

Full Length Research Paper

A Study of Hospitality Management for Environmental Certification: Case Study Using the Hotel des Parlementaires, Yamoussoukro, Côte d'Ivoire

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Abstract

This work was the review of the potential impacts of the activities, products and services that need to be addressed within the Environmental Management System (EMS). The study was done at the “Hotel des Parlementaires” (HDP), a 4 stars Hotel with a capacity of 300 rooms located in the city of Yamoussoukro. In-depth interview of 3 target groups was done, the management team, Social and Environment Managers, and staff. This was completed by a focus group Interview. Data were gathered by listing the environmental aspects according to the ISO 14001 criteria. Then identified most significant environmental impacts were assessed. The most important potential impacts to the environment found were the discharge from the HDP into the air and water bodies, the contamination of soil, the utilization of raw materials and natural resources, the management of waste, and the environment of the local community. Corrective actions concerning good Housekeeping practice such as the use of ecocard for bedrooms, sundry of laundry, storm water collection and recycling, reuse of rinse water, and the setup of 3Rs program for waste management were proposed. The setting up of a training program for environmental awareness among staff, guests and clients were indicated.

Keywords: *ISO 14001, Environment Management, Impacts, Tourism, Hotel.*

INTRODUCTION

The appearance of tourism as a major industry is one of the most remarkable changes that have taken place in the global economic activity (Sinclair, 1998). Tourism has become the third largest economic activity in the world (after oil and automobiles), and it is one of the fastest-growing activities (Batta, 2013). The World Tourism Organization (UNWTO, 2013) projects that by the year 2014, international tourist arrivals will have increased to 1.018 billion and direct revenue is expected to reach US\$1.55 trillion. The contribution of tourism to the economies of the developing countries in terms of income, employment, and balance of payments effects is becoming very important. Because of this, many developing countries have begun to actively pursue

tourism as a means to create jobs, diversify their economies, and earn foreign currency.

Among the three major impacts of tourism-economic, socio-cultural and environmental - the economic impact played a dominant role in policy-making (Sinclair, 1998). With the focus on the economic benefits that accompanied the development of tourism, the adverse socio-cultural and environmental impacts of tourism were relatively overlooked. Based on the economic benefits, tourism development was prescribed as a cure-all for many social and economic problems. This has led to the indiscriminate and unplanned growth of tourism infrastructure in many countries, and soon the negative effects in the form of social and environmental degradation began to emerge. Due to enhanced awareness of the negative impact of tourism on the environment, efforts have been made to develop approaches for making tourism sustainable. The last two decades have witnessed a growing interest in the

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relationship between tourism development and environmental quality (Erdogan and Tosun, 2009), with the emergence of special interest tourism including green tourism.

Recognizing the natural environment as a vital tourism resource, public and private sectors of the tourism industry are increasingly adopting and implementing environmentally compatible development measures in order to limit the negative environmental impacts associated with tourism development. According to Middleton and Hawkins 1998, the tourism industry uses certification or environmental awards as trademarks or logos to communicate the environmental qualifications of a company, with the hopes that customers develop positive attitudes toward their product or service. In the market place, this type of strategy can give companies a differential advantage over their competitors. The use of certification issued by respected body is usually intended (Sasidharan et al., 2002) : (i) to control tourism's negative environmental impacts on the natural resources by encouraging tourism activities to achieve high environmental standards, (ii) to educate tourists regarding the impacts of their actions and decisions, and (iii) to develop standards for environmentally friendly tourism products and services.

In recognizing the need to maintain the balance between tourism development and the environment through appropriate planning and management of tourism resources, many concerned parties in developing countries put forward recommendations for green tourism products to regulate tourism's negative impacts (Erdogan and Tosun, 2009; Middleton and Hawkins, 1998; Sinclair, 1998). The tourism certification may be applied to hotels, resorts, marinas, travel agencies, tour operators, ground and water transportation services, airlines, and may also be extended to certify the environmental soundness of tourist destinations and the natural resources at these destinations (Mihalic, 2000).

Certification is defined as a voluntary procedure that assesses, audits, and gives written assurance that a facility, product or service meets specific standards and it awards a marketable logo to those companies that meet or exceed baseline standards (Honey and Rome, 2000). The purpose of certification has been to achieve voluntary standards of performance that meet or exceed baseline standards or legislation. The process starts with a body that sets credible certification standards. The aim of certification is to foster responsible environmental, social, and cultural behavior and provide a quality product to consumers

Hotels as accommodation for tourists in Côte d'Ivoire could generate potential environmental impacts on the environments in which there are situated, although these environmental impacts would apply to other accommodation categories as well. This study aims at reviewing the aspects and impacts of the activities,

products and services of the Hotel des Parlementaires (HDP) that may interact with the environment, and formulating a list of significant environmental aspects and impacts that need to be addressed within the Environmental Management System (EMS) taking into account the criteria for ISO 14001. The HDP was selected to be a case study as it is the last hotel to be designed and constructed in Yamoussoukro, the capital city of the country, during the recent 10 years. This hotel is one of the two state own hotel in the city and on top of that, the guest house for the parliamentarians during parliament sessions. Being constructed recently, this hotel may have incorporated environmental concerns taking into account the necessity of social responsibility.

The specific objective of this study was to identify and describe the potential impacts that the HDP may have on the environment and to establish an Environment Management Program to these impacts according to ISO 14001 (AFNOR, 2004).

METHODOLOGY

Location of the Hotel

The "Hotel des Parlementaires" (HDP) is located in the city of Yamoussoukro, the capital city of Cote d'Ivoire. The city of Yamoussoukro is located in the center of the country between 6°40' and 7° north latitude and between 5°10' and 5°20' west longitude, at a distance of 240 km north of the most important city, Abidjan (Figure 1). It is an important crossroads of routes serving all the countries of the sub-region. The 1998 census counted 176,109 inhabitants (INS, 1998), but the population is now estimated at over 242 000 inhabitants.

The HDP (Figure 2) is a high luxury resort classified in the category of 4 stars, hosting with 300 luxury rooms, room service, two restaurants, a snack bar, a night club, a swimming pool, a game room, a shopping arcade, a laundry, ironing, a business center and a fitness center. Originally it was built as the parliamentarian's guest house. However, in order to optimize its management, the hotel was open to other guests (AKMEL, 2013).

The Hotel includes eight departments: Department of human resources; marketing, finance and accounting, food and beverage, front office, maintenance, housekeeping, and security: each headed by a head of department.

Methods

The study was done from July to August 2013 for the collect of the information and September 2013 was used for data handling and analysis

The information used in this study were obtained through a survey done among HDP managers (General

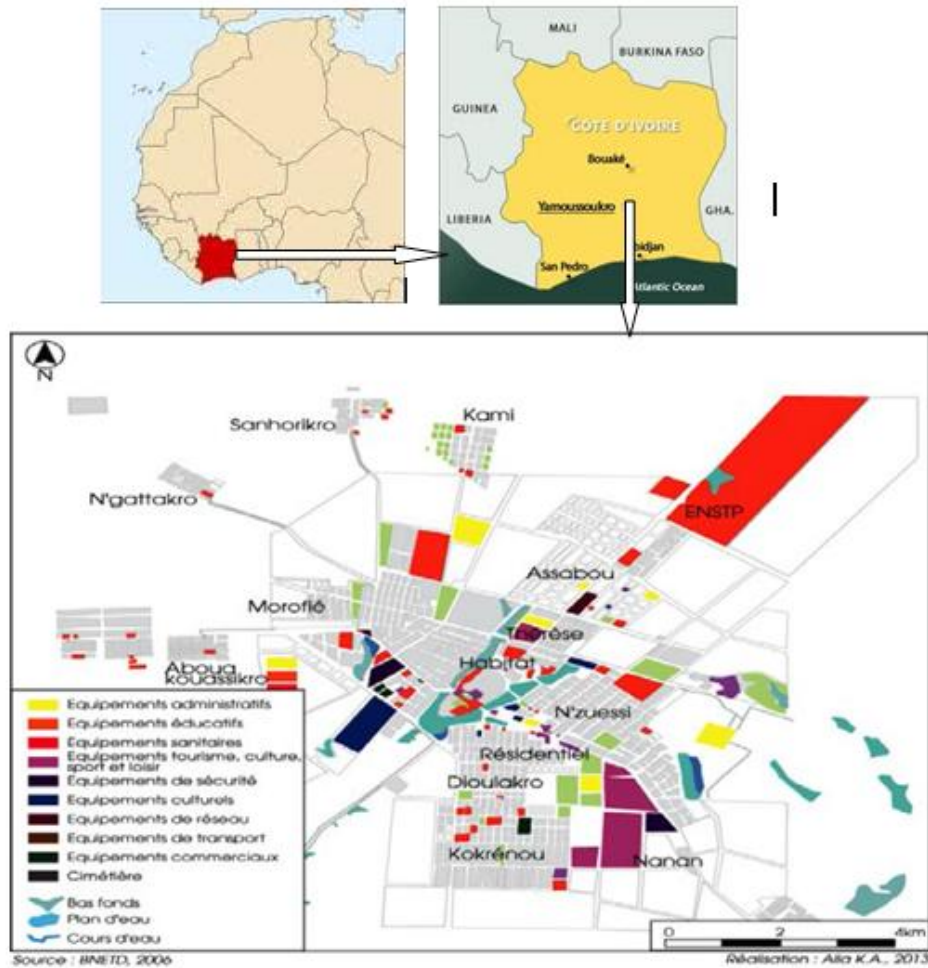


Figure 1. Location of the city of Yamoussoukro in Cote d'Ivoire



Figure 2. Picture of the Hotel of the Parlementaires (HDP); a) front side; b) back side

Manager, HDP Social and Environment Managers) and 1/3 (50 people) of randomly chosen staff. The questionnaire comprised six sections:

- Waste and water management in the hotel,
- Purchasing politics and logistics,
- The management of landscape,
- Management of the environment of the hotel,
- The regulatory obligations of the hotel management,
- The outreach of the stakeholders (workers, clients, buyers, etc.)

Each section of the questionnaire consisted of a set of questions for which each surveyed person must respond. The survey was completed with in-depth observations of the potential impacts of the HDP as a case study on the environment. A focus Group Interview with the eight Heads of Departments was also done. This focus group aims at verifying the information concerning the functioning of the departments obtained during the visits. All was completed with the visits of all the eight departments of the Hotel.

The obtained data were used to first assess the environmental aspects of the hotel and then identified environment impacts. An environmental aspect being defined, as an element of an organization's activities, products or services that can interact with the environment (AFNOR, 2004). As given in the definition, it covers not only the organization's activities, but also its products and services:

- Air emissions,
- Releases to water (lake, river, pond, sea, surface water etc.)
- Generation of solid waste (Hazardous or non-hazardous)
- Contamination of land.
- Use of resources like water, electricity, etc.
- Creation of noise
- Hazard to safety and health
- Potential emergency situations
- Past accidents / incidents.

The environment impact is any change to the environment, whether adverse or beneficial, wholly or partially resulting from the HDP's activities, products or service-and assessed the most significant, for which action should be taken (AFNOR, 2004).

RESULTS AND DISCUSSION

Potential impacts of the operation of the Hotel

Here the environmental aspects in relation to the activities of the hotel were identified. It takes in account the input and output (intentional and non intentional) associated to the activities, products and services of the HDP. We used the approach recommended by the ISO 14001, 2004 standard which takes in account:

- Emission in the air,
- Discharges in water bodies,
- Discharges on soil,
- The utilization of raw materials and natural resources,
- The management of waste,
- Local and comminatory environment.

Emission in the air

The impacts of the activities of the Hotel on climate were the emissions in air which were summarized in table 1. As we can observe, the emissions comprise GHS (CO₂, NO_x, SO_x), health hazard such as particulates from dust and chemical discharge.

Discharge into the soil – contamination

The activities of the Hotel and their potential environmental impacts are summarized in table 2. Figure

3 is a picture which illustrates the erosion of soil due to heavy raindrops on the non asphalted road to the Hotel.

Discharges in water bodies

The impacts of the Hotel on the hydrology particularly on surface water are summarized in table 2. It concerns the contamination of the lakes and groundwater due to accidental discharge or overflow of leftover. Figure 4 and 5.

Utilization of raw materials and natural resources

Potential impacts of the hotel on wildlife and flora were summarized in table 3. It concerned the impact on biophysical environment and the impacts of the utilization of water and electricity. Figure 6.

Waste management

The potential impacts of waste production and management are depicted in table 4.

Local and community environment

Table 6 depicts the potential impacts the functioning of the hotel may have on local community livelihoods. Some of these impacts are positive and concerned the development of economic activities in the nearby villages. Other impacts are negative such as health risk due HIV/AIDS transmission by new comer workers in these villages.

Proposed management programs

The proposed management programs concerned the significant environmental aspects of the activities and services that may impact the environment of the hotel.

We proposed to provide eco card on the bed so that the customers who do not want house keepers to change their bed sheets will leave the card on the bed after use. This will reduce water and chemical consumption; reduce electricity consumption and carbon footprint leading to cost savings. Besides that, the HDP being located in the central part of the country where six months of the year are dry leading to good sunshine, we proposed to dry linen under sunshine sometimes minutes before putting them in the drying machine. This will reduce electricity consumption and carbon footprint leading to cost savings.

Water conservation practice such as storm water collection system must be implemented by the hotel. Since the height of rainfall in the area of Yamoussoukro

Table 1. Potential environmental impacts of discharge from the Hotel into the air

Facilities or services	Activities	Potential environmental impact
Kitchen	Cooking Burning of fossil energy	Odor vapor in the air contamination Emission of particulate, CO ₂ , NO _x et SO _x in the air
Laundry		Emission of water vapor and chemicals in the air
Broiler		Combustion of harmful particulates and CO ₂ in the air
Air conditioning System	Accidental leaking of butane air conditioning	Emission of gas particulates in the air Emission of HCFC and heat in the external air / Contamination of internal air by transmission of virus et de bacteria
Refrigeration unit	Conservation of food supplies	Emission of HCFC and heat in the external air
Housekeeping maintenance and Aerosol	Use of aerosol can Spraying of insecticides and deodorants	Release of CFFC in the atmosphere from Emission of harmful particulates and CO ₂ in the air
Extinguisher	Fire prevention	Emission of CO ₂ and halon during utilization
Outdoor	Spray of insecticides for the control of insects outdoor	Harmful chemicals released
Storage of chemicals	Leakage or accidental spilling of chemicals	Emission of harmful substances in the air
Vehicle fleet	Gas emission from exhausts	Emission of CO ₂ , NO _x and SO _x in the air
Sewage plant	Wastewater treatment process	Odor and emission of gases
Swimming pools	Utilization of chlorus, aluminat sulfate and algaecide for the treatment of water	Air contamination by evaporation of chemicals
Dumpsite	Waste storage	The air contamination by emission of odor and harmful particulates
Not used areas	Burning of green waste	Emission of harmful particulates in the air
Green spaces	Burning mowing grass	Particulates and noxious gases released into the atmosphere
Roads	Traffic	Emission of dust in the air

Table 2. Potential environmental impacts of the HDP discharge into soil

Facilities or services	Activities	Potential environmental impact
Hotel and facilities	Sloppy terrain	Increasing of the erosion
Non asphalted roads	Destruction of the shoulders by raining water (Figure 3)	Shoulder erosion, leaching, and accentuation erosion
Unplanted bare soil	Soil undermining by raining water	Water logging and poor storm water drainage
Storage facilities of chemicals	Seepage from incorrect storage of hazardous waste	Contamination of bare soil and groundwater
Dumpsite	Overflow discharge of waste and leaching from incorrect storage	Potential contamination of bare soil and groundwater
Maintenance of building	Discharge of paint leftover on soil	Potential contamination of bare soil and groundwater



Figure 2. Picture illustrating the destruction of road shoulders by raining water and soil erosion



Figure 3. Wastewater treatment plant discharging into the nearby lake

Table 3. Potential environmental impacts of the discharge from the Hotel into water

Facilities or services	Activities	Potential environmental impact
Product storage facilities	Accidental discharge of chemicals	Surface water contamination
Dumpsite	waste overflow discharge	Surface water contamination
Maintenance of buildings	Discharge of paint leftover on soil	Surface water contamination
Wastewater treatment plant	Discharge of wastewater in the lakes (Figure 4)	Contamination of the lakes



Figure 4. Discharge of paint leftover from the Hotel onto the soil

Table 4. Potential impacts of the Hotel on raw materials and natural resources

Facilities services	or	Activities	Potential environmental impact
Hotel and facilities		Sloppy terrain	Increasing of the erosion
Non asphalted roads		Destruction of the shoulders by raining water	Lessivage du sol et accentuation de l'érosion
Not used areas		Soil undermining by raining water	Lessivage du sol et accentuation de l'érosion
Storage facilities of chemicals		Accidental chemical discharge	Combustion of harmful particulates and CO ₂ in the air
Dumpsite		Overflow discharge of waste	Combustion of harmful particulates and CO ₂ in the air
Maintenance of building		Discharge of paint leftover on soil (Figure 5)	combustion of harmful particulates and CO ₂ in the air



Figure 5. Picture of waste storage facility with garbage cans and overflow of waste on soil

Table 5. Potential impacts of waste produced by the hotel on the environment

Facilities or services	Activities	Potential environmental impact
Laundry	Reuse of old linen	Waste reduction
Offices	Onsite parcel services	Waste reduction
All the sectors	Use of waste disposal bins	Sanitary advantages
Dump	Discharge of waste overflow (Figure 6)	Soil, surface water and air contamination
Space not in use	Discharge of liquid waste	Soil, surface water and air contamination
	Burning of green waste	Air contamination

Table 6. Potential environmental impacts of the Hotel on the site and on the community

Facilities or services	Activities	Potential environmental impact
Staff	Mutual assistance and rapprochement	Source of motivation
	direct contact with chemicals	Health risk
Population	Employment offers	Improvement of social life education standard and training
Living standing	Improvement of worker's revenues	Economic growth of the community
	Increasing of the purchasing power	Development of economic activities

is between 900 to 1100 mm (AKMEL, 2013). This collected water which represents 0.7-0.9% water return (IPCC Radiative Forcing of Climate Change, 1994) can be used for watering garden and lawn. This water can even be filtered and used for laundry. This will reduce tap water consumption leading the reduction of the depletion of the aquifer. But the design of such systems must consider the catchment surface area, potable and rainwater demands, and number of guests (Theodorou, 1997). Another way for water conservation was to recycle rinse water by using it for plants watering in the gardens. A study in Brazil showed potable water savings ranging from 28.7% to 34.8% when using greywater (Akoachere et al., 2008).

For now, there is no program for the reduction or recuperation of waste generated (garbage, plastic, paper, chemicals) by the hotel. There the 3Rs concept (reduce, reuse, recycle) must be set in the hotel. In most cities of the country recuperation and reuse of plastic are common practices. But in our case the remoteness of the hotel makes it difficult to do by those interested by this practice. We propose to the management to provide these recuperators with bicycles. This will reduce the amount of waste going to dumpsites leading to hauling cost saving which will largely upset the cost of bicycles.

For the conservation of energy, the Hotel could use solar heaters to produce hot water since it is located in the area where the solar radiation is higher during the days. This will reduce electricity consumption leading

to cost savings

A training and awareness program must be setup by the management team for the staff in the area of environment management and sustainable development. Leaflet on environmental awareness must be produced for the staff and for guests, and clients. In the same manner, the hotel should encourage the guests to make a contribution on social and environmental conservation such as saving environment while they stay in the Hotel or donate money to green charities such as protecting the nearby national parks.

The Hotel has just opened but it is important for the management team, to setup a contribution of the revenues of HDP to projects which benefit both local and global communities and the environment. Although local people are hired like anybody to work in the hotel, it is an opportunity for the management to set a quota for local people. Perhaps developing activities such as selling artwork, traditional clothes may help improve local community welfare.

DISCUSSION

The idea of sustainable hotel is based on ecological developments which includes essential of energy usage, water conservation and waste management. The eco-hotel industry provides environmental conservation and sustainable development with the

connection of environmental management and environmental performance accreditation (AFNOR, 2004; INS, 1998). The international labels are most likely to make difference to tourist as a target market for environmentally sustainable tourism (AKMEL, 2013; IPCC Radiative Forcing of Climate Change, 1994).

Following the key performance the ISO 14000 certification schemes, the results in the Tables 1 to 6 reveals the use of variable flush volumes in toilets which reduces water consumption by ½ liter each flush. Sant'Ana (2012) indicated a water reduction index (WRI) of 9% using a dual flush toilet. In addition, the use of key cards allow for automatic shut off of light in any room after the departure of clients; thus reducing electricity consumption by 24% (Kapiki, 2010). Other study indicated that door switches can reduce energy consumption by 30% or more by automatically switching off lights and air-conditioning, thus saving energy when the guest is out of the room (Walker, 2010), leading to cost savings. Swimming pool disinfection is realized using Aluminum sulfate E520 ($Al_2(SO_4)_3$) instead of Chlorine (Cl_2). This chemical is judged a non toxic according to the Canadian Law of Environmental Protection of 1999 (Theodorou, 1997). The key success is the creation by the HDP of an organic orchard which will provide the Hotel with organic products, thus restricting the input of chemicals. One of the great benefits is the systematic use of energy saving bulbs in place of the old 100W bulbs in all the rooms and many parts of the Hotel.

The Hotel needs to increase public awareness in order to attract more green customers who appreciate the value of a natural environment. Thus the actual tariff of 65 000 FCFA (€100) for normal room should be reduced to an acceptable level, in order to increase the attending of the Hotel. A room, at the nearby four star Hotel President, costs 25 000 - 35 000 FCFA (€ 655). For now, the Hotel functions with minimum clients for the same operating cost. An increasing number of people, mostly middle class workers, are looking for environmentally friendly holidays. Although they are not aware of the certification, they can appreciate an eco-environment hotel.

HDP hiring practices also reflect its environmentally friendly policies. Locals are hired wherever possible, and males and females receive equal pay. When employees move to other companies, they take with them the outlook and knowledge gained during their time with HDP.

The important threats are the current economic climate; the Hotel is finding it difficult to meet the cost of operations since the number of clients is still low. Besides that, the high temperature which reaches 33.05°C during the dry season from January to March (Kouamé et al., 2014) will result in increased electrical consumption due to the use of air conditioning. Moreover, building the Hotel has disrupted the natural scenery between the hotel and the surroundings. The

use of components and their disposition interfere with the natural functioning of ecological processes and systems for life support.

In terms of outlook, the HDP must consider the implementation of solar co-generation. In this context, because of the Laboratory of energetic of our Institute which may contribute to the design and the implementation of such a system. There should also be plans to identify future measures to reduce carbon output in the areas of transportation, imported products and food miles. Here also our Department of Agronomy has the potential to help local people produce foods that will be purchase by the hotel through a warehouse. Our final contribution to this study was to address the concept of sustainable management of a hotel and this will be through the lifelong teaching program that was setup by our Department for which this study was the primary assessment of the management of a hotel in this country.

CONCLUSION

This study has identified aspects of the activities and services of the HDP that may present significant impact on the environment. Among them we may cite discharge to the air, water and soil that may lead to their contamination. We found also that waste production and management may impair the environment. Besides that, the utilization of raw material and resources such as water may lead to their depletion. Finally, the activities and services of the Hotel can have a detrimental effect on its site and local community.

Management practices that can alleviate these impacts were proposed. For example, the use of economic card for doors and sunshine for pre-drying of linen can significantly reduce the electricity cost. Water conservation practices such as collecting storm water for garden and lawn watering or laundry may reduce operational cost and water as natural resource depletion. The rainwater tank capacity should be studied and designed in order to take in account the height of rainfall in the area and the characteristics of the Hotel.

Since the hotel is located in central part of the country where sunshine is good, the hotel can use solar heater as energy conservation practice.

Most important is the setting up of training program for employees in order to use practices that may have no impact or reduce impact on the environment. A committee must be created in the company that will work towards a sustainable management practice. An awareness program must be design toward guests, clients, even local community.

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