

ENVIRONMENTAL MANAGEMENT SYSTEMS FOR CARIBBEAN HOTELS AND RESORTS

A Case Study of Five Properties in Jamaica¹

Prepared by Bill Meade and Joe Pringle, PA Consulting Group²

Abstract

Hotels and resorts around the world are now adopting environmental management systems as a means of improving resource use efficiency, reducing operating costs, increasing staff involvement and guest awareness, and obtaining international recognition in the travel and tourism marketplace. This article examines the cost savings and performance improvements at five hotel properties in Jamaica that were among the first in the Caribbean to adopt an environmental management system (EMS). The five hotels evaluated in the case study, Sandals Negril, Couples Ocho Rios, Negril Cabins, Swept Away, and Sea Splash have achieved remarkable improvements in environmental performance, and accompanying cost savings, since implementing environmental management systems (EMS).¹ These results are outlined below and serve as direct evidence of environmental performance improvements that result from proactive environmental management.² Total cost savings for the five properties is estimated to be \$615,500, or \$910 per room. Between 1998 and 2000, the properties had a cumulative water savings of 41.4 million Imperial Gallons (IG); total electricity savings of 1.67 million kWh; total diesel savings of 169,000 liters; and total Liquefied Petroleum Gas (LPG) savings of 259,000 liters. Expressing overall energy use in terms of kWh,³ the total energy savings is 5.67 million kWh.

Key Words

Environmental management system, EMS, green hotels, sustainable tourism, operating efficiency, water, energy, solid waste, Jamaica, Caribbean, Green Globe.

Background

Environmental management in the hotel industry traces its roots to two major initiatives in the 1990s - Agenda 21 for the Travel and Tourism Industry and ISO 14001. Following the Rio Earth Summit in 1992, the World Tourism Organization and the World Travel and Tourism Council published Agenda 21 for the Travel and Tourism: Toward Environmentally Sustainable Development. Agenda 21 defines a broad array of environmental and social impacts associated with hotel operations and the principles for minimizing these impacts. ISO 14001 is the international environmental management system standard promulgated in 1996 by the Geneva-based International Standards Organization. In 1997, the World Travel and Tourism Council's Green Globe created an international standard and certification program for hotels and other

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² PA Consulting Group, 1750 Pennsylvania Avenue, NW, Suite 1000, Washington, DC 20006, Tel. 202-442-2000, e-mail: tourism@paconsulting.com.

travel and tourism companies that combines the Agenda 21 principles and the ISO 14001 environmental management system – Green Globe 21.

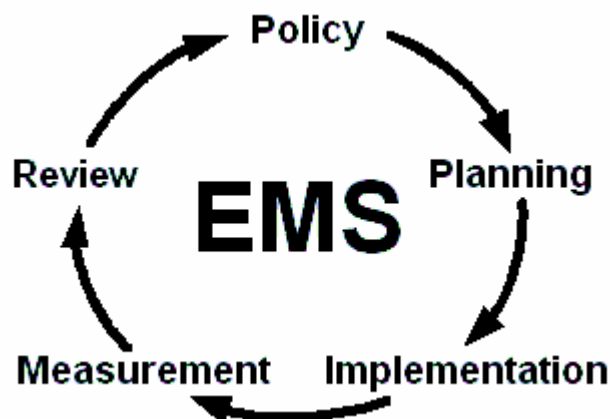
Green Globe is a worldwide certification program dedicated exclusively to helping the travel and tourism industry to develop in a sustainable way. The certification is open to companies and communities of any size, type, or location, and is based on an ISO style of certification. The Green Globe Environmental Management System is similar to that of ISO 14001 and EMAS. It requires an environmental policy, environmental targets and a system to measure performance against those targets, commitment to comply with legal requirements, and communication and documentation procedures. Under the Green Globe 21 standard, facilities must re-certify annually as opposed to every three years with ISO 14001.

There are a number of other international environmental initiatives and eco-labels for the hotel industry. While a discussion of these is beyond the scope of this article, it is important to note that there are many sources of information on best practices for the hotel industry. The distinction of EMS certification schemes such as Green Globe 21 is that they verify that the property has assessed its impacts and designed and implemented a program to minimize those impacts.

An Environmental Management System (EMS) is a systematic framework for integrating environmental management into an organization's activities, products, and services. A critical step in any organization's adoption of an EMS is the identifying those aspects of operations (e.g., use of chemicals in landscaping) and introducing changes in facilities and practices that minimize the impact of the organization on the natural and social environment. The EMS standard distinguishes itself from environmental performance standards in that it focuses on the organizational aspects and the process for determining appropriate levels of environmental performance, rather than prescribing specific technology criteria.

Two concepts that are important in understanding how an EMS works are: 1) continuous improvement and 2) best environmental management practices or “best practices”. The concept of continuous improvement implies that the organization can begin at any level of environmental performance. Through an iterative cycle of setting policies, planning environmental objectives and targets, implementing specific actions, measuring the results, and reviewing the overall effectiveness of the program, the organization will optimize its environmental performance over time (see Exhibit 1).

Exhibit 1. Environmental Management System



Best practices represent the preferred actions, from an environmental perspective, to perform a given function or service. Because of the similar nature of hotel and resort operations, international organizations have published guidebooks assisting hotel owners and managers determine the appropriate equipment, supplies and changes in staff activities that constitute “best practices”.⁴ It is important to note that the combination of best practices will differ for properties of different size (small versus large), location (city versus beach), type (business versus leisure) and management (international chain versus independently owned and operated).

Sustainable Tourism in the Caribbean

The Caribbean remains the world’s most tourism-dependent region, with the sector accounting for a quarter of all export earnings, 31% of Gross Domestic Product (GDP) and nearly a half million jobs.⁵ Energy and water costs tend to be higher than in the U.S. and other OECD countries. Exhibit 2 illustrates comparative water and electricity costs for selected Caribbean countries. Solid waste management is becoming an increasing issue due to the closure of dumpsites in favor of sanitary landfills and attempts to increase reuse and recycling. Finally, as most of the tourism development is located within sensitive coastal ecosystems, it is no surprise that the Caribbean is also the first region to embrace the concept of sustainable tourism and actively promote environmental management within the hotel industry.

Exhibit 2. Comparative Cost of Water and Electricity

Country	Water Prices (\$/m³)	Electricity Prices (\$/kWh)
Barbados	2.1	0.15
Jamaica	2.0	0.13
St. Lucia	2.9	0.21
United States average	.36	0.08
OECD average	.86	0.11

In 1997, the Caribbean Hotel Association formed the Caribbean Alliance for Sustainable Tourism (CAST) to undertake collaborative environmental activities in the hotel and tourism sector, to promote effective management of natural resources, to provide access to expertise on sustainable tourism, and to assist hotel and tourism operations in the Caribbean region to achieve the goals of Agenda 21 for Sustainable Tourism. CAST’s Governing Council includes IHEI and Green Globe, as well as a number of prominent hoteliers and active environmental organizations in the region. CAST is also the regional partner for Green Globe 21 EMS Certification.

Also during 1997, the U.S. Agency for International Development launched a new partnership with the Jamaica Hotel and Tourism Association to fund the introduction of environmental management and practices in small hotels (less than 100 rooms). Over three-quarters of all hotel properties in Jamaica, as elsewhere in the Caribbean, are small, locally-owned and operated properties. PA Consulting Group was hired to implement the Environmental Audits for Sustainable Tourism (EAST) program a model for both large hotels in Jamaica, as well as hotels elsewhere in the region.

The EAST program began with a demonstration of audits and EMS in small hotels in Negril, and later in Port Antonio. The program included training in auditing for consultants and EMS for hotel managers. It initiated environmental achievement awards for hotels, and an international exchange program⁶ to promote environmental leadership and voluntary compliance with environmental standards. The program, now in its fourth year, has become a model for programs in other Caribbean islands.

Case Study of Five Jamaican Hotels

The five hotels described here were selected from over 35 hotels in Jamaica that undertaken similar efforts because of their successful results. The five hotels were selected because they had implemented a sufficient number of best practices, had an operational EMS in place, and there was adequate data to evaluate cost savings and changes in environmental performance. Between 1998 and 2000, the properties, ranging from 16-rooms to 250-rooms, underwent an intensive program to improve their environmental performance. The two smallest properties are independently owned and operated, while the largest three are part of Jamaican-owned, multi-property groups. Exhibit 3 provides a summary of the five properties. PA assisted two of the properties – Sea Splash and Negril Cabins – under the EAST project. The owners of the other three properties contracted with PA directly for their EMS services.

Exhibit 3. Summary of Jamaican Hotels in Case Study

Hotel Name	Location	Number of Rooms
Sea Splash Resort	Negril	15
Negril Cabins Resort	Negril	86
Swept Away Beach Resort and Spa	Negril	134
Couples Ocho Rios	Ocho Rios	172
Sandals Negril Beach Resort and Spa	Negril	223

All five properties underwent the same assistance program and implemented a similar EMS. The assistance program consisted of five steps: 1) assessment, 2) EMS design and documentation, 3) organizational development and training, 4) EMS certification, and 5) performance monitoring. Generally speaking, the programs were implemented over a 1-year period, however, the pace of adoption varied from 9-months to 18-months. In addition to the on-property efforts and results, the properties have received national and international recognition and have participated in international exchange programs.

Step 1 – Assessment. The assessment step involved a detailed diagnostic of current operations and identification of opportunities for improvement. Through an analysis of consumption patterns over a 12-month period preceding the assessment, PA calculated a water and energy use index of consumption per guest night. Baseline water consumption across the five properties varied by a factor of 3.2 times (from 142 IG/GN to 459 IG/GN)), while electricity consumption varied by a factor of 2.6 times (from 15.6 kWh/GN to 41.8 kWh/GN). The assessments focused on no-cost or low-cost recommendations that typically pay back in less than 1 year.

Step 2 – EMS Design and Documentation. This was perhaps the most difficult step in the process. It required the property management to establish objectives, set targets, assign responsibilities, and document all related activities. The larger properties had a benefit of experience in budgeting capital expenditures and documented standard operating procedures for different departments. It should be noted that while all five properties began with similar EMS

Users Manual, each adapted it to fit their needs and other management systems. Maintaining documentation is a requirement of all EMS standards.

Step 3 – Organizational Development and Staff Training. Each of the properties appointed an Environmental Officer to lead the property's efforts, and an environmental committee or Green Team. The Environmental Officers were drawn from a wide variety of departments: Accountant (Sea Splash), Property Manager (Negril Cabins), Director of Administration (Swept Away), Executive Housekeeper (Couples Ocho Rios) and Resident Manager (Sandals Negril). Sandals Negril later hired a dedicated Environmental Management Officer. The responsibility of Environmental Officer is an additional duty for the persons in the other four properties. The Green Teams were similarly composed of representatives from engineering, grounds keeping, food and beverage, housekeeping, accounting and the front office. The larger resort properties included a representative of water sports.

Each of the properties went through a similar program of classroom training for management and on-the-job training for line staff. All five properties now include information on their environmental activities in staff orientation. Housekeeping was uniformly the most difficult area to introduce best practices (e.g., towel and linen reuse program) because of high turnover and the routine nature of the work, whereas engineering was the easiest given their familiarity with equipment and hotel operations and utility consumption targets.

Step 4 – EMS Certification. Green Globe 21 was selected as the EMS certification because of its direct application to the travel and tourism industry and the support from a regional organization (i.e., CAST) to those interested in pursuing certification. For all five properties, it was the Green Globe 21 certification that motivated the management to fulfill all of the requirements of an EMS, especially the documentation. All five properties achieved Green Globe 21 certification, and several have gone through their first annual re-certification. The shortest length of time from assessment to certification was 9 –months (Sandals Negril). The others all took 12-18 months.

Step 5 – Monitoring. The old adage – “you can't monitor what you can't measure” holds true here. Each property developed a monitoring program that evaluated the implementation of their EMS (actions achieved verses planned) and the results in their baseline consumption indexes. Each property prepared a monthly report to senior management that summarizes the EMS program. The properties are now able to compare their “pre” and “post” EMS consumption indexes for both water and electricity. Some have extended their monitoring programs to disposable items (e.g., garbage bags and chemical use).

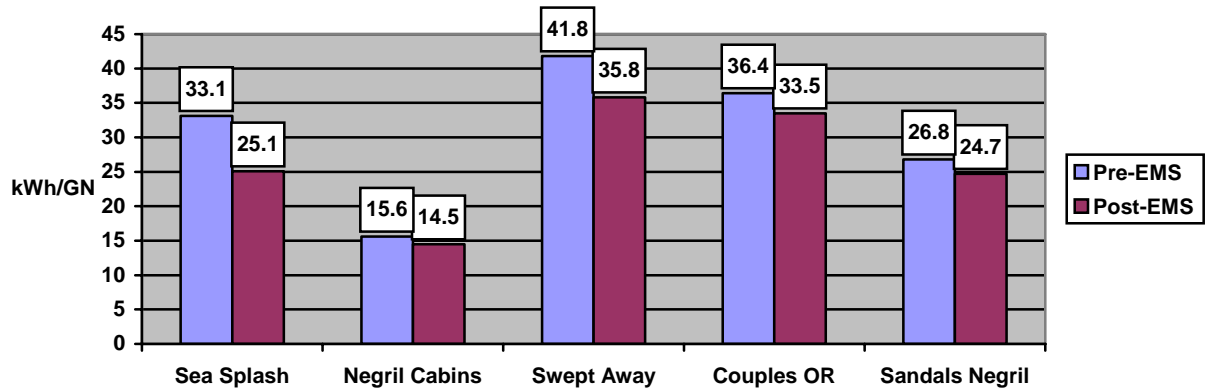
Performance Improvements

All five properties experienced an improvement in their water and electricity consumption. The greatest improvement in water use was Swept Away (50% reduction), while the greatest percent improvement in electricity use was Sea Splash (24% reduction). Exhibits 3 and 4 illustrate the “pre” and “post” EMS consumption indexes for water and electricity, respectively.

Exhibit 4. Change in Water Consumption



Exhibit 5. Change in Electricity Consumption



A summary of the results for the five properties is provided below. It should be noted that these savings have accrued over a 2+ year period, and that while the savings are expected to continue, the year to year improvement is likely to decline as the easiest and most economically attractive “best practices” are adopted.

- Sandals Negril (215-rooms) saved approximately 45,000 m³ of water, 444,000 kilowatt hours of electricity, and 100,000 liters of diesel. In addition, the hotel has achieved a significant reduction in its solid waste stream and realized significant savings of plastic bags and fertilizer. The total investment for the program was approximately \$68,000. Based on the estimated savings of \$261,000, the program yielded an annual return on investment (ROI) of 190% over the first 2 years. The payback period for the initial investment was approximately 10 months.
- Couples Ocho Rios (172-rooms) saved approximately 31,000 m³ of water and 174,000 kilowatt hours of electricity. The total investment for the program was \$50,000: approximately \$ 20,000 in equipment and \$30,000 in consulting fees. Based on the estimated savings of \$134,000, the program yielded an annual ROI of 200% over the first 16 months. This represents a payback period of just 6 months.

- Swept Away (134-rooms) saved approximately 95,000 m³ of water, 436,000 kilowatt-hours of electricity, 172,000 liters of liquefied petroleum gas and 325,000 liters of diesel. Based on available data, the total investment for the program was approximately \$44,000. Based on the estimated savings of \$294,000, the program yielded an ROI of 675% over the first 19 months. The payback period for the initial investment was approximately 4 months.
- Negril Cabins (80-rooms) saved approximately 11,400 m³ of water and 145,000 kilowatt hours of electricity. In addition, the hotel has achieved savings of over \$5,000 on laundry chemicals since August 1998 through its towel and linen reuse programs and efforts to reduce the use of laundry chemicals. The property began composting in October 1998 and has composted over 35 tons of solid waste. By using this compost for its landscaping needs, the property no longer purchases fertilizer. Based on available data, the total investment in the program was \$34,670, and the resulting savings over 2.75 years are estimated to be \$46,000, producing an annual ROI of 48%.
- Sea Splash (15-rooms) has saved approximately 7,600 m³ of water and 154,000 kilowatt hours of electricity, leading to significant savings in utility costs. The cost of the project at this resort was \$12,259, and the savings since July 1998 are estimated at \$46,000, yielding an annual ROI of 151% over the first 2.5 years of the project.

Lessons Learned

The main lesson learned from this case study is that a structured process and management system can yield significant improvements in any size hotel property. As expected, the properties tended to focus on fixing leaks, changes in staff practices (e.g., towel and linen reuse programs) and water conserving devices that pay back in a matter of days or months. Higher cost measures (e.g., high efficiency lighting or water saving toilets) tended to be put off until the second year of EMS implementation when some savings were already realized. In addition to the efficiency improvements, the daily monitoring water and electricity meters saved several of the hotels from erroneous utility bills that would previously have been paid directly from accounting.

Another lesson learned is that an EMS program with reinforcing elements will motivate properties to both enter the program as well as stay in the program. The EMS design without a detailed property assessment makes it difficult for the property to establish realistic targets for improvement and to determine the applicability of “best practices”. Similarly, organizational aspects and training are more meaningful when drawn from an EMS that documents job responsibilities, training program, and monitoring program. Certification, by itself, was not viewed as cost-effective without the associated financial savings associated with the assessment recommendations. And finally, measuring the actual results or improvements would not have been possible unless a baseline was established prior to the adoption of an EMS.

A final lesson is that people make the difference. All five properties benefited from strong, and active, support from the General Manager. In the two smaller properties, the owners became more involved in the second year of the programs, and each property’s EMS survived changes in General Manager. The two new General Managers have embraced the EMS approach and have further empowered the Environmental Officer and Green Team to lead the property’s efforts. Each property has a dynamic individual as their Environmental Officer. These individuals became the “environmental champion” for their properties and were, in four of the five cases, required to take on additional responsibilities. Given that the Environmental Officers are from different departments, it indicates that the character of the individual is as important as their

technical knowledge or rank in the hotel. All five properties have found ways to recognize and reward staff for their involvement in their environmental programs. Finally, several of the line staff indicated that they had begun some of the same practices in their homes.

Implications for Transferring Results to Other Caribbean Hotels and Resorts

Transfer of the “Jamaica experience” is well underway. Other Jamaican hotels, including entire hotel groups, have made the commitment to adopt an EMS. USAID has extended its program to additional small hotels in Jamaica, and small hotels in the Eastern Caribbean. Governments of several countries (e.g., Bahamas and Cayman Islands) have drawn up plans to sponsor their own EMS demonstration programs. For all intensive purposes, EMS has become a part of the Caribbean hoteliers permanent vocabulary.

As the number of Caribbean hotels with a certified EMS increases, new technical support is emerging. For example, several of the hotels profiled in this case study have already reached out to the hotels operating in their area to provide guidance in adopting “best practices”. Hotel training schools are now looking to “green” their curricula by integrating “best practices” into management and line staff training. A training course for “certified” environmental officers is scheduled, and an internship program with hotels in North America is being planned. There is a preliminary plan to establish a Green Hotel Fund that will extend financing for hotels to implement “best practices”.

As today’s best practices become “common practices” in the Caribbean, the role of organizations like CAST become even more important in researching and analyzing new technologies, products and staff practices to feed the continuous improvement cycle. Combining the competitive nature of the industry that recognizes leaders, and the cooperative spirit of hoteliers helping each other solve common problems in same tourism destination make for powerful forces in optimizing the environmental performance of Caribbean hotels.

Notes

¹ An environmental management system (EMS) is a systematic framework for increasing operating efficiency and improving environmental performance.

² These results reflect only those that were quantifiable given existing data.

³ The energy content of LPG and diesel is as follows: 1 liter of LPG = 7.09 kWh, and 1 liter of diesel = 10.83 kWh.

⁴ Environmental Management for Hotels – Industry Guide to Best Practice, prepared by the International Hotel Environment Initiative, 1993.

⁵ *1999 Caribbean/Latin American Profile*, Caribbean Publishing Company and the Caribbean/Latin American Action. 1998.

⁶ The Jamaica Hotel and Tourism Association and Fairmont Hotels (formerly Canadian Pacific Hotels) each host as an exchange of environmental officers and members of staff involved in environmental programs.