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Pollution Prevention in a Tunisian Hotel

Name of company: Hotel Caravane Serail

Sector: Hotel

Number of employees: 50

Country: Tunisia

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Abstract

Hotel Caravane Serail is a 50-employee, 399-bed hotel located at an oasis at the gate to the Sahara Desert. The area in which the hotel is located is faced by a major problem of water scarcity. The hotel realised that there was a need to undertake water conservation measures which would protect the area, which is its principal attraction. A pollution prevention assessment was conducted by the Tunisian Cleaner Production Centre (CP3). The assessment identified opportunities for the hotel to conserve water, reduce energy consumption, reduce waste and improve working conditions. The measures identified represent potential savings of US\$ 10,000 per year. The hotel requested further support from CP3 in the form of training. As a result, the United Nations Environment Programme (UNEP) hotel training programme has been adapted to the Tunisian tourism sector. When implementation is completed communication and education of employees and customers will be the next major step for Caravane Serail. By demonstrating environmental commitment the hotel hopes to create a market niche as a "green" hotel, to attract additional clientele, thus increase revenue.

Country Overview

Tunisia is a country with a population of 8.7 million. Over 60 per cent of its total population is concentrated in urban areas. The Tunisian coast, which is 1,300 kilometres long and represents 25 per cent of total land surface, is presently home to 77 per cent of the urban population. Industrial development and urbanisation have led to serious environmental degradation. Since 1987 growing public awareness combined with the political will to engage in sustainable development have resulted in an improvement of the institutional framework for environmental protection. In 1988 the National Environmental Protection Agency (ANPE) was created, and the Ministry of the Environment was created in 1992. Approximately US\$ 600 million was allocated to environmental protection in the government's 1992-1996 five-year plan. The emphasis was put on reducing industrial pollution, and in particular on assisting small and medium-sized enterprises (SMEs) to engage in depollution programmes and explore environmentally sound technologies. SMEs represent 90 per cent of the industrial structure and play a leading and strategic role in terms of economic growth and

employment.

Sector Overview

Tourism is one of Tunisia's most important industries. 3.7 million tourists visited Tunisia in 1993. The number of tourists increased to four million in 1995, the majority of which were European. Lack of planning of tourism development has caused environmental problems which are presently being dealt with on a national level in a more strategic manner. The future sustainability of the tourism sector will depend on a proactive policy of environmental protection, as the major assets of the Tunisian tourism industry are the natural elements of sea, sun and sand. In addition, water scarcity is a nation-wide problem which is highly relevant to tourism. This problem will require the adoption of conservation measures by the sector especially along the Tunisian coast. A coastal zone management strategy will be developed in the future.

Tourism in Tunisia in 1993	
Economic Indicators	Totals
Number of tourists	3.7 million
Foreign exchange revenues	US\$ 1,113,700
Employment	57,603
Cumulative investments	US\$ 1,800,000
Number of hotels	571
Number of beds	144,008
Source: Tunisian Ministry of Tourism (ONTT) 1993	

Company Description

Hotel Caravane Serail was built in 1989 in Nefta, Southern Tunisia at the gate to the Sahara Desert. The principal attraction of the hotel is its location in an area rich in history and natural resources. The hotel expanded in 1993 and currently employs 50 people. Approximately 300,000 guests per year stay at the hotel, 95 per cent of whom come from outside Tunisia. The hotel has 399 beds and 145 rooms. Its facilities include an open-air swimming pool, a conference room which can accommodate up to 350 people, and a night-club. While the hotel is currently operating at a profit, the occupation rate is relatively low, averaging a mere 35 per cent in 1994 and 1995.

Driving Forces

Although the hotel is situated at a natural oasis, the surrounding area suffers from water scarcity. The hotel management realised the importance of undertaking water conservation measures and of contributing to the protection of its natural resources, which comprise its principal attraction. In 1994 water charges represented 43 per cent of total utility expenditures (water, electricity, fuel), and four per cent of revenue. Therefore, water conservation was also seen as a means of reducing these charges.

In addition, the hotel perceived the implementation of environmental management as a means of creating a market niche, which can be developed, especially in the European market. As such, environmental management is seen as a means of increasing the hotel's occupancy levels and improving business. The hotel also perceived a link between the quality of the service offered and the incorporation of environmental issues

into their day-to-day operations. The hotel participated in the CP3 pollution prevention programme described in the [Siozitet](#) case study.

Problem Definition

In 1995 a pollution prevention audit was carried out at the hotel. The main areas to be dealt with were identified as described below.

- **Water consumption:** Fresh water is a precious resource in Southern Tunisia. Water consumption at the hotel is measured by the meter. The hotel uses between 70 and 200 m3 per day.
- **Water quality:** This represents an important operational and environmental problem for the hotel. Calcium and sand particulates in the water corrode and damage the pipes and other equipment with which the water comes into contact. Such equipment must be replaced or repaired more frequently than normal.
- **Electricity consumption:** Electricity is used for heating, lighting, air conditioning, water heating, refrigeration, the swimming pool, and office. Electricity represents 50 per cent of total utility costs.
- **Propane:** Propane is delivered in returnable pressurised tanks and is used to operate the machines in the laundry room and the ovens in the kitchen. Propane represents seven per cent of total utility costs.

Implementation

The audit conducted by CP3 identified various possibilities for pollution prevention at the hotel. The measures recommended can lead to cost-savings of US\$ 10,100 per year.

Opportunities for Pollution Prevention					
AREA	POLLUTION PREVENTION MEASURE	ENVIRONMENTAL BENEFIT	INVESTMENT US\$	FINANCIAL BENEFIT US\$/year	PAYBACK PERIOD
Hotel management	Elaboration of a preventive maintenance programme	Efficient functioning of hotel equipment	None	Non-quantifiable: efficiency	Immediate
Swimming pool	Installation of a pool cover	Reduction of evaporation and water conservation	150	380	5 months
Gardens	Watering in the evening; use of a special sprinkling system; use of xeriscaping*	Reduction of water consumption	Minimal	4,200	Immediate
Rooms	Installation of water aeration devices	Reduction of water consumption	580	1,025	7 months
Rooms	Development of a towel/linen card system and training of personnel in its use	Reduction of water consumption and less wear and tear on hotel linen	130	167	9 months

Rooms	Use notices to encourage guests to conserve water	Reduction of water consumption	Non-quantifiable	Non-quantifiable: involvement of customers	Non-quantifiable
Kitchen	Installation of water aeration devices	Reduction of water consumption	10	460	Immediate
Pump room	Redesigning of water tanks; water filtering and softening	Improvement of water quality; reduction of wear and tear on equipment	Non-quantifiable	1,595	Non-quantifiable
Engineering	Switching off equipment when not in use; use of energy-saving equipment	Energy conservation	Non-quantifiable	2,240	Non-quantifiable
Propane gas	Repair leaks; turning off stoves and laundry machines when not in use	Reduction of propane consumption	Non-quantifiable	Non-quantifiable	Non-quantifiable
Solid waste	Use of amenity dispensers in bathrooms; purchasing policy	Reduction of waste	Non-quantifiable	Non-quantifiable	Non-quantifiable
TOTALS			870 + non-quantifiable costs	10,100	
*Xeriscaping is a gardening technique using native drought-resistant plants					

Results

The hotel requested assistance from CP3 in developing a training and communication programme for its employees. As a result, CP3 used the generic "hotel information pack", which had been developed by UNEP, and adapted it to Tunisian conditions. The draft manual has already been prepared, and the final version is expected to be ready in 1996. The hotel worked with CP3 in the development of the training manual, which will provide technical guidance and tools for sound environmental management in hotels in general. Before implementing the training programme, Caravane Serail wants to inform employees of its policies, and then to encourage them to participate in the development and implementation of the policies through training.

The Future

Hotel Caravane Serail believes that the pollution prevention recommendations which have been made will enable it not only to improve environmental performance, but also to improve the quality of the overall service offered. In addition, the hotel intends to use the cost savings realised to increase and improve customer amenities and satisfaction. Once it has implemented pollution prevention measures and communicated the changes with its customers and employees, the hotel will use its work to develop an "environmental label" and target eco-tourists with a specific niche market strategy to ensure its success in the future. Once the CP3 training programme and internal company programme have been completed, other hotels in Tunisia will be encouraged to take similar action. By leading industry-wide collaboration, the hotel will maintain a position at the forefront of positive change.

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