United States of America, SPTO's sustainable development partner under the South Pacific Destination Alliance (SPDA) entered into an agreement in 2016 to implement a Sustainability Monitoring Program for the South Pacific from October 2016 to June 2018. The program focuses on effective resource management in hotels with funding support from the United Nations Environment Programme (UNEP) via the United Nations 10 Year Framework Program (UN 10YFP). This short-term project is demonstrated in Fiji and Samoa with the vision that the lessons learnt will help inform the replication of the program to the rest of the Pacific destinations in the future.

The initiative is aligned with two leading initiatives, which are spearheaded by the United Nations: Global Sustainable Development Goals and the UN 10 Year Framework Program (10YFP) on Sustainable Consumption and Production. It is also a core activity of SPTO in the implementation of the Pacific Tourism Strategy 2015-2019, Sustainable Tourism Planning focus area, which is also supported through the 'Improving Community Livelihoods through Public, Private Sector, People Partnerships in Green Tourism' Project funded by UNDP. At the national scale, the programme responds to the priorities outlines in the National Tourism Strategies and other relevant policies available at sector and industry level.

Program Objectives:

The specific objectives of the programme are to:

- collect, monitor, and report data on a small but practical set of sustainability indicators;
- provide clear motivation and incentive for tourism businesses to improve performance;
- collect baseline data to provide the foundation for making the business case for sustainability;
- identify risks, challenges and gaps for future interventions

Business Case for Sustainability

Environmental, Economic and Socio-Cultural Impacts from Hotels

In regions throughout the world, including tourism-dependent Small Island Developing States (SIDS), the hospitality sector is responsible for a tremendous array of impacts on the environmental, economic, and socio-cultural sustainability of the destinations in which they operate. This is because hotels require a consistent supply of resources such as water, electricity, and food, create waste in the forms of garbage and pollution, employ and sustain the livelihoods of local men and women, and connect guests to various natural and cultural attractions. Depending largely on the way they are managed and monitored, these impacts can skew negatively or positively on local communities and environments alike.

Sustainability issues are particularly salient for geographically isolated, low-lying island regions that are vulnerable to rising sea levels, water and air pollution, and other external impacts on their human settlements and ecologies. Therefore, as a key pillar of the tourism industry, the hospitality sector bears the responsibility of monitoring its sustainability efforts to minimize its potentially negative environmental, economic, and socio-cultural impacts.

Business Case for Sustainability

There are also compelling business arguments for hotels to be more environmentally, economically, and socio-culturally responsible. On the customer side, research has shown that travelers are increasingly demanding sustainably-oriented tourism businesses and are showing customer loyalty to such businesses. For instance, a recent consumer trends survey by ABTA, the UK's largest travel association, showed that 38% of customers expect their travel company to take a lead on sustainability and 20% are prepared to pay more for holidays from a company with a better environmental and social record.

On the supply side, sustainability measures can lead to a variety of direct and indirect cost savings that can directly impact a hotel's bottom line. Such savings can be achieved through minimizing waste production, utilizing renewable energy sources, purchasing locally made foods and products, and conserving natural and cultural tourist attractions. These efforts can together reduce expenses, produce long-term savings, and allow businesses to gain competitive advantage by being a leader in the sector. Moreover, responsible and authentic practices help to enhance a hotel's reputation and brand value, bring awards and media recognition, and serve marketing and public relations purposes.

The following are other potential benefits to be gained from sustainable practices, outlined in a report by the Center for Responsible Travel (2014):

- Manage risks and meet emerging legal and regulatory requirements
- Engage staff in Corporate Social Responsibility (CSR), which has proven to be a key driver of employee satisfaction and retention
- Gain competitive advantage by offering differentiating experiences to customers
- Protect your business by protecting the environment on which it depends

Value of Monitoring

Sustainability monitoring is an important tool for social, environmental and economic change. Monitoring is the organized (i.e. a plan is in place) and periodic (i.e. fixed time frames) measurement of key indicators of conditions for a particular business. Indicators relate to specific areas of information, and are a key aspect of monitoring.

Monitoring set indicators provides business owners with more information to then make better decisions and act in more responsible ways. Examples of indicators measuring a hotel's environmental impacts include the proportion of nonrenewable to renewable energy consumption, percentage of wastewater that is treated on-site, or total amount of waste sent to landfills.

"If you can't measure it, you can't manage it."

Given the hospitality industry's scale and cross-sector nature, measuring the range and depth of impacts matters to a large quantity and variety of stakeholders. Tracking and reporting the economic, environmental, and social impacts of hotel-related activities and projects, and their change over time, helps all stakeholder groups, including destinations, local communities, ecosystems, staff members, and guests.

Monitoring sustainability impacts helps these stakeholders to better:

- Measure and benchmark performance on sustainability measures (know if and how they're improving, both internally and against their competition)
- Identify and minimize risks or limitations
- Determine actions which could prevent future damaging impacts
- Demonstrate effective use of resources
- Predict future impacts and provide an early warning system for potential risks
- Sell and market (attract donors, partners, investments, customers)
- Communicate with other stakeholders about progress
- Raise awareness about impacts to customers, stakeholders, and staff
- Inform and educate
- Share and exchange knowledge and best practices

This sustainability monitoring guide is divided into eight themes and forty-nine indicators, crafted to help hotels track their efforts toward more responsible and sustainable operations and management goals.

Six steps to monitoring

1. Working from the action plan, check each task against the following:
   - Was progress checked and recorded?
   - Achievements to date
   - Problems encountered
   - Changes/further action required.
2. Consult regularly with staff responsible for each sustainability task.
3. Remember, some actions can only be reviewed at certain times e.g. reviewing energy reduction depends on billing periods (monthly or quarterly).
4. Reviews should take place at least annually. This will reflect changes to your business – consolidation, expansion, product developments or staff changes.
5. Store the monitoring data. You can use the reporting template to do this.
6. Reviewing progress so far, you can reflect on progress towards your broader sustainability objectives. Are they still relevant? Still realistic? Or do they need adjustment?

Once you've evaluated your results, you're ready to report them – internally to staff and externally to suppliers, stakeholders and customers.

Sustainability Monitoring Themes

- Energy Management
- Water Management
- Waste Management
- Procurement
- Employment
- Pollution
- Conservation
- Cultural Heritage

Sustainability Monitoring Themes

ENERGY MANAGEMENT

Tracking energy consumption in the hospitality sector is crucial toward achieving sustainable development and planning goals. In the South Pacific, a region dependent on high-priced imported oil and vulnerable to rising sea levels, energy costs frequently account for 25+% of a hotel's total operating costs. Therefore, there are compelling economic and environmental arguments to installing energy-efficient retrofitted designs and adopting renewable sources of energy production. Such options typically have short return-on-investments (ROIs) and are available in a wide array of innovative options at increasingly lower costs, serving as a viable option for hotels to reduce their energy footprints while saving large sums of money.

The arguments for adopting energy efficient and renewable energy technologies are myriad, particularly for Small Island Developing States (SIDS). Firstly are the potential cost savings from reduced consumption of petroleum, diesel, and other non-renewable sources, which must be imported from abroad at high tariffs. Second are reduced emissions of carbon dioxide, which contribute to climate change and its detrimental effects on SIDS. These include a rise in sea levels, increased ocean acidification and coastal erosion, higher instances of vector-borne diseases from increased temperature and flooding, damage to ecosystems and species diversity, reduced agricultural output and disruption in food supply, and more frequent/intense extreme weather patterns. Finally is the broader shift toward renewable energy sources among SIDS in the Pacific, including Fiji, Tonga, Vanuatu, and Tuvalu, which has resulted in more competitive costs for renewable technologies.

Effectively tracking energy consumption allows hotel managers to accurately measure their carbon footprint using the internationally recognized Hotel Carbon Measurement Initiative Framework (HCMI), developed for hotels throughout the world to consistently and universally report on their carbon emissions. Using this methodology will also allow hotel managers in the South Pacific to benchmark themselves against thousands of other hotels around the world and participate in the Global Sustainable Tourism Dashboard.

Indicators to be measured under Energy Management include:

- *Total Units of Non Renewable Electricity Consumed (#)*
- *Total Units of Renewable Electricity Consumed (#)*
- *Total Units of Propane Gas Consumed (#)*
- *Total Units of Fuel Consumed for Fleet Vehicles and/or Generators (#)*

ECONOMIC IMPACTS

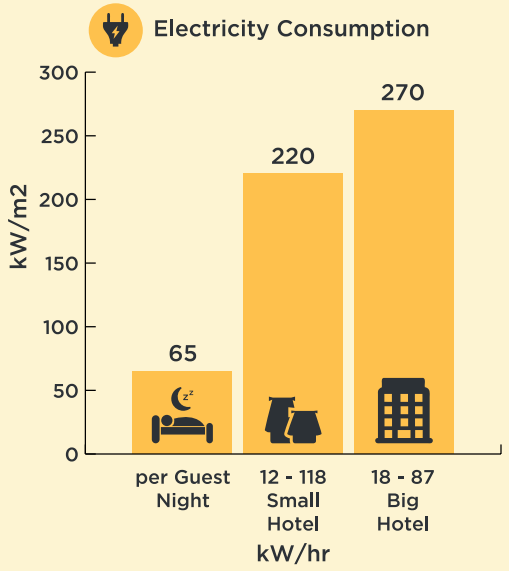
In general, a hotel's energy costs account for **4%-8%** of total operating costs, but it can be as high as **25%** or more for hotels located in areas with high **electricity tariffs and liquid fuel/ petroleum** costs like the Pacific Islands. When proper energy efficiency measures are taken, energy costs can be reduced by between **10% - 40%**

(International Institute for Energy Conservation, 2015).

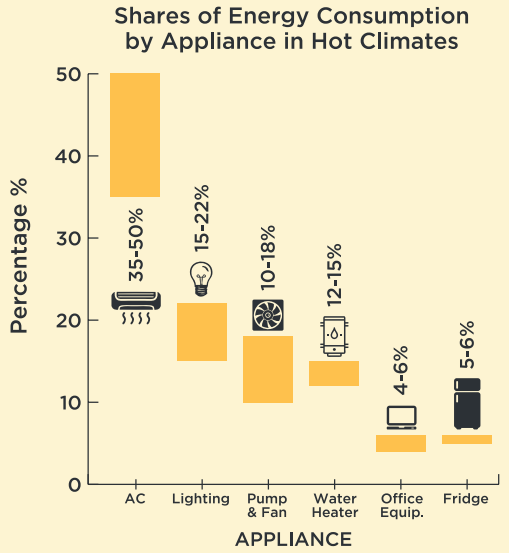
The following are examples of innovative technological practices adopted by hotels to reduce their electricity consumption, along with the cost or resources savings they achieved:

- At the Fairmont Dallas, installing tinted windows and digital thermostats in guest rooms resulted in **$50,000** savings in electricity costs annually *(Fairmont, 2008).*
- Several Australian hotels invested in the following technologies and benefited with significant economic savings:
  - Installing water efficient shower roses and a temperature setback system delivered annual costs savings of **$14,493**
  - Filling north facing rooms first delivered annual costs savings of **$16,416**
  - Installing timers on external lighting delivered annual cost savings of **$5,782**
  - Installing timers in hallways delivered annual costs savings of **$5,400** *(Government of Australia, 2001)*

INTERNATIONAL BENCHMARKS



(International Institute for Energy Conservation, 2015)



(International Institute for Energy Conservation, 2015; SPC & GIZ, 2016)

CO2 per Guest Night

(Global Sustainable Tourism Dashboard, 2016)

Percent of Hotels with On-site Renewable Energy

(Green Lodging Survey, 2016)

$$\text{SIMPLE PAYBACK} = \frac{\text{Cost of Investment - Financial Subsidy}}{\text{Annual Energy Savings - Operating Expenses}}$$

- A study of renewable energy costs in the Pacific Islands (Syngallakis, 2011) found that recent installed costs of solar photovoltaic systems are between 4.5 to 14 USD/W and the generation costs are in the range of 0.35 to 0.7 USD/kWh. This proves to be cost-competitive with the conventional electricity tariffs in Pacific Developing Member Countries (PDMCs), for which there exist many tax incentives and loan programs to support renewable energy installation *(IIEC, 2016).*
- The cost of air conditioning and water heating from renewable energy technologies (RETs) for island nations is considerably lower than costs from electricity generated from diesel for the same service. Meanwhile, solar photovoltaic (PV) systems can generate electricity less expensively than utility tariffs or self-generation from diesel in most islands *(SPC & GIZ, 2016).*

BEST PRACTICES & NEW TECHNOLOGIES

- **Adopting renewable energy sources** such as solar thermal energy, solar photovoltaic energy, biomass energy, seawater air conditioning systems (SWAC); micro-hydropower systems; small-scale wind energy; waste-to-energy systems (biogas, gasification of organic materials such as sugar cane, forestry resides, coconut, animal waste)
- **Developing staff training and guest incentivization programs** for lower energy-consumptive behaviors
- **Replacing electricity with natural gas** as a source of energy for the laundry and catering services, which has the potential to reduce the hotel's environmental impact, measured through greenhouse gas emissions, by approximately 40 percent
- **Adopting electric golf carts & other sustainable on-site transportation options** (bicycles, cleared paths for walking/hiking, canoes & kayaks, etc.)
- **Conducting management-level monitoring using performance indicators** through benchmarking and targets; conducting an energy audit; creating a hotel energy database for monitoring; developing and implementing an Energy Management Plan; considering eco-certification schemes (EarthCheck best for Pacific Island nations)
- **Reducing solar gain through the following retrofitting strategies:** use of polyester solar control film on windows and reflective white paint on roofs, which can be installed onto existing hotels at a low cost and can save hotels up to 155kWh of electricity per year; shading northern walls with roof overhang or eaves of 1.0 - 1.4 m in South Pacific; planting trees or vertical shadings for eastern and western sides; installing simple weather strips to stop air infiltration to AC-ed rooms

- **Adopting bioclimatic architectural design for buildings,** which "incorporates passive systems such as sun, air, wind, vegetation, water, soil and sky for heating, cooling and lighting" (SPC & GIZ, 2016). Examples, in greater detail in the SPC & GIZ (2016) report, include:
  - Building form
  - Building facade
  - Roof design
  - Thermal mass
  - Orientation
  - Landscape & shading
  - Building materials
  - Ventilation
  - Glazing & windows
  - Space

INDICATORS

GUIDANCE	DATA SOURCE	GUIDANCE
Total Units of Non Renewable Electricity Consumed (#)	Utility Bills Electricity Meter	This is typically the electricity purchased from an utility provider that is generated by coal, hydro, or nuclear power. Utility bills should include the KWh (or MJ) of electricity consumed or purchased over a given time period. Typical utility invoices occurs monthly so determine the consumption value and use that for your input. **Measurement Unit:** KWh **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Units of Renewable Electricity Consumed (#)	Utility Bills Electricity Meter	This includes on site electricity production from solar panels or wind turbines; it may also include the purchase of renewable energy credits from the utility provider is applicable. Renewable energy sources should include the KWh (or MJ) of electricity purchased over a given time period. Typical monitoring frequency is monthly so determine the consumption value and use that for your input. **Measurement Unit:** Kilograms (per tank) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Units of Propane Consumed (#)	Purchase Orders	Typically, Propane is delivered in tank holding various amounts of fuel. Use purchase orders to determine the size and number of tanks purchased then convert that into one single input value. The selection of the measurement unit should have been recorded in the Hotel Profile Form. In most cases, Propane is used for cooking is purchased in cylinders and measured in kilograms or liters. If applicable, record the total number of kilograms purchased not the number of cylinders. If natural gas is purchased directly from an utility provider, record the applicable amount consumed/purchased. **Measurement Unit:** Kilograms (per tank), Liters (per tank) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Units of Fuel Consumed for Fleet Vehicles and/or Generators (#)	Purchase Orders	This indicator aims to monitor the amount of petrol/diesel fuel that is being purchased/ consumed for fleet vehicles or other mobility related vehicles as well as generators used on-site. **Measurement Unit:** Liters **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals

CASE STUDY: SMUGGLERS COVE RESORT (NADI, VITI LEVU, FIJI)

Source: Smugglers Cove Resort homepage, 2016

An extensive energy audit conducted on this property yielded a variety of energy-saving recommendations, costing an total estimated FJD 56,000. However, the hotel found that cost savings would ultimately equal approximately FJD 49,000/year on their current electricity bill of FJD 181,003/year, resulting in an excellent estimated payback period of just over one year.

Thereafter, an **"Energy Management Plan"** working committee was formed by senior management and an energy management action plan was created, covering the following key areas:

- electrical work;
- improved maintenance on ACs, coolers, fridges and freezers;
- purchasing of new energy efficient equipment;
- energy efficiency monitoring by staff and trainings at staff meetings;
- marketing and promotion of renewable energy and efficiency work to guests.

Source: SPC & GIZ (2016)

WATER MANAGEMENT

Along with its high energy needs, the accommodation sector is being recognised for its high demand and use of freshwater, a limited yet vital resource in SIDS and other remote areas around the world. This calls for more widespread and systematic monitoring of water footprints, which can be used to illustrate the detrimental impact of the tourism sector and the need for conservation measures where needed.

If not properly managed, inefficient or wasteful water consumption can wreak havoc on neighboring communities and ecosystems who share those same resources. Improper disposal of untreated greywater and blackwater can also be highly polluting to waterways, stressing the need for greater adoption of water treatment and water recycling initiatives by hotels.

More and more, governments and consumers alike are becoming aware of the importance of and investment in water-saving programmes for the hospitality sector, with new technological developments offering solutions to various water-related issues and offering the potential for cost savings. The European Commission (2009) estimates that water efficiency measures can reduce water consumption in hotels by 40%, with an additional 10% reduction achievable through water recycling initiatives.

Indicators to be measured under Water Management include:

- *Total Units of Water from Metered Sources (#)*
- *Total Units of Water from Non-Metered Source (#)*
- *Total Units of Water Delivered (if applicable) (#)*

ECONOMIC IMPACTS

Water consumption can be a major economic cost for hotels, accounting for **10% of utility bills**, with many having to pay for the water they consume twice – first by purchasing fresh water and then by disposing of it as waste water. Freshwater needs of hotel can include maintenance of grounds through irrigation, room cleaning, laundry, maintenance of swimming pools, intensive kitchen activities, and guests' 'pleasure approach' to showers and baths

(Eurostat, 2009).

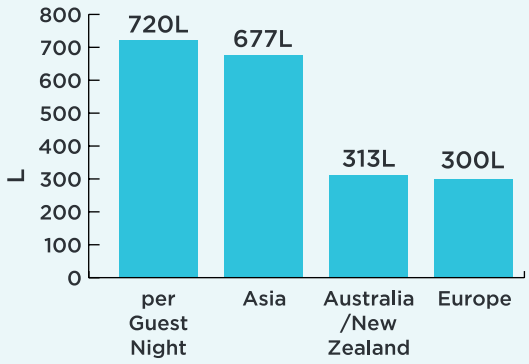
Selecting the most water-efficient fittings during construction or renovation does not cost much more and can result in water and water heating-energy savings of over 50%. Otherwise, retrofitting of water-efficient fittings is associated with payback times of months to up to 4 years in most cases (European Commission Joint Research Centre, 2013).

The following are examples of innovative technological practices adopted by hotels to reduce their water consumption, along with the cost or resources savings they achieved:

- The Holiday Inn in Flinders, Australia, recouped a AUD $22,000 (USD $19,500) investment in low-flow shower technology after 18 months and cut water usage by 50% (Green Hotelier, 2013).
- The Fairmont Royal York in Toronto saves 476,000 liters of water per day by having an installed water softener that reduces water use for laundry (Green Hotels and Responsible Tourism Initiative).

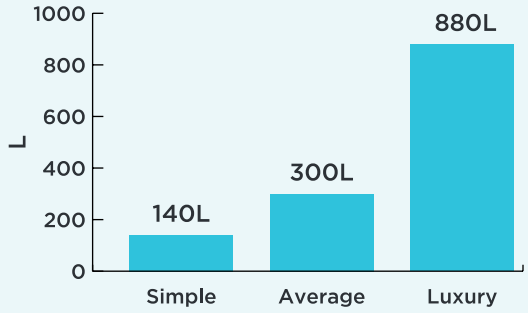
INTERNATIONAL BENCHMARKS

Total Water Consumption



(McLennan et al., 2014; European Commission Joint Research Centre, 2013)

Freshwater Consumption per Guest Night



(European Commission Joint Research Centre, 2013)

Percent of Hotels with Low-Flow Toilets, Faucets, Showerheads:

67%–73% GLOBALLY

(Green Lodging Survey, 2016)

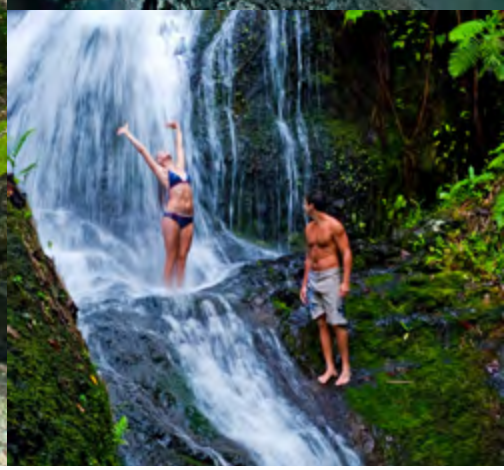
Percent of Hotels with Grey Water Reuse Systems in Asia-Pacific

(Green Lodging Survey, 2016)

- The Orchard Hotel in San Francisco installed low-flow toilets and showerheads, as well as flow restrictors, that reduced water consumption by 20 percent. The showerheads now generate a mere 1.5 gallons of water per minute, compared to the 2.3 gallons previously, with very few guests reportedly commenting negatively about the change (Oyster.com, 2015).
- At the 100-room NH Campo de Gibraltar Hotel, wastewater is collected separately from basins and showers, treated, and recirculated for toilet flushing, reducing potable water consumption by 20% (European Commission Joint Research Centre, 2013).

BEST PRACTICES & NEW TECHNOLOGIES

- **Installing water-efficient taps, showers, urinals and toilets.** A water efficient toilet will use 3-6 litres per flush instead of an average 11 litres, and a water efficient showerhead will reduce water flow to 9 litres per minute instead of 15 litres per minute
- **Providing signage in all guest rooms,** encouraging less frequent changing of towels & linens and shortening shower times to four minutes or less
- **Checking water meters** are recorded daily on-site and spreadsheets are used to monitor any abnormal usage pattern
- **Regularly maintaining all equipment** and show vigilance regarding water leaks
- **Installing a rainwater recycling system** that supplies internal water demand, or a greywater recycling system that supplies internal or external water demand, including non-potable usage such as for gardens and water features - greywater recycling systems that reuse wash water have been shown to trim approximately 23 percent of the total water consumption of some hotels
- **Adopting alternative technologies** such as low flush composting toilets, spring action faucets and showers, rain water catchments, and solar heated water systems



INDICATORS

GUIDANCE	DATA SOURCE	GUIDANCE
Total Units of Water from Metered Sources (#)	Utility Bills	Utility bills should include the Liters or Cubic Meters of water consumed or purchased over a given time period. Typical utility invoices occurs monthly so determine the consumption value and use that for your input. **Measurement Unit:** M3 (cubic meter) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Units of Water from Non-Metered Source (#)	Onsite Meter Purchase Orders	This is typically water that is not provided by an utility service such as a well or rainwater. Measurements here can be an estimate of the amount of water consumed recorded in Liters or Cubic Meters over a given time period. **Measurement Unit:** M3 (cubic meter) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals

GUIDANCE	DATA SOURCE	GUIDANCE
Total Units of Water Delivered (if applicable) (#)	Purchase Orders	Delivery of freshwater from outside sources should be kept to a minimum and limited only to guest consumption, given its high economic and environmental costs when compared to using municipal water or well water. If water is delivered, use the purchase order to record the volume. For example, if you have a 500 gallon cistern which is refilled with 200 gallons every month, your consumption is 200 gallons per month. **Measurement Unit:** M3 (cubic meter) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals

CASE STUDY: ENVIRONMENTAL AUDITS FOR SUSTAINABLE TOURISM (EAST) PROJECT (JAMAICA)

Small hotels participating in the Jamaican Government-sponsored EAST Project saw an average savings of US $913 per room after implementing a three-step Environmental Management System (EMS) incorporating a variety of novel water-saving technologies and action plans. These included the installation of water conservation devices, drip irrigation and low pressure sprinkler systems, sub-meters to monitor water use in key areas, and voluntary towel reuse programs in guestrooms.

Source: Global Water Partnership (2013)

Examples of savings include:

- *"One hotel saved more than USD $234,000 and reduced its water use per guest night by 50% in the first 18 months of implementing its EMS*
- *Five of the properties implementing an EMS realized a total cost savings of USD $620,000, with an average return on investment of 352%, and water savings of 41.4 million Imperial Gallons (IG) and 2,100 tons of CO2 emissions"*

Source: Global Water Partnership (2013)

WASTE MANAGEMENT

Tourism activities and accommodations generate substantial amounts of solid, liquid, and food waste, which all can negatively impact local destinations' ecosystems and wildlife, water quality, and community health. Dumping in landfills, the most common method of solid waste disposal, presents a variety of issues for hotels and destinations, including high disposal costs, wasteful land usage for sea-locked SIDS, visual/air pollution, among others.

Reducing waste in tourist accommodation through recycling, composting, and waste prevention initiatives can therefore bring co-benefits for energy use and air/water quality. Recycling of paper, plastics, metals, and other materials is an effective and direct method to reduce the amount of waste entering landfills. Meanwhile, perishable organic food waste can be composted through a variety of methods, thereby also reducing the amount of landfill waste as well as methane produced from its decomposition.

Fertilizer can be used to grow on-site kitchen gardens or be donated to local farmers, who in exchange can provide free or reduced-cost produce for restaurants. Food scraps can also be used to feed on-site animals, whose biogas can be converted into energy and heat.

In conclusion, proper waste management through consistent monitoring and reporting is an effective way for hotels to minimize waste production, thereby generating savings on disposal costs while protecting the health of local ecosystems and communities.

Indicators to be measured under Waste Management include:

- *Total Unsorted Waste (#)*
- *Total Waste Recycled (#)*
- *Total Waste Composted (#)*

ECONOMIC IMPACTS

Waste prevention can significantly reduce costs for both unnecessary procurement and waste disposal. Since most food waste can be composted, hotels are increasingly recognizing that composting is a better alternative to dumping food waste, given that composted waste can be used as fertilizer for on-site kitchen gardens or neighboring farms. Organic waste can represent **37%** of residual waste generated by accommodations and almost **50%** of residual waste generated by restaurants

(WRAP, 2011).

By removing paper, plastic, metals and other recyclables from their waste, hotels can trim their disposal bill by as much as **50%** — a significant savings where waste removal is expensive

(Green Hotelier, 2009).

The following are examples of innovative technological practices adopted by hotels to reduce their waste production, along with the cost or resources savings they achieved:

- At the University of Maryland University College Inn, of the 336 tons of waste generated in 2008, 10 percent was recycled (glass, metal, paper, cardboard), 32 percent was composted (food scraps, plant materials), and 52 percent was trash that ended up in landfills. The recycling and composting resulted in annual savings of USD $6,000 *(Environmental Leader, 2009).*
- The Four Seasons Philadelphia's composting program saves the hotel USD $4,800 annually, a 30 percent savings over throwing away food scraps. Composting organic waste costs just under $0.04 per pound, versus $0.06

INTERNATIONAL BENCHMARKS

(Global Sustainable Tourism Dashboard, 2016)

(European Commission Joint Research Centre, 2013; Green Lodging Survey, 2016)

Composting (EU):

diverted from landfill & sent for anaerobic digestion/ alternative energy recovery

(European Commission Joint Research Centre, 2013)

Percent of Hotels with Waste Audits

(European Commission Joint Research Centre, 2013)

per pound to send the waste to the landfill. In total, the hotel has decreased its landfill waste by 239 tons per year, a 23 percent reduction *(EPA, 2010).*

- The Hilton San Diego Bayfront Hotel's food waste composting program diverted an extra 11% of their waste stream in the first eight months, composting over 124 tons of food waste, and saving the hotel approximately USD $8,000 in landfill tipping fees and waste hauling costs *(CalCycle, 2015).*

- Strattons in the UK managed to save over UKP £16,000 in one year by reducing food and packaging waste, increasing recycling to 98% and making savings in other areas such as good housekeeping and water use *(Green Hotelier, 2014).*

BEST PRACTICES & NEW TECHNOLOGIES

Performing a waste audit by noting what type of waste is discarded in each area of the hotel. For each department, list all the disposed items, the disposal method, and the cost/quantities involved. Based on the results of the waste assessment, set up appropriate recycling programs in all areas. In addition, make sure that all receptacles and bins are well-marked for guests and staff to use.

Keeping staff informed about the best recycling procedures by issuing memos and periodically reviewing procedures, encouraging feedback for suggestions or observations as a means of continuing to improve waste management and recycling programs

Reviewing stock management and food delivery processes for food items with a short shelf life. Ensure stock is rotated as new deliveries come in (first in, first out). Store stock correctly at the right temperature, in the right packaging, labelled and with dates

Adopting liquid food composting systems decompose food waste and convert it to environmentally safe water within 24 hours, eliminating the need to truck food waste away

Adopting waste-to-energy systems, such as with biogas, gasification of organic materials such as sugar cane, forestry resides, coconut, and animal waste. "Successful use of waste to produce energy on a substantial and commercial basis is dependent on appropriate technologies, the size and type of waste resource available, availability of a suitable level of power initially, and the level of capacity to maintain the installation" (SOPAC, 2007)

INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Total Unsorted Waste (#)	Utility Bills Onsite Waste Stream Audit	This indicator measures one component of the solid waste footprint of the hotel. Keeping track of waste to landfill or waste recycled/reused is a means to assess the effectiveness of waste reduction initiatives. In some cases the weight or volume of waste collected by a waste hauler is available but in most cases these measurements must be done by the hotel. Measurement techniques include taking sample measurements throughout the day/month and from various departments to determine an estimate. The number of trash bins filled and emptied everyday is another option. **Measurement Unit:** Kilogram (weight), Cubic meter (volume) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Waste Recycled (#)	Utility Bills Onsite Waste Stream Audit	Recycling and or reusing items that would otherwise end up in the landfill or incinerated is one way to more effectively manage waste. This includes sorting plastics, glass, and or paper products. Measurement techniques include taking sample measurements throughout the day/month and from various departments to determine an estimate. The number of trash bins filled and emptied everyday is another option. **Measurement Unit:** Kilogram (weight), Cubic meter (volume) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total Waste Composted (#)	Utility Bills Onsite Waste Stream Audit	Composting food that would otherwise end up in the landfill or incinerated is one way to more effectively manage waste. Measurement techniques include taking sample measurements throughout the day/month and from various departments to determine an estimate. The number of trash bins filled and emptied everyday is another option. **Measurement Unit:** Kilogram (weight), Cubic meter (volume) **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals

CASE STUDY: BUCUTI & TARA BEACH RESORT (ARUBA)

This award-winning property is at the forefront of sustainable hospitality, and has undertaken a myriad of initiatives to improve its socio-cultural, economic, and environmental impacts on the small Caribbean island on which it is located.

Source: Bucuti & Tara Beach Resort homepage

Specifically pertaining to waste management, the property has adopted a variety of innovative measures, including the following:

- "Delivers as little as 40% of total waste to the Parkietenbos local landfill (a normal hotel would deliver 100%)
- Recycles and reuses 60% of its water, leading to high cost-savings on wastewater delivery
- Reduces food waste and delivers leftovers amounting to 300 kilos per day to local farmers
- Uses organic detergents and nontoxic chemicals
- Refrains from selling plastic bottles and ensures that every room receives aluminum water bottles
- Promotes recycling within rooms and organizes monthly beach cleanups encouraging individual guests to participate
- Organizes group clean-up events (of about 20 people) once a year
- Builds awareness on environmental preservation among guests and staff" (p. 13)

Source: Centre of Excellence for Sustainable Development of SIDS (COE) (2017)

PROCUREMENT

Responsible sourcing of produce and other products from organic and/or local suppliers can have tremendous ramifications for the economic and environmental sustainability of a destination. Purchasing locally supports the livelihoods and traditions of community farmers, producers, and artisans, and results in fresher food and more authentic products compared to those that are flown/shipped from abroad. Meanwhile, organic food production reduces the use of harmful chemicals and pesticides while protecting soil health and local ecosystems. Together, these can result in lower purchasing costs and greater marketing and branding appeal for sustainability-minded guests. These benefits are also particularly salient for SIDS, where a significant proportion of products are imported from abroad and therefore higher in price & carbon footprint.

With an increasing number of informed tourists demanding authenticity in their travel experiences, which includes ethical sourcing of local ingredients and traditional arts & crafts, there also lies much marketing and branding value for hotels to responsibly purchase their products and provide guests with "farm-to-table" dining experiences. Therefore, monitoring procurement from producers who fit these criteria is vital both for the sustainability of the local destination as well as the marketing appeal to guests seeking authentic experiences.

Indicators to be measured under Procurement include:

- *Total spent on perishable produce and fruit*
- *Total spent on perishable organic produce and fruit*
- *Total spent on perishable produce and fruit bought directly from local farmers*
- *Total spent on ocean products bought directly from local independent fisherman*
- *Total spent on animal based products that come from a sustainable source*
- *Total equivalent dollar value of perishable produce and fruit grown onsite and used for operations*
- *Total spent on non-perishable agricultural products*
- *Total spent on non-perishable organic agricultural products*
- *Total spent on all chemical products*
- *Total spent on environmentally friendly chemical products*
- *Total spent on linens that were produced locally*

ECONOMIC IMPACTS

When done carefully, sustainable procurement from local and/or organic producers can prove to be a cost savings and quality assurance method for hotels, particularly on SIDS where many products must be imported from abroad at high tarriffs. Responsible procurement can start with finding cost-positive/neutral options from local suppliers or creation of an on-site garden for produce, followed by more strict certified ingredients that come with a price premium. In some cases, costs incurred from ethical procurement can be offset by increased market value for products that are branded as "authentic" or "locally sourced"

(European Commission Joint Research Centre, 2013).

Sourcing locally for core business activities can also create profound ripple effects on the local economy by expanding economic opportunities for a variety of sectors. These can include food, furnishings, guest amenities, and gift store products. Moreover, auxiliary services such as laundry, gardening, transportation, maintenance, and construction can also be contracted to local companies, providing short- and long-term employment and income generation opportunities for men and women in the community. According to a Harvard University report, even a small increase in local procurement can oftentimes create more economic opportunity for communities than would through philanthropy

(Ashley et al., 2007).

The following are ways in which hotels can simultaneously save on procurement costs, support local producers, and appeal to responsibility-minded guests.

- Securing **reliable and stable local supply chains** for a variety of goods and services (food, furnishings, amenities, gift store products, laundry, gardening, transportation, maintenance, construction)
- Improving **relations with local farmers and producers**, bettering reputation in the community
- **CSR (Corporate Social Responsibility) initiatives** for marketing appeal to informed guests
- **Food quality considerations** of organic/local vs. conventional/ imported produce
- **Product & service differentiation** and **green marketing**

INTERNATIONAL BENCHMARKS

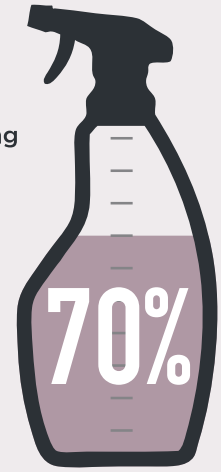
Food & drink products certified according to basic environmental standards (EU):

Certified according to high environmental standards:

(European Commission Joint Research Centre, 2013)

Chemical cleaning products for dishwashing and cleaning are ecolabelled (EU)

(European Commission Joint Research Centre, 2013)



Percent of Hotels with Sustainable Supplier Requirements

(Green Lodging Survey, 2016)

Percent of Hotels with Local Procurement Policies

(Green Lodging Survey, 2016)

BEST PRACTICES & NEW TECHNOLOGIES

Prioritizing purchasing fresh seasonal produce, which typically lasts longer. The quality of produce that is in-season is usually better, as it has not been stored for long periods or travelled great distances

Tracking finances spent on products sourced from local farmers and producers, with goal of increasing consumption compared to products shipped from abroad

Reviewing stock management and food delivery processes for food items with a short shelf life. Ensure stock is rotated as new deliveries come in (first in, first out). Store stock correctly at the right temperature, in the right packaging, labelled and with dates

Assessing food and drink supply chains to identify environmental hotspots and key control points, including choice editing of menus to avoid particularly damaging ingredients (e.g. some out-of-season fruit), and selection of environmentally-certified products

INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Total spent on perishable produce and fruit	Purchase Orders	Monitoring the total spent on all perishable produce and fruit in contrast to organic allows hotels to track their ratio of organic-to-conventional produce purchasing. The ultimate goal should be to maximize purchasing of locally grown, organic produce when available. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total spent on perishable organic produce and fruit	Purchase Orders	Organic production of produce and fruit means avoiding harmful chemicals and pesticides, reduced chemical runoff into waterways, improved soil health for farmers, and healthier food for guest consumption. This indicator should only record produce and fruit from a confirmed organic farm. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals

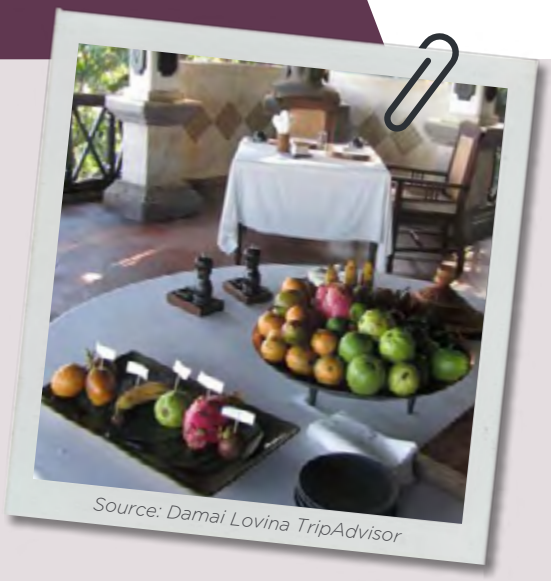
INDICATOR		GUIDANCE
Total spent on perishable produce and fruit bought directly from local farmers	Purchase Orders	Purchasing from local farmers supports their livelihoods while ensuring fresher produce and a better dining experience for guests. This indicator should only record produce and fruit purchased directly from farmers (opposed to purchases made a super market). **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total spent on ocean products bought directly from local independent fisherman	Purchase Orders	Purchasing from local fishermen supports their livelihoods while ensuring fresher seafood and a better dining experience for guests. This indicators should only record ocean products purchased from independent fisherman. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total spent on animal based products that come from a sustainable source	Purchase Orders	This indicator is meant to track the proportion of meat products coming from sustainable sources. As with produce and fruit, sustainably grown meats are better for the environment, animals, and consumers alike. This indicators should only record animal based products purchased directly from a confirmed sustainable source. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals
Total equivalent dollar value of perishable produce and fruit grown onsite and used for operations	Purchase Orders	Growing locally saves hotels on import and transportation costs, reduces carbon emissions, and appeals to guests who are attracted to "farm/garden-to-table" foods. Utilizing compost created by food waste is an additional step to further promote onsite vegetable/fruit growing initiatives. The purpose of this indicator is to illustrate the economic value of growing your food. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals"

Total spent on non-perishable agricultural products	Purchase Orders	"Non-perishable agricultural products include coffee, tea, rice, flour and other similar products. Monitoring this indicator in contrast to organic product purchases can allow hotels to track their ratio of organic-to-conventional purchasing. The ultimate goal should be to maximize purchasing of locally grown, organic agricultural products. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals"
Total spent on non-perishable organic agricultural products	Purchase Orders	"As with produce, organic production of other agricultural products means avoiding harmful chemicals and pesticides, reduced chemical run-off into waterways, improved soil health for farmers, and healthier food for guest consumption. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals"
Total spent on all chemical products	Purchase Orders	"Monitoring the total spent on all chemical products in contrast to eco-friendly chemical products allows hotels to track their ratio of ""sustainable"" chemical purchasing. Monitoring use of standard chemical products should be done to minimize their usage and seek non-toxic, biodegradable, environmentally-friendly alternatives. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals"
Total spent on environmentally friendly chemical products	Purchase Orders	"Non-toxic, biodegradable, environmentally-friendly products for cleaning and sanitizing are better for guest & staff health as well as the environment, with a variety of options available on the market. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals"
Total spent on linens that were produced locally	Purchase Orders	"Purchasing locally produced linens means supporting community members, lower costs, and marketing appeal related to traditional linen production. **Measurement Unit:** $ **Frequency:** Data entry should occur once a quarter and be recorded in monthly intervals "

CASE STUDY: DAMAI LOVINA VILLAS BALI (INDONESIA)

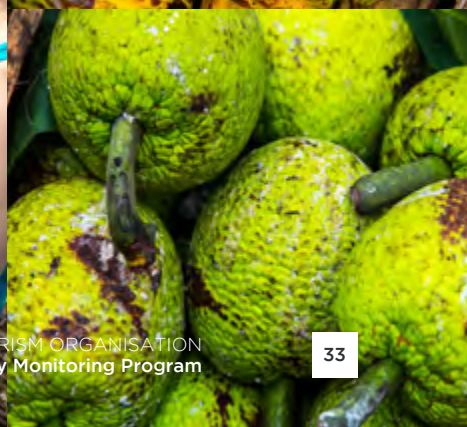
Aside from undertaking cost-saving waste and energy-reducing initiatives, this property has taken a variety of efforts with responsible procurement. Among them include:

- Partnering with a local research center that provides the resort with environmentally safe agricultural and household products
- The resort's restaurant sources 80% of its ingredients from an on-site organic garden as well as from local farms
- In practicing sustainable farming techniques, such as permaculture to reduce water consumption and improve crop health & composting instead of chemical fertilizers, the farm was able to reduce crop production costs by 90% and increase crop production by 20%



Source: Damai Lovina TripAdvisor

Source: Green Hotels and Responsible Tourism Initiative (2010)



EMPLOYMENT

Gender, racial, and accessibility equality of staff remains an issue throughout the hospitality sector, particularly within organizational leadership and year-round employment. Diversity of staff is key to the moral integrity and economic success of any tourism or hospitality enterprise. Therefore, proactive hiring policies that target minority populations and implementing protections from workplace discrimination are vital to achieving a more equitable, diverse, and thriving workplace.

Hiring and promoting greater numbers of women & members of minority populations, along with implementing sound employment policies, can help improve a hotel's image as an 'employer of choice' and improve relationships with the local community. Moreover, studies have shown that higher diversity in an organization's staff can lead to better productivity, greater innovation, and more creative thinking for problem-solving. With many hotels on SIDS hiring international staff from abroad rather than training and hiring locally, incomes are not kept in the local economy and community members are left without employment or transferable skills. Moreover, the provision of stable employment opportunities, fair wages, and reasonable working schedules and conditions are all key toward sustaining the livelihoods of local people, and together support the concept of "happy employees, happy customers."

Therefore, monitoring employment rates of marginalized and local populations as well as equitable workplace practices ensures equal economic opportunities for all.

Indicators to be measured under Employment include:

- *Number of SALARIED men on staff*
- *Number of SALARIED women on staff*
- *Number of NON-SALARIED men on staff*
- *Number of NON-SALARIED women on staff*
- *Number of women in management positions*
- *Number of international staff*
- *Number of international staff in management positions*
- *Number of employees with disabilities*
- *Number of seasonal staff*
- *Number of employees who participated in professional training while on staff*

ECONOMIC IMPACTS

Including a more diverse array of staff members can also improve productivity and innovation by bringing in novel methods of working, strengthening team dynamics, and improving decision-making. Case studies and research from around the world demonstrate how higher staff diversity is correlated with better team performance, sales revenue, market growth, and profits (Hegewisch et al., 2013). This can ultimately lead to higher economic outputs and greater brand appeal toward future employees and guests alike.

Given that women and minority populations alike are often not equally represented in the workforce and may face workplace discrimination, there is a strong need to address gender employment gaps, as well as those affecting other minority populations, such that capable employees of all backgrounds have equal opportunity for work and income.

Specific economic benefits that can be conferred from equal employment initiatives include:

- **Mitigating business risks** such as security, reputation, and regulatory/policy risks
- **Building business opportunities** through improved staff morale, a more diverse array of products, and improved community attitudes toward tourists
- **Building brand uniqueness** through diverse hiring schemes
- **Increased access to international funds** from women's/minority rights organizations
- **Enabling employees to develop transferable skills**
- **Obtaining higher quality goods and services** that meet quality/quantity/reliability requirements

(Ashley et al., 2007)

BEST PRACTICES & NEW TECHNOLOGIES

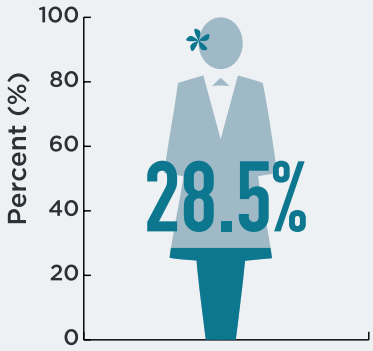
- **Creating "Inclusive Business Models"** via
  - Improving employment practices (reasonable wages, working hours, job security)
  - Creating business linkages to local tourism products & services
  - Procuring local supplies and services
  - Establishing community revenue or profit-sharing schemes
  - Sharing distribution of opportunities among different groups
- Identifying **employment opportunities suited for marginalized individuals** (e.g. handicapped staff members)
- Actively **targeting hiring initiatives toward women and other minority populations.** Doing so can serve as the first step in creating community awareness about employment opportunities in hospitality
- **Developing and enforcing gender-sensitized policies and frameworks**, such as women/family-friendly working conditions (i.e. childcare and health programs for women)
- Providing **tailored training resources for marginalized** communities

INTERNATIONAL BENCHMARKS

Percent of female and male employment in tourism

(Global Sustainable Tourism Dashboard, 2016)

Average share of women in tourism management positions



(Global Sustainable Tourism Dashboard, 2016)

Percent of Hotels operating Staff Training on Sustainability

(Green Lodging Survey, 2016)

INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Number of SALARIED men on staff	Staff Records	This indicator is measured bi-annually. Hotels will make note of the total staff for this indicator over the course of six months and record it accordingly. The monitoring results will use an average of the course of a year for the annual results. This standard measurement can be particularly powerful when compared with percentages in other sectors. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of SALARIED women on staff	Staff Records	This indicator is measured bi-annually. Hotels will make note of the total staff for this indicator over the course of six months and record it accordingly. The monitoring results will use an average of the course of a year for the annual results. This indicator will report equitable representation at varying levels tourism employment, including management positions. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of NON-SALARIED men on staff	Staff Records	This indicator is measured bi-annually. Hotels will make note of the total staff for this indicator over the course of six months and record it accordingly. The monitoring results will use an average of the course of a year for the annual results. Monitoring the ratio of full-time vs part-time staff is vital to tracking where full-time opportunities are available, thereby sustaining the livelihoods of staff members & their families. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

Number of NON-SALARIED women on staff	Staff Records	This indicator is measured bi-annually. Hotels will make note of the total staff for this indicator over the course of six months and record it accordingly. The monitoring results will use an average of the course of a year for the annual results. Monitoring the ratio of full-time vs part-time staff is vital to tracking where full-time opportunities are available, thereby sustaining the livelihoods of staff members & their families. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of women in management positions	Staff Records	Where the percentage of women in managerial positions is dramatically less than the percentage of women in the sector, particularly when compared with other sectors, programmes should be developed to help recruit and support women moving up the career ladder. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of international staff	Staff Records	Whenever possible, local staff should be hired, trained, and promoted to fill positions typically hired by staff with expertise from abroad. This ensures that payrolls stay in the community and locals are given skills training that are transferable to other hotels or other tourism-related sectors. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of international staff in management positions	Staff Records	Management positions should not be withheld to only international staff, and granting local staff members with equal opportunities to train for & hold top leadership positions boosts staff morale and supports local livelihoods. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

Number of employees with disabilities	Staff Records	It is important for a destination to be able to accommodate people with disabilities. This measurement will help raise awareness of the accessibility of the destination. Where the percentage is very low, it may also draw the attention of hoteliers who identify a market opportunity. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of seasonal staff	Staff Records	Seasonal employment, while better than unemployment, hinders the economic livelihoods of community members through temporary employment. Monitoring the ratio of seasonal to full-time staff ensures that more and more staff members hold year-round jobs. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Number of employees who participated in professional training while on staff	Staff Records	"Provision of professional training gives staff transferrable skills, improves customer service quality, protects the health/well-being/safety of guests, and ensures hotels can obtain goods and services that meet quality/quantity/reliability requirements. **Measurement Unit:** # of staff **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time "

CASE STUDY: STARWOOD HOTELS & RESORTS AND THE HACIENDAS OF THE MAYAN WORLD FOUNDATION (MEXICO)

The Haciendas of the Mayan World Foundation Project, in collaboration with Starwood Hotels & Resorts, was a luxury tourist accommodation project involving the rebuilding of historic haciendas (large estates) to then serve as hotels. This project supported the employment opportunities for local community members in the following ways:

- Boosted local employment both in the construction phase and in permanent hotel positions, both of which provided working conditions than other local forms of employment, such as agricultural labor, and also provided personal development opportunities such as staff training that includes English, computer literacy, and hospitality skills
- Supported local health programs for staff and their families, not only building the human capital assets of Haciendas employees, but also improving service delivery in the hotels
- Approximately 90-100% of the Haciendas' employees came from surrounding villages.

Source: The Haciendas Yucatan homepage

- Trained 21 masseuses from four local communities, who earned twice the Mexican minimum wage
- Set up 17 micro-enterprise development workshops to revive traditional handicrafts to be used or sold on-property, providing jobs for approximately 180 women
- Creation of a Civil Corporation and Community Savings Fund for different community development projects

Source: Ashely et al. (2007)

POLLUTION

stormwater runoff, and air quality is fundamental to maintaining the ecological integrity, community health, and general enjoyability at a destination. Given that SIDS are highly susceptible to erosion from climate change and have sensitive, geographically isolated water systems, there is a pressing need for the accommodation sector to consistently and properly monitor, report, and manage wastewater, stormwater runoff, and other sources of pollution.

One major source of stormwater runoff and water contamination are impervious surfaces, such as concrete structures, parking lots, and paved surfaces. These impermeable surfaces can disrupt natural hydrological cycles and also contribute to the urban heat effect. Moreover, resulting stormwater runoff can lead a variety of issues, including poor water quality, erosion and degraded wildlife habitats. In contrast, permeable surfaces naturally pass water into the soil, reduce heat buildup in the area, and allow the soil to filter out contaminants, thereby preventing pollutants and sediments from turning into runoff. For reference, LEED-certified homes must have 70% of buildable land be permeable (US Green Building Council, 2017).

Proper wastewater treatment, combined with greater adoption of porous surfaces and low-emissions vehicles, ensures the maintenance of high local air/water quality and the conservation of habitats for biodiversity and amenity value. Such efforts can help hotels ensure the health of ecological attractions and local communities as well as maintain a clean and pleasant environment for guests. Monitoring this information helps to identify and treat problem areas where they exist.

Indicators to be measured under Pollution include:

- *Percentage of property that is developed and has an impermeable surface*
- *Percentage of property that is a permeable surface*
- *Percentage of wastewater treated onsite or offsite*
- *Percentage of wastewater directly discharged untreated*
- *Percentage of vehicles using low emission engines*

ECONOMIC IMPACTS

Untreated wastewater and uncontrolled use of marine craft can have detrimental effects on the surrounding environment, including coastal reefs, and on the health of residents in the surrounding community. Separately, the process of soil sealing (building impermeable surfaces for construction needs) can lead to a variety of detrimental effects on the environment, including decreased rain absorption into the ground, which can lead to increased flooding and stormwater contamination of local water resources; limiting migration paths for wildlife and affecting natural habitats; increased risk of erosion; and worsened risk of urban heat effect, which can negatively affect quality of living in urban areas. Together, these can lead to significant negative economic effects on local businesses and communities who rely on clean water, thriving ecosystems, and healthy residents.

In contrast, proper water treatment reduces overall water consumption through reuse and recycling, helping with availability of fresh water for other community members. Adequate wastewater treatment can also ensure the maintenance of high water quality in surface water bodies, delivering the full suite of potential ecosystem services, including habitat provision for biodiversity and amenity value. Meanwhile, the use of permeable pavement often results in lower overall construction costs due to elimination of the need for other stormwater management measures.

The following are measures that hotels can take to mitigate their impact on local water and land resources through reductions of wastewater production and runoff.

INTERNATIONAL BENCHMARKS

Wastewater that receives secondary/tertiary treatment for discharge (EU):

≥95%

(European Commission Joint Research Centre, 2013)

On-site wastewater treatment that includes pre-treatment & biological treatment (EU):

≥95%

with BOD5 removal,

>90%

with nitrification and (off-site) anaerobic digestion of excess

(European Commission Joint Research Centre, 2013)

BEST PRACTICES & NEW TECHNOLOGIES

- **Adopting a greater percentage of permeable surfaces** through the following measures: hire a contractor with specialized pervious pavement experience to conduct a geotechnical analysis to determine its feasibility; implement erosion and sediment control of surrounding areas; develop inspection and maintenance plans; install signage to communicate restrictions on land usage (Sustainable Cities Institute, 2013)

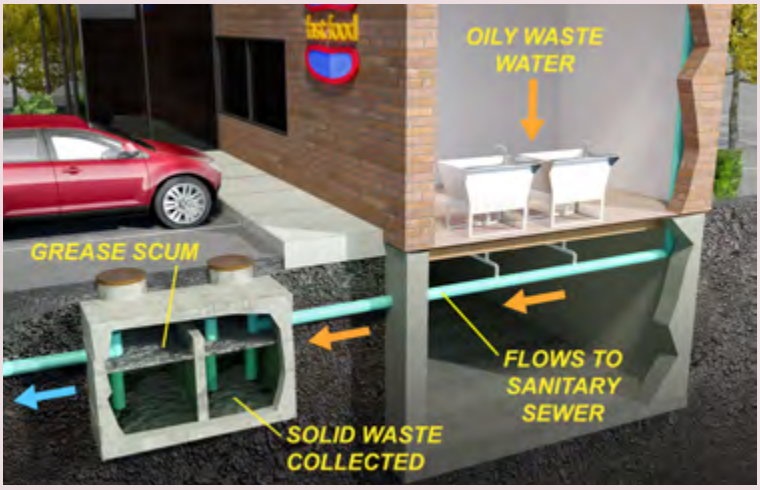
- **Practicing proper wastewater treatment methods**, including the following most commonly employed by small hotels:
  - Sand Filters
  - Primary Treatment
  - Septic Tanks
  - Waste Stabilization Ponds

- **Installing an on-site wastewater treatment system** that treats wastewater at least to secondary, and preferably to tertiary, level. This includes pre-treatment to screen solids and settle particulate matter followed by efficient biological treatment (e.g. in a sequencing batch reactor) to remove COD, BOD, nitrogen and phosphorus from the final effluent. Sludge can then be treated and disposed of in an environmentally friendly manner.

- **Using greywater recycling systems** that reuse wash water, which have been shown to trim approximately 23 percent of the total water consumption of some hotels. The payback period of these systems is around 14 years, depending on the size and location of the property

- **Constructing a water recycling plant**, which for one hotel produces 1,000 tons of recycled water daily from kitchen sewage, can be utilized in garden or staff lavatories

- **Installing grease traps and interceptors** in restaurant kitchen sink systems to reduce clogging and other problems with sewage disposal & public sewer systems caused by oil and grease. More information here: barnstablecountyhealth.org/resources/publications/compendium-of-information-on-alternative-onsite-septic-system-technology/grease-and-oil-in-restaurant-wastewater



INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Percentage of property that is developed and has an impermeable surface	Property Map	Impervious surfaces can pose many problems for local waterways and ground temperatures. Stormwater runoff created on such surfaces can lead to poor water quality, erosion and degraded wildlife habitats. Therefore, monitoring its prevalence on a hotel's property and considering future adoption of permeable surfaces instead is vital to mitigate these effects. **Measurement Unit:** % **Frequency:** Data entry will occur once at the beginning of the monitoring program
Percentage of property that is a permeable surface	Property Map	In contrast to impermeable surfaces, permeable surfaces are significantly better for preventing erosion, water pollution, and wildlife degradation. Hotels should take efforts to construct greater amounts of permeable surfaces whenever possible. **Measurement Unit:** % **Frequency:** Data entry will occur once at the beginning of the monitoring program
Percentage of wastewater treated onsite or offsite	Sewage treatment and discharge maps	Where this is low, actions for increasing the coverage of central sewage treatment should be explored to protect the long-term health of the destination, its residents and visitors. **Measurement Unit:** % **Frequency:** Data entry will occur once at the beginning of the monitoring program
Percentage of wastewater directly discharged untreated	Sewage treatment and discharge maps	Central sewage or tertiary systems are the most effective in reducing water-borne pollutants. Raising awareness of the scale of this issue in the destination is the first step towards finding a solution. **Measurement Unit:** % **Frequency:** Data entry will occur once at the beginning of the monitoring program
Percentage of vehicles using low emission engines	Vehicle Log	Low emissions from on-site vehicles preserves good air quality for guests and communities while lowering carbon emissions. **Measurement Unit:** % **Frequency:** Data entry will occur once at the beginning of the monitoring program

CASE STUDY: SANDALS GRANDE RESORT & SPA (ANTIGUA)

At this 373-room property, 545,000–590,000 liters of water is used for daily operations and water usage per guest is estimated to be 720 liters/day. Given its high water footprint, the hotel employs an aerobic wastewater treatment system to filter, treat, and recycle 365,000 – 410,000 liters, or about 33% of total water usage, to be reused for garden irrigation on the property (Sandals, 2013).

Moreover, the hotel recently adopted a novel Aqua Recycle Plant to treat and recycle laundry water, reducing water consumption from its laundry operations by up to 70%.

Source: Peters (2015), AHTA (2015)

Source: AHTA, 2015

CONSERVATION

Protected areas are crucial for development control and wildlife conservation, and also often serve as major tourist attractions. Therefore, their degradation can have detrimental effects on tourism demand as well as the greater ecological integrity & health of the region.

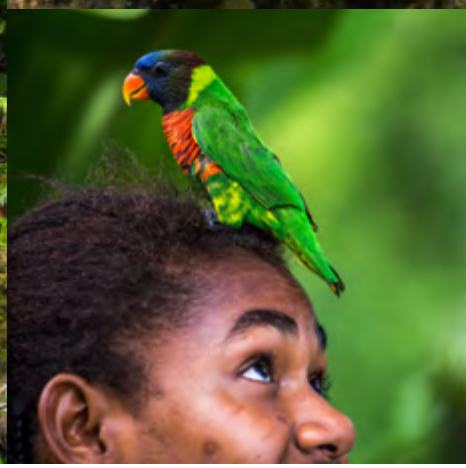
Of greater or equal value for SIDS economies are beaches and other coastal environments, which are under threat by pollution and coastal erosion. In such types of areas, damage to dunes, wetlands, mangroves, and other natural habitats for development or better views/access to beaches can threaten the the health of birds, fish, mammals, coral reefs, and local communities through runoff. Filling of wetlands and salt ponds can also reduce water circulation and nutrient flow to coastal regions, while mangrove destruction can threaten local fish populations and therefore the livelihoods and food security of local communities.

Through consistent monitoring of local protected areas and nearby coastal areas as well through proper guest management, hotels can do their part to mitigate risks toward these sensitive ecosystems while ensuring demand from nature-seeking guests. One method to achieve this is through informational measures to tourists regarding sustainable behaviors and proper interaction in wildlife areas.

Measurement of this indicator demonstrates the level to which hotels demonstrate commitment to environmental protection and recognise the significance of their local biodiversity.

Indicators to be measured under Conservation include:

- *Actions taken to reduce water consumption*
- *Water Reduction - List actions taken*
- *Actions taken on reduce impacts on coastal zones*
- *Coastal Zone - List actions taken*
- *Actions taken to inform tourist of sustainable interaction with reef and marine habitats*
- *Marine BPs - List actions taken*
- *Actions taken to inform tourist of sustainable behavior in protected areas*
- *Protected Area BPs - List actions taken*
- *Total Number of Rooms Using Water Efficiency Technology*



ECONOMIC IMPACTS

The direct link between nature conservation and accommodations is visitor demand for tourism activities in protected areas and coastal environments. Their visitation to destinations and spending, therefore, depends largely on the preservation and health of surrounding terrestrial and marine environments, including the vast majority of SIDS.

Over-visitation or development of vulnerable areas, combined with mismanaged pollution, can accelerate the decline of natural habitats and their resources. These areas can include beaches, mountain forests, mangroves, wetlands, coral reefs, fisheries, and a myriad of other coastal, marine, and terrestrial resources. These sensitive ecosystems face increasing vulnerability to threats such as beach loss, habitat loss and natural hazards, many of which can be caused directly by the hospitality industry. Additional societal costs caused by these various threats include resource opportunity lost, reduced commercial value of sites, and negative impacts on local communities *(IUCN, 2012; UNEP, 2013).*

The following are strategies that hotels can enact to further natural environment management and conservation schemes:

- Investing in security measures from erosion, thereby providing security from eventual risks and hazards
- Supporting sustainable tourism activities for long-term income generation
- Promoting environmentally-friendly technologies and cleaner production for future cost savings
- Adding brand value to tourism products & services through eco-labelling schemes and environmental protection initiatives marketed toward ecotourists

(UNEP, 2013)

BEST PRACTICES & NEW TECHNOLOGIES

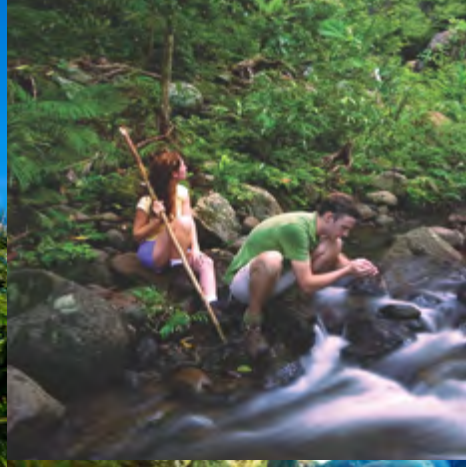
- **Carrying out Integrated Coastal Zone Management (ICZM)**, including the calculation of (IUCN, 2012):
  - Ecological Footprint (EF) as an estimate of human pressure on ecosystems
  - Tourism Carrying Capacity Assessment (TCCA) as a measurement of the maximum sustainable capacity of visitors to a destination before detrimental environmental effects arise
  - Environmental Assessment (EA) as a decision-making process to promote sound environmental planning by assessing the potential effects and benefits of specific activities on the environment
  - Limits of Acceptable Change (LAC) as a monitoring-based resource assessment method to specify desired parameters for environmental resource conditions, analyze differences between current and desired conditions, identify actions to achieve those conditions, and monitor/evaluate their effectiveness
    - More information here: www.esf.edu/for/kuehn/www/CC-LAC-03.ppt

- **Adopting methods for reinforcing existing coastal infrastructure**, including planting coastal vegetation and promoting coastal resource use changes, such as through reduced sand-mining by local communities, promoting conservation *(UNDP, 2017)*.

- **Setting seasonal or temporal limit on use levels** based on the area's carrying capacity (maximum level of use that an area can reasonably sustain before deterioration occurs), group size limits; pre-assignment of recreation site; area closures; restrictions on fire use; length of stay limits; barriers; site hardening (hard surfacing); park information & interpretation; differential pricing; tourism marketing; zoning *(Eagles et al. 2002)*.

- **Educating guests on sustainable behaviors** when visiting terrestrial, marine, and coastal environments and protected areas, such as through a best-practice guide or educational lesson during excursions and tours.

- **Ask guests to make small voluntary donations** to preserve marine reserves and support conservation efforts in local area *(Eagles et al. 2002)*.



INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Actions taken to reduce water consumption	Project Reports	For this indicator, record the actual number of actions and/or projects that were undertaken. See "Water" section for more information on best practices. **Measurement Unit:** # **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Water Reduction - List actions taken	Project Reports	For this indicator, provide a description of each of the actions and/or projects that were undertaken. See "Water" section for more information on best practices. **Measurement Unit:** n/a **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

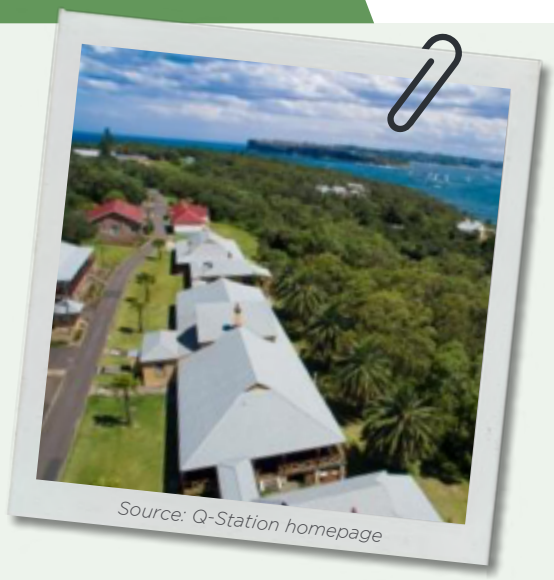
INDICATOR	DATA SOURCE	GUIDANCE
Actions taken on reduce impacts on coastal zones	Project Reports	Healthy coastal environments are vital to tourism demand in SIDS, and therefore damage or pollution to them could harm visitor numbers to hotels. Moreover, their value as both native biodiversity and an important resource to the community would be threatened. Measuring hotel impacts on these environments and limiting harm to them is vital. **Measurement Unit:** # **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Coastal Zone - List actions taken	Project Reports	For this indicator, provide a description of each of the actions and/or projects that were undertaken. **Measurement Unit:** n/a **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Actions taken to inform tourist of sustainable interaction with reef and marine habitats	Project Reports	Tourist education is a vital tool to prevent harm to sensitive reef and marine habitats, which are highly important for tourists, communities, and environmental value. This is particularly the case for SIDS. Hotels should enact as many educational measures as necessary to ensure only sustainable forms of interaction occur when visiting such environments. **Measurement Unit:** # **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Marine BPs - List actions taken	Project Reports	For this indicator, provide a description of each of the actions and/or projects that were undertaken. **Measurement Unit:** n/a **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

INDICATOR	DATA SOURCE	GUIDANCE
Actions taken to inform tourist of sustainable behavior in protected areas	Project Reports	Tourist education is a vital tool to prevent harm to protected areas, which are highly important for tourists, communities, and environmental value. This is particularly the case for SIDS. Hotels should enact as many educational measures as necessary to ensure only sustainable forms of interaction occur when visiting such environments. **Measurement Unit:** # **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Protected Area BPs - List actions taken	Project Reports	For this indicator, provide a description of each of the actions and/or projects that were undertaken. **Measurement Unit:** n/a **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Total Number of Rooms Using Water Efficiency Technology	Project Reports	Refer to ""Water"" Indicator guidance. For this indicator, provide a description of each of the actions and/or projects that were undertaken. **Measurement Unit:** # **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time"

CASE STUDY: Q-STATION (AUSTRALIA)

The development of this property, located in the North Head promontory in Sydney, Australia, involved the following extensive, multi-step process:

- First, the hotel development proposal was guided by a thorough Conservation Management Plan, based on a broad body of scientific research and adopting an ecosystem-based approach; this included full consideration of the local biodiversity and pressures it faced, as well as the cultural and historic heritage of the site
- Next, an extensive public process was undertaken to assess and address the potential environmental impacts of the hotel development proposal
- Thereafter, a Visitor Management Plan and Erosion and Sedimentation Control Plan were instituted to deal with issues surrounding visitor access, site capacity, and control of vehicle and pedestrian movements with the goal of minimizing impacts on sensitive areas and local animal/plant life
- After construction was completed, developers were required to prepare and follow an Integrated Monitoring and Adaptive Management System (IMAMS) for the conservation and adaptive re-use of the site



Source: Q-Station homepage

Source: IUCN (2012)

CULTURAL HERITAGE

visitors are evermore interested in experiencing authentic cultural offerings at their destinations and expect a high level of authenticity and quality. Therefore, this should compel hotels and tourism providers alike to meet this demand with cultural heritage products and services that are locally supplied, support community-based artists, and in line with the generations-old traditions of the community.

If not properly managed and conserved, cultural heritage can be at risk of becoming appropriated or losing its authenticity for the sake of attracting tourists drawn to stereotyped or simplified versions of those arts and traditions. In the specific case of souvenirs and handicrafts, factory-produced versions made en mass can potentially take the place of handmade crafts produced locally by artisans whose livelihoods depend on their art. When properly considered and authentically preserved, however, cultural heritage offerings can serve as major interest points for tourists while helping locals to conserve their traditions and practices.

Therefore, hotels should take appropriate efforts to monitor and proactive incorporation of authentic, artist-supporting cultural heritage products and services. Ensuring the entire destination is included in cultural heritage policies is also important. Having a policy to identify, protect and enhance the built (tangible) and other expressions cultural heritage e.g. music, (intangible) is vital to the sense of place and resident pride. Measuring this clearly identifies any shortfall.

Indicators to be measured under Cultural Heritage include:

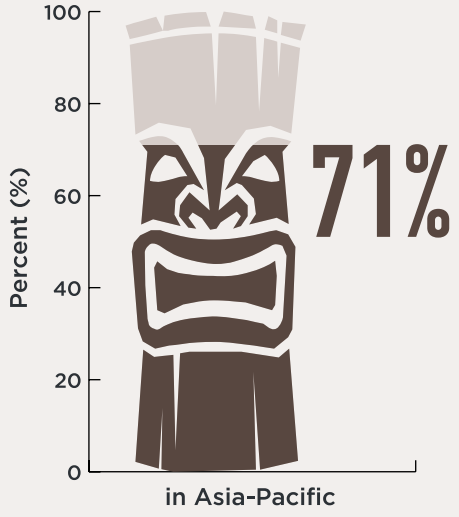
- *Percentage of performers that are part of a formally organized and/or registered group and formally contracted by the property*
- *Percentage of souvenirs, including handcrafts and cultural products, in the gift shop that are produced locally*
- *Percentage of souvenirs in the gift shop that are certified to be crafted by a local artisan*
- *Percentage of furnishings in the hotel that are produced locally including artwork and décor*
- *Percentage of tours promoted by the hotel that are owned/operated by local communities*
- *Percentage of uniforms and linens that are locally produced*

ECONOMIC IMPACTS

Local communities and groups should have the primary role of safeguarding their own culture. As well, maintaining cultural heritage is important for long-term interest in the region.

In many destinations, traditional arts and handicrafts sales contribute greatly to both local culture as well as the travel experience. Crafts can serve as an important contributor to the local and national economy, and supporting artisans also helps to preserve their traditions; many of whom are women, ethnic minorities, or impoverished artists. The tourism industry serves as an important market for many craft products and performing arts, with the average tourist spending USD $20-80 on handicraft purchases in developing countries (ITC, 2010). This can include gift shop products, furnishings in guest rooms and lobby/restaurant areas, and performers who provide onsite entertainment. Purchasing souvenirs is a typical tradition for many tourists, and gifts can also serve the dual purpose of marketing tools by telling a story about the destination.

INTERNATIONAL BENCHMARKS



(Green Lodging Survey, 2016)

Throughout the world, handicrafts in the tourism sector have been shown to be a significant economic boon, particularly for impoverished rural areas where few other employment opportunities exist. Successful examples have occurred in the following countries:

- Ethiopia, where tourism-related handicraft sales are estimated to be around **USD $12.7 million per year. 55%** of those expenditures are considered "pro-poor income" that supports low-income craftsmen, traders, and raw material suppliers
- Lao People's Democratic Republic, where the pro-poor-impact of curios and craft sales in the the capital of Luang Prabang is roughly **US$ 4.4 million. 40%** of that amount provides income for poor semi-skilled and unskilled people
- Vietnam, where artist craftsmen have been found to generate an income roughly **60%** higher than the average of the rural population
- Taiwan, where case studies have demonstrated that uniqueness, aesthetics and functional standards in crafts are critical for popular goods. Those that seemed to be only purchasable locally were particularly popular

(ITC, 2010)

BEST PRACTICES & NEW TECHNOLOGIES

- Conducting a Value Chain Analysis to better understand the various players involved in the production and sales of locally created goods and services, with the aim of supporting as many local artists and performers as possible
- Marketing and promotion of local souvenirs and arts & crafts made locally
- Inviting artisans to hotels to sell products directly to guests, local artists (dance troupes, singers, etc.) to perform at hotel
- Purchasing certain percentage of hotel furnishings and decor from local artists, including information about artisans next to each item
- Involving local cultural ambassadors to consult on new tourism product development, hotel design, and entertainment services to ensure maximum authenticity and cultural correctness

(ITC, 2010; Ashley et al., 2007)

INDICATORS

INDICATOR	DATA SOURCE	GUIDANCE
Percentage of performers that are part of a formally organized and/or registered group and formally contracted by the property	Vendor Reports	Monitoring this data can raise awareness about intangible culture. Other reasons for supporting local performers include that communities and groups should have the primary role of safeguarding their own culture, as well as the value of preserving cultural heritage and traditions for the long-term interest in the region. **Measurement Unit**: % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Percentage of souvenirs, including handcrafts and cultural products, in the gift shop that are produced locally	Purchase Orders	Handicrafts and handmade souvenirs made by local artists can be a vital source of income for community members. Their production can also help to preserve authentic artistic traditions while also appealing to tourists interested in purchasing authentic and locally made goods. Monitoring this data can incentivize hotels to sell higher numbers of local souvenirs onsite for guests. **Measurement Unit:** % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Percentage of souvenirs in the gift shop that are certified to be crafted by a local artisan	Purchase Orders	Certification of goods ensures their quality, authenticity, and ethical sourcing. **Measurement Unit:** % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Percentage of furnishings in the hotel that are produced locally including artwork and décor	Purchase Orders	As with handicrafts, purchasing of local furnishings supports the livelihoods of community artists and the conservation of their traditions and artistic styles. They can also contribute to the authenticity of the hotel property and the stay experience for guests. **Measurement Unit:** % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

Percentage of tours promoted by the hotel that are owned/ operated by local communities	Vendor Reports	Hiring third-party tour companies that are owned/operated by locals ensures supporting their livelihoods and authentic cultural experiences for guests through tourism service provision, rather than to international companies hiring foreign tour guides. **Measurement Unit:** % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time
Percentage of uniforms and linens that are locally produced	Purchase Orders	See “Procurement” tab. **Measurement Unit:** % **Frequency:** Data entry should occur twice a year (Apr and Oct) and represent a six month period of time

CASE STUDY: ARTISANS ANGKOR (CAMBODIA)


Source: Artisans Angkor, 2017

The semi-public company Artisans Angkor employs some 1,300 people in rural Cambodia, including more than 800 artisans, through the creation and preservation of ancient Khmer arts and crafts, including silk-making, stone and wood carving, lacquering, ceramics, and painting. The company provides artists with fair wages and training in various skills, along with employment in traditional workmanship tied to their heritage.

Finished products are sold to tourists visiting the local Siem Reap region. As well, many pieces have been purchased by luxury hotels in the area as decorations for their rooms, lobbies, and gardens.

Source: Artisans Angkor (2017)

REFERENCES

1. Antigua Hotels & Tourist Association (AHTA). (2015). "Sandals resort to save thousands of gallons through water recycling." http://members.antiguahotels.org/sandals-resort-to-save-thousands-of-gallons-through-water-recycling/

2. Artisans Angkor. (2017). "Cambodian Fine Arts and Crafts." http://www.artisansdangkor.com/

3. Ashley, C., De Brine, P., Lehr, A. & Wilde, H. (2007). "The Role of the Tourism Sector in Expanding Economic Opportunity." Corporate Social Responsibility Initiative Report No. 23. Cambridge, MA: Kennedy School of Government, Harvard University. https://www.hks.harvard.edu/m-rcbg/CSRI/publications/report_23_EO%20Tourism%20Final.pdf

4. California Department of Resources Recycling and Recovery (CalRecycle). (2015). "Food Scraps Management Case Studies (Model Programs)" http://www.calrecycle.ca.gov/organics/food/casestudies/

5. Caribbean Environmental Health Institute (CEHI). "Why Treat Wastewater? Environmental, Health, and Legal Considerations" http://www.cep.unep.org/issues/wastewater.PDF

6. Caribbean Hotel & Tourism Association. (2001). "Wastewater Toolkit" http://www.caribbeanhotelandtourism.com/downloads/CHTAEF_Wastewater.pdf

7. Centre of Excellence COE for Sustainable Development of SIDS (COE). (2017). "Sustainable Tourism? Be My Guest: The Case of Aruba's Bucuti and Tara Beach Resort." http://www.sustainablesids.org/wp-content/uploads/2017/01/COE-Sustainable-Tourism-case-Bucuti-Resort.pdf

8. Center for Responsible Travel (CREST). (2014). The Case for Responsible Travel: Trends and Statistics. http://www.responsibletravel.org/news/Fact_sheets/Crest_RTI_TrendStats_print_1_4%20%283%29.pdf

9. Eagles, Paul F.J., McCool, Stephen F. and Haynes, Christopher D.A. (2002). Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. IUCN Gland, Switzerland and Cambridge, UK. xv + 183pp. http://cmsdata.iucn.org/downloads/pag_008.pdf

10. Energy and Environment Division, Department of Industry, Science and Resources, Government of Australia. (2001). "Hotel Benchmarking Case Studies." https://industry.gov.au/energy/Documents/best-practice-guides/energy_efficiency_info_sheet_hotels.pdf

11. Environmental Leader. (2009). "Hotel Reduces Costs by Recycling" https://www.environmentalleader.com/2009/03/hotel-reduces-costs-by-recycling/

12. Environmental Protection Agency (EPA). (2010). "Four Seasons Hotel Composting Partnership
An Effective Practice." https://www3.epa.gov/epawaste/conserve/foodwaste/success/fourseasons.html

13. European Commission. (2009). Study on water performance of buildings, DG ENV, Brussels.

14. European Commission Joint Research Centre. (2013). "Best Environmental Management Practice in the Tourism Sector." http://susproc.jrc.ec.europa.eu/activities/emas/documents/TourismBEMP.pdf

15. Eurostat. (2009). Panorama of energy: energy statistics to support EU policies and solutions. EC, Luxembourg. ISBN 978-92-79-11151-8.

16. Fairmont Hotels and Resorts. (2008). "Corporate Responsibility." http://www.fairmont.com/EN_FA/AboutFairmont/enviroment/Awards/CorporateEnvironmentAwards.html

17. Food Margin. (2009). "10 Ways to Reduce Food Cost" https://foodmargin.com/2009/06/17/10-ways-to-reduce-food-cost/

18. Global Water Partnership. (2013). "Jamaica: Implementing Enviromental Management Systems (EMS) for Sustainable Tourism" http://www.gwp.org/globalassets/global/toolbox/case-studies/americas-and-caribbean/jamaica.-implementing-environmental-management-systems--for-sustainable-tourism-153.pdf

19. Green Hotelier. (2009). "Waste Management." http://www.greenhotelier.org/our-themes/waste-management/

20. Green Hotelier. (2013). "Water Management and Responsibility in Hotels." http://www.greenhotelier.org/know-how-guides/water-management-and-responsibility-in-hotels/

21. Green Hotelier. (2014). "Reducing and Managing Food Waste in Hotels" http://www.greenhotelier.org/know-how-guides/reducing-and-managing-food-waste-in-hotels/

22. Green Hotels and Responsible Tourism Initiative. (2010). "How to Increase Your Bottom Line by Going Green." http://green.hotelscombined.com/GreenYourHotelWhitePaper.php

23. Green Lodging News. (2016). "Green Lodging Trends Report 2016." http://hasekcom62.wpengine.com/wp-content/uploads/2016/11/Green-Lodging-Trends-Report-2016-11-29-16.pdf

24. Hegewisch, Ariane, Newitt, Kirsten & Usher, Alastair. (2013). "Investing in Women's Employment: Good for Business, Good for Development." Washington D.C.: World Bank Group. http://documents.worldbank.org/curated/en/484201468163444954/Investing-in-womens-employment-good-for-business-good-for-development

25. Hochstrat R, Wintgens TT, Melin T and Jeffrey P. (2005). Wastewater reclamation and reuse in Europe: a model-based potential estimation. Water Supply 5(1): 67–75.

26. International Finance Corporation (IFC). (2006). "The Tourism Sector in Mozambique: A Value Chain Analysis"

27. International Institute for Energy Conservation (IIEC). (2016). "Energy Efficiency Guidelines for Hotels in the Pacific" *includes useful checklists for hotels
http://www.ee-pacific.net/index.php/component/docman/doc_download/63-energy-efficiency-guidelines-for-hotels-in-the-pacific?Itemid=

28. International Tourism Partnership. (2014). "Monitoring Performance." http://www.greenhotelier.org/wp-content/uploads/2016/02/SDG-9-Monitoring-Performance-for-web.pdf

29. International Trade Centre (ITC). (2010). *Inclusive Tourism: Building Local Capacity for the Tourism Job Market.* Geneva: ITC, 2010. xi, 131 pages

30. International Trade Centre (ITC). (2010). *Inclusive Tourism: Linking the Handicraft Sector to Tourism Markets.* Geneva: ITC, 2010. xi, 41 pages (Technical paper)

31. International Union for Conservation of Nature and Natural Resources (IUCN). (2012). Siting and Design of Hotels and Resorts: *Principles and Case Studies for Biodiversity Conservation.* Gland, Switzerland: IUCN. 56 pp. * w/ useful case studies on low-impact hotels

32. Mclennan, C. J., Becken, S., & Stinson, K. (2014). A Water-Use Model For The Tourism Industry In The Asia-Pacific Region: The Impact Of Water-Saving Measures On Water Use. *Journal of Hospitality & Tourism Research.* doi:10.1177/1096348014550868 https://research-repository.griffith.edu.au/bitstream/handle/10072/68052/102987_1.pdf%3bjsessionid=D04CAE8D398BD56586BA2531AC1C19C1?sequence=1

33. Oyster.com. (2015). "Green Hotels: Saving the Environment AND Some Cash" https://www.oyster.com/articles/44322-green-hotels-saving-the-environment-and-some-cash/

34. Pacific Community Regional Rights Resource Team (RRRT). (2016). "Pacific Island Table of Treaty Ratification with OPs."

35. http://rrrt.spc.int/law-resources/ratification-tables/item/download/309_f475be6cf5f9dd4374e1c90c42244ad5

36. Pacific Energy Gender Network (PEG). (2010a) "A Review on Gender Mainstreaming and Action Plans of the SIDS IUCN ORO Energy Projects: Managing the Ecosystems and Livelihood Implications of Energy Policies in the Pacific Island States - Palau, Samoa, Tonga, Tuvalu and Vanuatu" http://prdrse4all.spc.int/system/files/final_report_gender_mainstreaming_for_iucn_energy_projects.pdf

37. Pacific Energy Gender Network (PEG). (2010b) "Capacity Building and Training on Gender Mainstreaming in IUCN ORO Energy Projects in Samoa Apia, Samoa"

38. http://prdrse4all.spc.int/system/files/gender_mainstreaming_samoa_training_report.pdf

39. Pacific Islands Applied Geoscience Commission (SOPAC). (2007). "Exploring the Potential of Waste as a Renewable Source of Energy in the Pacific Islands." ict.sopac.org/VirLib/MR0626.pdf

40. Peters, E.J. (2015). "Wastewater reuse in the Eastern Caribbean: a case study." *Water Management*, 168:5, 232-242.

41. Samoa Solid Waste Management (SWM) Partnership. (n.d.). http://www.sids2014.org/index.php?page=view&type=1006&nr=2692&menu=1507

42. Sandals. (2013). Sandals Grande Antigua resort and spa wastewater treatment. *Water Re-Use Contributing to Efficient Use of Water Resources for a Healthy Environment, Annual Water Operators' Conference of the Caribbean Water and Sewerage Association, Jolly Beach Hotel, Antigua.*

43. Solimar International. (2014). "Crafts and Tourism" http://www.solimarinternational.com/tourism-development/crafts-tourism

44. South Pacific Community & GIZ. (2016). "Introduction to Energy Efficiency and Renewable Energy for Hotels in Fiji." https://drive.google.com/open?id=0B2JNUIiNB4YdTzNoU0RkbI9PRWM

45. Strassburger, T. (2013). "Soil Sealing Guidelines – supporting better land management in the EU." http://esdac.jrc.ec.europa.eu/InternationalCooperation/SEPLS/SEPLS_Brussels2013/03-Strassburger-EUSealing_guidelines.pdf

46. Sustainable Cities Institute. (2013). "Pervious Paving." http://www.sustainablecitiesinstitute.org/topics/water-and-green-infrastructure/green-infrastructure-101/pervious-paving

47. Syngellakis, K. (2011). "Costs of Renewables in Pacific Island Countries (PICs)." http://www.irena.org/DocumentDownloads/events/Workshop_Accelerated_Renewable_Energy _Deployment/Session3/S3_2_Costs_ofREinthePacificv1.0.pdf

48. Tseng, T.A., Chang, D.Y., & Shen, C. (2009). "The use of souvenir purchase as an important medium for sustainable development in rural tourism: The case study in Dahu, Mioli county, Taiwan." National Extension Tourism (NET) Conference

49. TUI Travel PLC. (2011). "Guidelines for Environmental Sustainability in Hotels." http://www.tuitravelplc.com/system/files/susrep/TUITravelGuidelinesforEnvironmentalSustainabilityinHotels_0.pdf

50. United Nations Development Program (UNDP). (2017). "Climate Change Adaptation: PACC Samoa." http://www.adaptation-undp.org/projects/bf-pacc-samoa

51. United Nations Environment Program (UNEP). (2013). Paris: *Sustainable Coastal Tourism: An Integrated Planning and Management Approach* *w/ useful Implementation Guide (p. 133-154) http://www.unep.fr/shared/publications/pdf/DTIx1091xPA-SustainableCoastalTourism-Planning.pdf

52. USAID. (2009). "Powering Tourism Electrification and Efficiency Options for Rural Tourism Facilities." http://pdf.usaid.gov/pdf_docs/Pnadn865.pdf

53. US Green Building Council. (2017). "Surface Water Management." http://www.usgbc.org/credits/homes/v2008/ssc4

54. Water Supplies Department, Government of Hong Kong. (2016) "Best Practice Guidelines for Water Usage in Hotel Industry." http://www.wsd.gov.hk/filemanager/en/share/pdf/Hotel_industry-e.pdf

55. WRAP. (2011). "The composition of waste disposed of by the UK hospitality industry." ISBN 1-84405-452-7

SOUTH PACIFIC TOURISM ORGANISATION

SUSTAINABILITY MONITORING PROGRAM