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ENHANCING SUSTAINABLE TOURISM IN THE SOUTHERN RED SEA REGION OF EGYPT

Part 5: Manual for Ecolodge Planning, Design, and Operation

MARCH 2008

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Disclaimer

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ACRONYMS

CEPA	Communications, Education, and Public Awareness
DMP	Destination Management Plan
EAP	Environmental Awards Program
EEAA	Egyptian Environmental Affairs Agency
EEPP	Egyptian Environmental Policy Project
EGP	Egyptian Pound
EMS	Environmental Management Systems
EPDU	Ecotourism Planning and Development Unit of TDA
GIS	Geographical Information Systems
GOE	Government of Egypt
HEPCA	Hurghada Environmental Protection and Conservation Association
IVC	International Visitor Center
LIFE	Livelihoods and Income from the Environment
LRS	LIFE Red Sea (Project)
M&E	Monitoring and Evaluation
MRF	Material Recovery Facility
NCS	Natural Conservation Sector (of the EEAA)
RS	Red Sea
RSG	Red Sea Governorate
RSP	Red Sea Protectorate
SME	Small and Medium Enterprises
SOW	Scope of Work
SRS	Southern Red Sea (Region) from Marsa Alam to Sudan border
START	Scholarship for Tourism Administration and Rural Training
STTA	Short-term Technical Assistance
SW(M)	Solid Waste (Management)
TDA	Tourism Development Authority
USAID	United States Agency for International Development
USD	U.S. Dollar
WGNP	Wadi el-Gemal National Park (Wadi el-Gemal-Hamata Protected Area)

PREFACE

This Ecolodge Planning, Design, Construction, and Operations Manual was specifically designed for Egypt's Tourism Development Authority (TDA). It was prepared within the Sustainable Economic Growth Initiative of the United States Agency for International Development's (USAID) Livelihoods and Income from the Environment (LIFE) Red Sea Project (LRS), which is being carried out to continue support for sustainable tourism development in the Red Sea Governorate (RSG).

The manual builds on the previous 5-year Egyptian Environmental Policy Program (EEPP). It is designed to meet the needs of local communities and expectations of tourists, while still protecting the environment and enhancing future economic opportunities. The ecolodge, as a source of environmentally responsible accommodation and an attraction for the desirable ecotourism market, responds to the objectives of the LRS Project.

The purpose of the manual is to identify the criteria that would contribute to a quality ecolodge development and operations on TDA lands in Egypt.

DESIGNING AND OPERATING THE MODERN ECOLODGE

The criteria for ecolodge development and operations have evolved significantly within the last few years. This has been driven by market-demand and growing consumer interest in responsible travel—especially the growing concern to reduce use of fossil fuels to generate electricity and the resulting impact on global warming. New demands are being placed on facilities that wish to be considered environmentally-friendly.

Water conservation is also a major concern for both consumers and suppliers in desert environments. Consequently, all ecolodges must demonstrate a serious effort to reduce consumption and reuse or recycle water.

PREPARATION OF THE MANUAL

An international tourism consultant reviewed:

- All former reports that discussed the development of ecolodges and in particular the report 'Ecotourism Development Guidelines'
- Other environmental management documents that had been prepared under the program.
- More than a dozen well-known international ecolodges and a selection of 10 to be included in the manual.

The most important function of the manual will be to serve as a checklist that enables TDA to:

- Assess ecolodge proposals from investors by using predetermined evaluation criteria and a value-rated appraisal system
- Work with the ecolodge developer to construct and operate a quality and credible ecolodge.

ECOLODGE MANUAL DESIGN TEAM

The individuals involved in the preparation of this manual were Mr. Assem El-Gazzer, a project coordinator from the LRS Project, implemented by Chemonics International (the USAID

contractor) and Mr. James MacGreagor, ecoplan:net ltd. founder and president, a specialist in ecolodge planning and operations.

SECTION 1: AN INTRODUCTION TO THE ECOLODGE CONCEPT

THE ECOLODGE AND ECOTOURISM

Ecotourism is environmentally responsible travel to areas that typically have a special natural environment. Ecotourism must also:

- Conserve and enhance the environment
- Educate and informs the visitor
- Support conservation and community-based activities
- Sustain the social, cultural and financial well-being of local residents, small businesses and communities.

Ecotourism ensures that the natural and cultural heritage is maintained and improved, historic and archaeological resources are protected, and the local economy benefits directly (salaries, jobs, and training) from ecotourism revenues.

The 'Ecolodge' is an important component in the overall ecotourism experience and must reflect all of the above conditions within its day-to-day operations.

The ecolodge was defined by ecoplan:net ltd. (Canada's first ecotourism and sustainable tourism consulting firm) as, "tourism accommodation that responds to the highest standard of sustainable architecture and site planning, including:

- Implementing current energy and water conservation technologies
- Using local design and construction methods
- Practicing responsible waste management measures.

The ecolodge should guarantee:

- Abolition of hazardous materials
- Assessment of life-cycle environmental impacts of all building materials and all operations-related purchases
- Qualified guest interpretation programs
- Significant contributions to local economic development through fair wage practices and use of local suppliers.[1]

Egypt is well positioned to offer these ecotourism conditions to the environmentally responsible national and international tourist. It is already a popular 4-season nature tourism destination, particularly to the Red Sea and desert environments. However, the abundance of national parks and natural areas, beautiful coastlines, deserts and mountains, can be enjoyed by many ecotourism segments including:

- Hiking and backpacking
- Bird watching

[1] Tortugero National Park (Costa Rica) Ecolodge Business Plan, Ecoplannet Limited for RBA Architects, British Columbia, Canada, 1996

- Photo safaris
- Sea kayaking
- Visits to tribal villages
- Camel trekking
- Wildlife viewing and interpretation
- Flora and fauna research
- 'Voluntourism.'

Ecotourism is available for all market segments. Ecotourism and ecologically conscientious accommodation is no longer the penchant of a niche market. Consequently, this Ecolodge Manual has been design to reflect the concept that an environmentally friendly facility can appeal to all travelers

To some extent, most tourists have now become 'ecotravelers.' For example, a recent survey by Tourism Concern in the UK found that 96 percent of travelers would rather stay in an environmentally responsible resort than a 5-star property.

Ecological travel has now become more than just "green travel," it is also mindful travel; personally fulfilling, challenging, and enlightening. Eco-travel encompasses a wide range of activities from a cultural visit to a heritage site, to visiting a local Bedouin camp, to exploring a national park. It can be the quiet pleasure of sampling unique foods beneath a desert tent, learning how to make Bedouin coffee, or taking a wilderness adventure like sea kayaking, hiking or bird-watching.

Consequently the ecolodge operator must strive to broaden his clients' horizons and allow them to explore beyond what is familiar. Tour packages associated with the ecolodge must take travelers off the conventional or mainstream circuits and encourage a genuine exchange with the natural environment, local communities, and culture, and provide them with a deeper appreciation for the diversity of Egypt.

As ecotourism-related activities gain in popularity, one of the biggest challenges will be balancing the obvious benefits with the potentially negative consequences. Like other forms of tourism, ecotourism and an ecolodge can create social and environmental problems.

The degree of impact ultimately depends on the quality of eco-business management, level of employee training and awareness, and behavior of the tourists themselves.

No matter where tourists go or how they travel in Egypt, they will have an effect on the environment and the people they encounter. However, traveling conscientiously and staying in responsible accommodation can reduce the negative impacts, and in most cases, can help conserve the environment and preserve local and tribal cultures.

The Ecolodge Manual

This ecolodge planning, design and operational manual is one of the first of its kind and the first to be published in Arabic. It has been prepared specifically to assist Egypt's TDA:

- Assess ecolodge proposals that are submitted by the private sector
- Work with investors to achieve higher standards of environmental and socially responsible accommodation
- Establish basic criteria for all environmentally responsible lodging in Egypt.

While many criteria reflect international standards, they also reflect the unique Egyptian context in terms of it's desert and coastal environment, market demand for the Egyptian product and the current state of ecolodge development in the country.

The document also recognizes both the current trend towards the construction of more sustainable tourism facilities as well as the Egyptian government's interest in promoting and supporting accommodation development that protects and conserves the environment. It builds on current reports prepared for USAID such as 'Proposed Ecotourism Standards for the Southern Red Sea Region,' prepared by the Egyptian Environmental Policy Program, by its USAID-funded Policy Support Unit, implemented by International Resources Group, Cairo, 2004. In that respect, the standards and criteria identified in the manual could be applied to any lodging facility including coastal hotels and resorts. While it is understood that the ecotourist is a desirable market for Egypt, it must be appreciated that there is a much larger group of travel consumers that are inherently interested in staying in a property that adheres to the highest standards of environmental protection.

Recent European consumer research studies indicate that more than half of this segment is prepared to spend up to 10–15 percent more to stay in environmentally responsible or 'green' facilities.

The manual describes in detail specific Environmental Impact Assessment (EIA), site development, engineering, architectural, and management criteria. It is also important to remember that these criteria are presented within the perceptive of the triple bottom line that accentuates the social, economic, and environmental sustainability of the lodging business.

It is hoped that the user of this manual finds the necessary information to substantially improve upon current design, construction, and operational practices, and commits to support 'eco-accommodation' facilities that have a smaller footprint and minimize the serious environmental challenges that face our planet.

In order to achieve the purpose that has been outlined above it is necessary to have the structure and content that provides TDA and investors with a clear understanding of the requirements of developing and operating an ecolodge. Consequently the manual is presented within three parts:

Section I: An Introduction to the Ecolodge Concept

Section II: Ecolodge Planning, Construction, and Operations

Section III: Assessing the ecolodge proposal (the checklist)

Collectively, the three components provide the necessary information and insights to assist TDA and private sector investors to realize the goal of building and operating quality ecolodges in Egypt.

How to Use the Manual

The layout of the manual reflects the way it is intended to be used by both TDA and an investor**.** While not specifically designed for the latter, it is reasonable that a proponent may want to study this document in order to make a successful presentation to TDA. It is in the best interest of the investor to follow the guidelines as closely as possible to achieve the maximum number of points.

The manual has been structured to perform 3 tasks.

Section I introduces the reader to the basic concepts of ecolodge development, including increased travel consumer (market) interest in environmentally responsible vacations.

Section II includes a comprehensive description of each of the criteria associated with the planning, construction, and operations of an ecolodge. This section has been design to provide TDA, in particular, with an appreciation of the rationale associated with each criterion. The investor who is not familiar with environmentally responsible architecture would also use it to improve his/her understanding of ecolodge design and operations. Almost 200 criteria have been provided and described in detail. The components of an ecolodge business plan, EIA, life-cycle analysis, and site analysis are included as annexes.

Section III has the checklist and rating system that can be used to assess the quality of each ecolodge application. By applying the proposed rating system, the TDA will be able to assess the degree to which the investor's project reflects the true intent of an ecolodge.

The Ecolodge Development Concept

The ecolodge is a product of the international ecotourism movement. This phenomenon dates back to the early 1990s, but it was not until the latter part of that decade that the ecolodge became a significant component within the overall ecotourism product offering. As of 2007 it can be assumed that the ecolodge can be found in most major tourism destinations with a higher concentration in Central and South America, Australia, Asia, and the Caribbean. More recently there has been increased construction in the USA/Canada and select areas in Africa and Eastern Europe.

North Africa and the Middle East have been slower to integrate the ecolodge and environmentally responsible accommodation into the tourism product mix. This has been in part because of the softer demand for ecotourism from the European marketplace as well as the lack of the resource base that made ecotourism popular in the first place. For instance, the initial ecotourists—particularly as they evolved in North America—were attracted to tropical rainforests: forest and wildlife viewing available in these biologically rich environments (e.g. Costa Rica National Parks, the Amazon, Belize, and the Galapagos Islands). Even destinations with remarkable wildlife such as the Southern Africa nations have not really capitalized on the ecotourism/wildlife observation market in the way that Central America has.

Demand for responsible products has recently changed, particularly in Western Europe where the concerns about global warming have moved environmental issues to the forefront of the political and economic agenda. A comprehensive 2007 Tripadvisor survey (www.tripadvisor.com/) indicated that 38 percent of travelers surveyed have stayed at an environmentally-friendly hotel, 66 percent believe environmentally-friendly measures in travel are making a difference, and 9 percent specifically seek out environmentally-friendly hotels. Concern for climate change has made energy conservation the number one requirement for an environmentally responsible property, but that is followed closely by water conservation and waste management.

Another study of Canadian travel consumers indicated that more than 70 percent were prepared to pay for carbon offsets and 29 percent were cutting back on air travel in an attempt to reduce greenhouse emissions, again demonstrating a new and dramatic concern for environmentally responsible travel.

Lonely Planet's 2007 Travelers' Pulse Survey, which polled more than 24,500 people worldwide, showed 84 percent of respondents said they would consider offsetting their emissions in the future and almost one-third (31 percent) had done so in the past. One of the strongest changes for the future was in volunteering. A huge 79 percent of respondents said they would or might volunteer in their future vacations, and 25 percent have already done so in the past. Seventy percent of travelers said they had purposefully travelled in a low-impact way in the past, and

more than 90 percent said they would or might do so in the future. Travellers also have good intentions when it comes to protecting the environment. Although 36 percent had never purposefully considered the environment in their past travels, 93 percent said they would or might purposefully partake in environmentally friendly travel in the future

Finally this year's VISA International Consumer Attitude Survey of 5,000 travel consumers in 10 markets found that 88 percent would choose an environmentally operated hotel and tour operator if it were available.

The results of current surveys as well as various consumer trends associated with concern for the environment, particularly in Egypt's main tourism markets, suggest a broader definition for an ecolodge may be in order. With as much as one in three travellers prepared to pay a premium for an environmentally responsible accommodation, ecolodging seems to have progressed beyond the sole interest of the ecotourist. This is not unusual and those working in the ecotourism movement have long talked about the greening of mass tourism and that eventually, in the words of the late Leslie Jarvie, a pioneer in the ecotourism business, "all tourism must become ecotourism!".

The degree to which Egypt's tourists are aware of environmental concerns has not been identified. However, many surveys indicate that support for socially and environmentally responsible products in Egypt's Western European markets—particular, Germany, the UK, Italy, France, and the Netherlands—is amongst the highest in the world. Furthermore, statements and actions from many of the largest European tour wholesalers and operators (Thomas Cook, TUI, First Choice) indicates they are making a sincere effort to offer a truly 'green' product for their increasingly demanding clients.

These source European countries provide as much as 80 percent of the travelers to the Southern Red Sea region. While they may not initially be interested in the classic ecolodge, they more than likely have a keen interest in spending their money in a property that clearly demonstrates a concern for the environment. All accommodation, but in particular 'ecolodging' must endeavor to respond to this travel consumer demand.

This manual will build on the experience and research that has been developed by the ecolodge sector and will integrate the exceptional amount of work that has been done by such leading resort chains such as Accor, Fairmont, and Movenpick. This new accommodation type for Egypt could attract a wider scope of investors and position the country as a new sustainable tourism destination.

Ecolodge Development Principles

It is increasingly obvious that the resort sector has been making a sincere effort to emulate many of the environmental procedures that have long been integrated into the standard ecolodge. They include but are not limited to:

- Use of local building and landscape materials
- Hiring local labor during construction and operations processes
- Applying innovative water and energy management and conservation solutions (many lodges have been very creative in identifying and adapting new technologies)
- Preparation of informative environmental education programs and materials.

There are two principles that are an integral part of the ecolodge development process that have not been integrated in the new 'green' resorts and hotels. They are:

1. Maintaining a scale that reflects the small- to medium-size business

2. Actively including local residents in the development of the facility.

Scale of Development

For the purpose of the manual a property will be considered an ecolodge if it is larger than the typical 20–30 unit property. With a proper layout that reflects the ecotourist's desire for both contact with nature and privacy, an ecolodge in the Red Sea environment could have as many as 50–60 units, particularly if the layout were divided into separate clusters of, say, 15–20 units. In an era of more personal and customized travel, these smaller groupings of accommodation units are increasingly in demand particularly for wellness retreats, spas, and facilities that offer a more personalized, specialty natural and cultural experiences.

Public Participation in the Planning Process

Most tourism facilities in the Red Sea region have not included participation from the local population in the planning and development processes. Under most contemporary planning programs, this is less than acceptable. Those interested in building a designated ecolodge in Egypt must ensure a reasonable level of local community participation in the development of the facility. The purpose is to respect the intrinsic rights of those affected by the development and guarantee that the ecolodge will have a positive impact on the local economy.

Best Practices in Ecolodge Development

There are hundreds of legitimate ecolodges worldwide and all of them practice some level of environmentally responsible design, operation, and community involvement. Ten such procedures have been identified as 'Best Practices' in this manual. They have been selected from a comprehensive review of dozens of properties. Each one was chosen because it has a specific character or orientation that should be of interest to the reader and enable the TDA to appreciate a perspective on the variety of solutions that have been used to protect the environment.

For example, the 3 Rivers Eco Lodge & Sustainable Living Centre in Dominica offers several local educational programs based on tourism revenues; the Maho Bay Camps and Resort on St. John, in the US Virgin Islands have an innovative recycling program; The Ecolodge at Siwa, Siwa, Egypt, exemplifies the use of local construction materials; and Lapa Rios Rainforest Ecolodge in Costa Rica protects a large area of rainforest adjacent to Corcovado National Park.

However, they all meet the basic requirements of an ecolodge, including:

- Use of local construction materials
- Employment of local residents to operate and (in some cases) manage the facility
- Integration of water and energy conservation technologies
- Participation and involvement with local communities in all aspects of visitor services
- A portion of profits returned to community and conservation projects
- Wastewater treatment and recycling
- Various waste management schemes, including composting and recycling
- Fresh food, purchased locally and typically organic.

Unfortunately, only two of those properties mentioned above are from a desert environment; however, all ecolodges emulate basic environmentally-responsible practices that can be infused in any ecolodge in any environment.

For a description of the 'Best Practices,' see Annex I.

SECTION 2: DESIGN AND DEVELOPMENT GUIDELINES

PART I: PHYSICAL AREAS AND STANDARDS

Area: Dimensions and Surface

Total Number of Units

The number of units for an ecolodge varies with the size of the site, the reputation of the destination (as an ecotourism region), and the financial capacity of the investor. Smaller business entrepreneurs or non-governmental organizations (NGOs) have typically provided the financing for ecolodges. Consequently, the average number of rooms that are currently found in this industry is not necessarily a good indication of an acceptable size.

The International Finance Corporation (IFC) has suggested the maximum size of an ecolodge should be 70 units. This manual accepts that size, but there are several factors that should determine the size of the ecolodge:

- Overall size of the site (larger sites can support more units at a lower density)
- Density of vegetation (vegetation offers privacy and a sense of separation between units)
- Landforms and topography (larger facilities—more than 50 units—can be divided into small clusters).

Built Area

The ecolodge development, including accommodation units, food and beverage services, and utilities should be contained within 10 percent of total surface. The remaining recreation, access, and maintenance facilities will be strategically located throughout the rest of the site. This remaining 80 percent will also be used for landscaping with an emphasis on screening the individual units and other facilities.

Accommodation Density

Density will respect the same standards as for a 4–5 star resort at 4–6 rooms/feddan (4,200 m^2).

Building Types and Height

BUILDING TYPE

The ecolodge can consist of:

- An all-inclusive lodge structure with more than 2 rooms and typically 8–12 rooms
- One unit/one floor bungalow or cabin (semi detached or independent)
- One unit/two floor bungalow or cabin (semi detached or independent)
- A mix of any of the above.

BUILDING HEIGHT

The maximum height is two floors. Some investors may prefer a 2-story option because it has a smaller footprint, provides an interesting spatial arrangement, and can offer guests better views, particularly towards the sea or other vistas.

The two floor limit may be exceeded for certain facilities such as roof patios or observation decks.

Setback from Shoreline (Coastal Site)

The legal setback for fixed buildings is 200m.

This is substantially more than necessary for an ecolodge, where 75 m would be more appropriate unless there is a specific environmental feature to be protected. Light structures such as decks and outdoor eating areas can be 25m from the high tide mark.

Permission for adjustments to the setbacks should be taken to the Shoreline Protection Authority.

Setback from Road (Coastal Site)

The current TDA guidelines suggest that 50m are required as a setback from the road. This may be inadequate for an ecolodge if there is noise and visual contact with vehicles. This market expects the 'perception' of a remote and isolated site. As guidelines, the setback should be a minimum of 200m when there is no screening. With generous use of screening (vegetation) and constructed landforms or berms, 100m is minimum.

Setback from Road (Inland Desert Site)

Desert locations within TDA's 5 km corridor are different and provide an opportunity to offer an adequate setback to provide the sense of isolation and a desert wilderness environment. The final location should also consider ease of pedestrian access to the coastline and marine resources. The minimum setback would be 1 km with no screening.

Room Size

The size of the ecolodge room depends on several factors, including demand, market positioning of the ecolodge, and the proposed mix of room dimensions. The trend over the past decade has been to offer larger accommodation units while still protecting on-site resources and minimizing impacts. The larger room may be desirable in the Red Sea Region because of the supply of resort facilities, many with deluxe size rooms at economy rates. Four options should be considered: standard and deluxe rooms, suites, and eco-tents. These room sizes do not include a kitchenette, which would add another third to the size or dimensions of the unit.

All ecolodge units require a balcony or veranda (porch).

STANDARD ECOLODGE

Medium-priced ecolodge room sizes are 27–28 m^2.

The proposed area for a standard room is 26–30 m^2.

DELUXE ECOLODGE

The ecolodge market is continually moving up-scale with increasing room sizes. Rooms average 36–37 m^2. The proposed area for the deluxe room is 37–39 m^2.

ECOLODGE SUITE

The ecolodge suite has two sleeping areas (bedrooms) and shares a common area with a larger salon and balcony. They are frequently used by families or two couples traveling together (about 20 percent of the ecotourism market). The proposed area for the ecolodge suite is 36–40 m^2.

ECO-TENT UNIT

The eco-tent is increasingly popular because it provides the guest with more direct contact with the environment and it reduces capital costs without necessarily reducing the rental rate. Many safari-style eco-tents, with quality furnishings can be rented at rates that are much higher than even 4 or 5 star resort accommodation. The proposed area for the eco-tent is 25–38 m².

Room Components and Areas

The mix of components within the ecolodge unit should be of importance to TDA. If certain guidelines are not respected the room may not meet the basic needs of the guests. The following mix of spatial arrangements is proposed:

- Entry and Storage: 15–20 percent
- Living Area: 30–40 percent
- Sleeping Area: 20–40 percent
- Bathroom/Dressing Area: 15–20 percent
- Total furniture: 33 percent
- Add another 30 percent for kitchenette (optional).

Guest Circulation, Administration, and Services Areas

The ecolodge has many of the basic circulation, administration and services areas of the standard resort. There are a few exceptions as an ecolodge typically has a reading room and/or resource centre and a multipurpose room for viewing videos, presentations (by experts) and local entertainment.

Ecolodges are increasingly popular with the fast growing health and wellness market. This suggests that health facilities may be added.

Facilities to be considered are:

- Office, hallways, lobby, storage
- Retail space
- Restaurant and lounge
- Resource centre, reading room,
- Health center
  - Exercise room
  - Skin treatment and massage room
  - Sauna.

Approximately 45 to 60 m² per room should be considered for all these service facilities. For instance a 55-unit ecolodge should consider an additional space of between 2,800–3,000 m² for these services.

Food and Beverage Area

Approximately 1.1–1.7 m2 are required for each guest.

The final size of the restaurant will depend on the number of restaurants and if there are more than 1 sittings. A 60-unit ecolodge, which could have more than 140 people at full occupancy, may have 2 sittings to accommodate 60–70 persons each. Because of the mild Egyptian climate, 50–60 percent of the seating area may be on a covered outside deck. This is appropriate in the

coastal sites because they allow better proximity to the shoreline for better viewing and cooler temperatures.

Recreation Facilities

The mix of recreation facilities will depend on the preferences of the investor. Those that would be acceptable include tennis court, games area, and a saltwater swimming pool. The latter would have the most significant impact on the environment (pump and filtering); however, with the use of salt water, evaporation control, and solar generated motors this can be minimized. A saltwater swimming pool requires a surface area of 2–3 m^2 per swimmer. A hot tub should be adequate for 8–10 persons.

Parking

Parking lots can have a significant impact on the development of the site, particularly for the larger 50–60 unit facilities. While most travelers will arrive at the site by minibus there is a growing independent 'fly-drive' market where the guest rents a car at the airport and experiences the destination with their own transportation.

The final size of the parking areas will be determined by the investor and will be based on the mix of car and bus. Each lot should be adequately screened with vegetation and landforms and covered parking stalls (for sun protection).

The proposed size of the stalls are:

- Automobile: Width: 2.5m × 5.5m
- Motor coach: 3.5m × 12m
- 4×4 vehicles: 3.5m × 6.0m
- Small truck or camper: 3.5m × 6.5m.

Entrance Road

The entrance road provides an important part of the arrival experience at the ecolodge. The road alignment should be curvilinear and conform to the shape of the topography. Other considerations include:

- Providing views to special attractions of the site
- Views are controlled by vegetation and landforms
- Travel surface treatment: compacted local gravel
- Maximum grade: 6 percent
- Surface area to be kept to a minimum, i.e. 7m wide.

Walking and Interpretive Trails

The ecolodge site is characterized by a network of trails that enable the guest to experience the natural and cultural resources of the area.

These trails should include:

- Interpretive signs identifying local plants
- Seating area with sun protection
- Natural walking surface using crushed local gravel or flat stones
- Average width: 1.2–1.5m.

PART II: CORPORATE POLICY STAKEHOLDER PARTICIPATION AND BUSINESS PLAN

Company Environmental Record (History) and Policies

Previous Tourism Accommodation and Hospitality Experience

Lack of experience in the accommodation sector is one of the major reasons for bankruptcies in the tourism business. All too frequently investors who have made their money in other industrial sectors are attracted to the opportunity to expand their investments into the hospitality sector. Their lack of knowledge can affect all aspects of the development of a lodging facility, from the hiring of an equally inexperienced architect to inadequate marketing and employing untrained staff.

Typically a sophisticated investor would have at least 10 years of accommodation experience before deciding to build an ecolodge.

However, a local NGO, with international backing may consider the economic opportunities worth purchasing the land despite a lack of previous involvement in the hospitality sector.

The rating system might consider:

No experience	0 points
Experience in real estate in the region	2 points
Experience in the associated hospitality sectors (e.g. a tour or travel agency)	5 points
Experience in the accommodation sector	7 points

Ecolodge/Eco-enterprise Development and Management Experience

The reasons for an investor or an operator becoming interested in the development of an ecolodge may include:

- An awareness of the growing tourist and consumer market interest in environmentally friendly products,
- A serious interest in nature and environmental protection
- Creating local economic development opportunities (particularly NGOs)

It is therefore possible that the proponent may have previous experience in the eco enterprise sector and has an understanding of the activities (construction, operations, purchasing) involved in an ecolodge development. The degree of participation will determine the rating. For instance:

Previous use of conservation technologies	2 points
Operated a certified (e.g. ISO 14000) company	5 points
Owned and operated a fully integrated environmental responsible company	7 points

Corporate Environmental and Sustainable Development Policy and Performance Standards

This category would give additional support (points) to an investor or NGO that currently operates within a comprehensive corporate environmental policy. As well to receive the full

points the company must publish the policy, conduct audits, monitor results and have a reporting system in place. Points would be accorded as follows:

Published environmental policy	2 points
Also conducts regular audits and makes appropriate changes	5 points
Also has a published reporting system	7 points

Knowledge of Egyptian Environmental Laws and Regulations

The ecolodge operator is not only familiar with national and local environmental laws but is aware of the importance of supporting the regulations. There must be an understanding of both land-based and marine regulations.

Desert/Coastal Construction and Operations Experience

Construction and operations of environmentally responsible accommodation in the relatively severe conditions of Egypt requires an understanding of the unique conditions including exceptionally hot weather, a fragile desert and marine environment, operating in a sand/rock setting, and scarcity of water.

No experience	0 point
Experience in either construction or operations	2 points
Experience in both construction and operations	5 points
Exceptional understanding of the desert and marine environment	7 points

Participation in Regional and/or National Environmental, Social, and/or Tourism Organizations

The ecolodge owner and operator should be actively involved in community, environmental and tourism affairs at the national and local level. The ability of the proponent to demonstrate previous commitments and involvement with these associations and organizations will determine the number of points.

Membership in an International Ecotourism/Ecolodge Association

Memberships in organizations associated with ecotourism and ecolodges is an indication of the proponent's interest in the sector as well as their immediate access to information and statistics. The length of time of the membership should be taken into consideration.

Local Stakeholder Involvement and Benefits

Community Relations Initiatives Plan

The proponent must demonstrate awareness of the importance of both informing the local communities of the proposed ecolodge development as well as including them in the design and operations of the facility.

This commitment is best demonstrated by the preparation of a 'Community Relations Plan' that indicates what has been done to date and the initiatives to be taken to establish a relationship between the enterprise and the local stakeholders.

The plan may include but not be limited to:

- Knowledge of the local community and formal/informal economy
- Proposed long term communication and community involvement techniques
- Proposed impacts on local residents, including job creation, creation of small- and medium-sized enterprises (SMEs) and loss of privacy
- Opportunities for local involvement in the operations of the ecolodge including a cost sharing or co-management arrangement
- Opportunities for local purchases including, produce, meats and fish, and handcrafts.

Stakeholder Contact and Local Awareness of the Ecolodge Project

Before the ecolodge gets to this evaluation stage, the proponent should be able to demonstrate previous contact with the local community. The extent of the communication will depend on the location.

As a guideline the developer should consider:

- Meeting with the leadership of all communities within 20 km.
- Meeting with all tribal groups within 40 km of the ecolodge and particularly those living in a protectorate
- Identification of local labor and skill sets
- Identification of and discussions with local contractors and suppliers of construction materials, food and beverage, and guide services.

Local Ownership, Equity Participation, or Co-management

A fundamental component to ecotourism and sustainable tourism development is the distribution of economic benefits from the tourism project to the local communities and residents.

Equity Participation

One of the more successful ways to assure distribution of benefits as well as offering the locals more participation in the overall project is to allocate an equity position in the business. This can be in the form of a joint venture with the local private sector (SMEs, corporations, private investor, or lending [credit] institution).

Equity can be secured by several means including:

- Use of community based finances from say a community development association (CDA)
- Support contribution from an international NGO (development, environment, training) or a donor associated with the project and/or the economic development and environmental protection of the region
- Several select local business people (private equity) with close ties with community development initiatives

Co-management

Local residents can benefit from participation in the ecolodge by being allocated a position on the board of directors and a role with the overall management of the facility. This approach can introduce locals to management principles as well as further ensure the protection of the natural resources. With some level of co-management must come financial remuneration to the community through job creation and support for select community initiatives.

Local Ownership

While there are many examples of community owned and operated ecolodges, particularly in Latin and Central America, this has not yet happened in Egypt. This is most likely because the notion of community based development projects is not strong (nor promoted by environmental NGO's as it is in Latin America) nor is the tourism seen as viable economic options by the local business community. Furthermore most communities do not have the financial resources to embark on these types of projects.

Nevertheless it would seem to be increasingly possible for local entrepreneurs, who perhaps have made profits in other sectors such as fishing and mining, to consider the co-development of an ecolodge in their region.

Sponsorship of Local Environmental Activity

The ecolodge is a catalyst for changing environmental attitudes at the local and regional level. One of the easier and most effective ways to ensure the ecolodges contribution is to sponsor or at least participate with local schools in environment related programs through financial and employee contribution. Ecolodge employees can make a significant contribution because of the environmental knowledge they receive at the ecolodge and if they also come from the community that is an additional asset for change.

The list of potential projects is as limitless as the level of contribution of the ecolodge. There are several themes that re typically associated with the ecolodge. They include but are not limited to:

- Environmental conservation
- Water conservation and recycling
- International programs (e.g. Earth Day)
- Literacy and education programs
- Waste management and composting.,

It is also a plus for the identity (branding) of the ecolodge if the clients can be an ongoing part of the program with, say, contributions made throughout the year.

Local Purchase of Supplies

A good business relationship with local producers and suppliers is an indispensable component to the operations of a quality ecolodge. Not only do contracts and agreement support local economic development but also it can ensure that the ecolodge has a good and constant supply of fresh (and frequently organic) produce, fruits, vegetables, meats and fish.

The proponent must identify the types of arrangements that are being considered in the following sectors:

- Fruit and vegetables
- Fish and meats
- Handicrafts
- Guides and interpreters
- Musicians and performing artists.

If these services are not available the proponent should demonstrate their importance by offering the necessary support (financing, training, technical assistance) to ensure that they are eventually obtainable.

Promotion of Local Arts and Crafts

The ecolodge can be a regional centre for the expression and promotion of local and traditional crafts and performing artists. Both are very appealing to most travelers and especially the ecotourist. It is in the best interest of the ecolodge and the local artists to have an ongoing program of craft production and sales, traditional music, storytelling and other forms of entertainment within the ecolodge.

The proponent will be expected to demonstrate the types of programs that will be offered. They may include music, dance, storytelling, etc.

Commitment to the Community

Cultural and Sports Activities

The relationship between the ecolodge and local communities must be is direct and continuous. That is best accomplished by instituting or supporting several regular events or initiatives between the ecolodge administration and community leaders and organizations.

The proponent must demonstrate an understanding of the opportunities that are available to collaborate with the communities. Typical ventures include:

- Sponsoring a sports team (uniforms, equipment, tournaments, etc.)
- Supporting a group of local musicians
- Leading a community clean-up and recycling program.

Community Infrastructure Problems and Emergencies

An ecolodge has many specialists on staff that may be of assistance to local communities, especially in emergencies. For instance, many properties have as much or more infrastructure than a small tribal village. The operations engineer of a 60 unit facility has experience in such areas as waste management, vehicle repair, water conservation technologies, pumps and machinery, etc. These staff can provide the technical assistance to communities in the overall operations of their facilities.

Other specialists that may be of assistance to a local community include:

- *Chef* that can provide community classes on nutrition
- *Lifeguard* who can offer swimming classes to school children
- *Marketing director* who can assist the community with the promotion of crafts and other goods.
- *Accountant* who can assist with the management of community finances.

The participation of these and other ecolodge professionals and technicians at the community level may also encourage guest to assist in community based programs.

Community Liaison Officer

The best way to establish a firm relationship with the local communities is to have one staff person responsible for the ongoing relationship and communications. This would not necessarily be a full time position but may include one of the staff that is responsible for visitor services.

The proponent must demonstrate how much time this individual would dedicate to community affairs.

Business Plan, Market Analysis, and Financial Viability

Business Plan

It is unlikely that the ecolodge business would succeed without a professional, and well-researched business plan.

Consequently the Ecolodge Business Plan (EBP) is a key component in the evaluation of the proposed ecolodge viability. If the investor cannot clearly demonstrate the financial capability of the facility, including:

- An understanding of the specialty markets attracted to the ecolodge
- The focus on sustainable landscape planning and architecture
- The commitment to energy and water conservation and waste reduction
- The costs associated with the management and operations of an environmentally responsible facility then it is unlikely that the facility will be successful and the project should be rejected.

Business Plan Purpose

A business plan is a framework and blueprint for the development, marketing and management of the ecolodge and describes the goals, tactics, strategies and management activities to achieve success in the business. It should:

- Provide a clear description of the project including current conditions
- Provide a road map that outlines the requirements to establish a sustainable business over a 3 to 5 year timeframe
- Provides owners, investors and TDA with the necessary accurate information to determine the amount of capital that is required, the debt to equity ratio and the return on investment
- Function as internal blueprint for owners, operators and managers, particularly in the first few years of operation.

If it used to attract investment or secure land from TDA it must be comprehensive, realistic and well presented. For the purpose of this manual it is assumed that the proponent has the investment (see financing plan).

TDA will only review the project from a bushiness sustainability perspective including source of financing as outlined in the plan.

Preparing a Business Plan

The Ecolodge Business Plan (EBP) is a critical feature in making a decision about the merits of the project. Therefore it is important to review the credentials of the author (s). It may be prepared by the owner, investor or an independent consulting firm (including several specialist). In all cases they should demonstrate experience in the following:

- A knowledge of all components of tourism business planning, from market demand to break-even analysis
- Market research and an in-depth understanding of the specialty tourism market segment that could be attracted to the region

- An appreciation of the cost implications (and savings) of integrating environmental technologies and management into the capital and operational costs.

Many bankruptcies in the tourism industry have been a result of an ill prepared unprofessional business plan that had

- Unrealistic (or improbable) sales forecasts,
- Incorrect fixed costs estimates
- Inadequate construction and operations cost estimates due to more remote location and
- Inaccurate revenue projections based on poor research.

There are a few conditions that are specific to an ecolodge, which can affect the risk associated with the business. They include but are not limited to the following:

- Loss of environmental integrity including changes in the environmental quality of adjacent national protectorates (e.g. loss of land and marine species, landscape destruction, or poorly planned facilities)
- Inadequate waste management resulting in litter and marine debris throughout the region
- Loss of traditional cultural values because of tribal people leaving the region (urban migration)
- The additional costs associated with interpretive programs, guide services, and contributions to conservation.

Ecolodge Business Plan Structure

The degree of detail associated with the EBP is largely dependant upon the proponents desire to demonstrate their knowledge of the ecolodge and accommodation sector. In all case they should provide the TDA with more than enough information to make the assessment of the viability of the business.

The following chart identifies the major components of the EBP. It can be distributed to potential investors to ensure that they meet the TDA requirements.

ECOLODGE BUSINESS PLAN SUMMARY

1. **Executive Summary**
   - Significant facts that describe the project and identify its viability
2. **Description of the Company**
   - Experience in the accommodation business
   - Knowledge of the ecotourism sector as well as other markets to be attracted to the property
   - Understanding of environmental responsibility and the triple bottom line
3. **Description of the Project**
   - Location and site description
   - Project mission, goals and objectives
   - Scope and Scale of the development
4. **Market Research and Analysis**
   - Description of the ecotourism, nature-based and heritage markets
   - Trends in the various targeted market segments
   - Current demand (international and Egypt) for the individual market segments
   - Trends in the ecotourism and environmental tourism business, especially in Western Europe
   - Competition Analysis including competitive advantage (pricing, location, etc) and obstacles
5. **Market Study**
   - A description of each individual target,
   - An estimate of the market size and visitor projections
   - Overview of marketing initiatives to be used to attract the individual market segments
6. **Operations Plan**
   - Operation procedures with an emphasis on the environmentally responsible practices
7. **Ecolodge Management Structure**
   - Individual management and staff positions and descriptions
   - Management experiences, particularly in eco-businesses
8. **Financial Projections**
   - Projected financial data (for existing businesses)
   - Performa (projected) cash flow analysis, income statement and balance sheet
9. **Marketing Strategy**
   - Details of the marketing initiatives by market segment
   - Marketing budget including on-going research initiatives
10. **Monitoring and Evaluation**
    - Methods to be used to appraise the financial success, meet visitor projections of the business and the ability to meet environmental targets.

Appendices

- Additional information to support the assumption

The individual components and details of the business plan are:

1. **Executive Summary**
   - A clear and concise summary of the components of the business model
   - Paragraph on the experience of the company, owner and commitment to success
   - Prepared for investors and stakeholders such as TDA
   - Explains how the facility will respond to market demand and react to the competition
   - Specific competitive advantages such as proximity to national park, coastal resources (e.g. coral reefs), heritage facilities and tribal people
   - Opportunities to use the lodge as a vehicle conservation of Egypt's resources
2. **Description of the Company (Investors, Owner)**
   - An brief description of the companies history and experience in the accommodation sector (particularly in Egypt) and knowledge of eco-business practices and operations,
   - Specific knowledge of the ecotourism sector as well as other markets to be attracted to the property,
   - Role of professional planners, (sustainable) architects and engineers to be hired for the development of the project
3. **Project Ecolodge Business Description**
   - The property location, legal description and an adequate depiction of the site and the adjacent area (a site location map is appropriate)
   - A general narrative outlining the proposed ecolodge business model, including mission and goals
   - Business objectives, rational for success and a description of products, services and contributions.
   - An intelligent explanation of sustainable tourism and the
   - Ecolodge business and how it will be positioned in the region (NOTE, if the proponent cannot give a good description they may not know the business)
   - Overview of the natural and cultural resources of the site and the adjacent region (unique landscape and species, tribal customs, etc,)
   - Financing (and support funding if applicable) sources and trustworthiness
   - Anticipated business growth, profit and financial success
   - Indication of contact with local stakeholders including, if appropriate, tribal people.
4. **Ecolodge Market Analysis**
   - An in depth description of the scope of the sustainable, ecotourism and nature/heritage-based tourism sector. A particular emphasis must be placed on those markets that could be attracted to the facility. In the Red Sea region, for instance, these segments may include; bird watching, hiking, diving, tribal tourism, nature photography, heritage travel
   - A detailed trend analysis: Identify those demographic, geographic (origin) and psychographic (motivational) trends that are shaping travel, particularly in Western Europe
   - Statistical data should be drawn from both secondary research (by country of origin) as well as a survey of travel trade (international and domestic) to determine their interest in the proposed project. Questionnaires used in the survey should be available in the appendix

- A market profile should be established for each market segment including age category, expenditure patterns, educational level, and activity preferences.

Competition Analysis

- There are several properties in Egypt that claim to be an ecolodge. Some merit to use the name (e.g. Siwa) but others do not. The business plan should clearly identify those that are clearly the competition
- Surveys of the foreign tour wholesalers should include a question on potential competitors in other destination; in countries with similar resources, i.e. coastline, desert, tribal/nomadic cultures, and national parks
- An analysis of the competition should include but not be limited to the following:
- Pricing, amenities, available tour products
- Environmental practices and technologies
- Accessibility, resources and attractions
- Local competition analysis should consider the potential of existing hotels to 'go green' and offer a similar eco-friendly product. There is potential for this if the site is close to a national park.
- A description of its competitive advantage and actions that will enable the business to maintain that position (e.g. services, marketing, access to unique resources, etc.)
- Provide an indication of how the business will compete against other facilities, in Egypt, that claim to be an ecolodge but offer few of the benefits and are typically inexpensive

5. Marketing Study and Visitor Projections

- Provide an overview of the market research techniques that where used including season, selected countries and qualifications of the research team
- Identification of the preferred market segments that would be attracted to the site and the adjacent region and obstacles that might prevent success
- Describe, in detail, each potential individual targeted market on a segment-by-segment basis including their potential to be attracted to the region as well as the success of the competition in attracting similar markets
- Similar characteristics should be identified from different countries in order to define the types of product offerings
- The profile of the proposed ecolodge visitor should include:
- Preference for package trips over independent travel
- Preference for customized trips over fixed itinerary
- Preferred amenities and experiences
- Interest in organic foods, meeting locals, and educational programs
- Market projections, on a segment-by-segment and month-by-month basis are required for the first 5 years of the operation, including seasonal variation are required
- The more information that can be provided to TDA the better will be their assessment of the owners understanding of the market conditions both now and in the future
- Identification of marketing partnerships and arrangements, including third-party internet sites, regional tourism organizations and other regional hotels

6. Operational Plan

- Description and details about the day-to-day running of the business including:

- Numbers of employees, functions, green team and environmental coordinator, naturalist and guides
- Description of functional areas of the business (accounting and administration, reservations, housekeeping, kitchen, dining and common areas, and guest rooms)
- Description of conservation and resource protection initiatives
- Available services including food and beverage services, accessible features (trails), guest activities, tour itineraries, available on-site equipment (kayaks and bicycles)
- Participation of the local communities in the ongoing operations (labor, contract services, and village visits)
- Legal issues, regulations, and insurance.

7. Management Structure and Organization

Management and the skills of the managers are critical to the success of the business. Therefore the proponent should:

- Present the names, credentials and experience of all the management staff.
- Identify the responsibilities of each position, particularly the director or ecolodge manager
- Identify training programs to improve the qualifications of the management and local staff
- Indicate access to additional individuals and consultants that can offer input into assuring the successful operations

8. Financial Plan and Projections

- Demonstrate the financial viability of the ecolodge business. This section must be prepared by a person with experience in financial analysis (i.e. accountant, management consultant)
- Demonstrate when the project will be profitable (what year) and the ROI (return on investment)
- Identify the cash requirements to launch and sustain the business to make it successful
- Standard and accepted accounting practices including performance income statements, balance sheet, financial projections (assets and liabilities), financial analysis (cash flow) including capital spending and cash flow from operations, sensitivity analysis, and financial ratios
- Cash flows to be estimated monthly (including seasonal variation).

9. Monitoring and Evaluation

- Identify techniques for on-going assessment of financial performance and appraisal of environmental objectives in terms of energy and waste reduction, and water conservation
- Contribution to biodiversity conservation, community well-being, employee education, and visitor awareness

Appendices

- Additional information to support the assumptions in the EBP
- Market research questionnaires and results
- Minutes of meetings with local stakeholders
- Location maps and references
- Architectural and engineering sketches

PART III: PHYSICAL DESIGN AND EQUIPMENT

Site Selection, EIA, and Site Design

The site selection process, EIA, and overall site design are critical to demonstrating the proponents understanding of the local environment and the environmental issues associated with the development of the site.

This stage of the planning process must be comprehensive and clearly demonstrate that all measures have been taken to ensure the minimal environmental degradation to the site and surrounding area. Furthermore the EIA must identify the social and economic impacts on the local communities as well as any mitigation measures that will be used.

Comprehensive Site Selection Process

It can be assumed in many cases that several sites have been considered before the proponent settles on a specific location. In order to select the best possible site the proponent will have followed a site selection process leading to the final selection.

A typical site selection matrix is shown in Table 1:

Table 1 Site Selection Matrix

Select Criteria	Site 1	Site 2	Site 3
Suitability			
1. Adjacent community			
2. Proximity to highway (access)			
3. Access to shoreline			
4. Attractive views			
5. On site natural resources			
6. On-site cultural resources			
7. Multi-community potential			
8. Access to Deep Range			
9. Multi-activity potential			
10. Compatibility: adjacent land			
11. Remoteness + seclusion			
12. Distance from airport			
13. Four season potential			
14. Waste water treatment			
Capability			
1. Size of site			
2. Accessible foreshore			
3. Expansion potential			
4. Ownership			
5. Overall response to market			
6. Stakeholder concerns			
7. Financial sustainability			

Select Criteria	Site 1	Site 2	Site 3
Environmental Impact			
1. Irreversible loss 2. Rare species 3. Landscape alteration 5. Disturbance of fauna			
TOTAL POINTS			

Site Inventory and Analysis

A comprehensive site inventory of all features and assets must be conducted and mapped as part of the proponent's submission. The site inventory must include all land, and if appropriate coastal zone and adjacent marine resources.

The variety of elements to be included in the regional and site inventory depends on the mix of resources. For the most part they can be grouped into the following categories:

1. Geography + topography
2. Geology
3. Hydrology
4. Soils
5. Wetlands/salt marshes
6. Vegetation
7. Wildlife/habitat
8. Land use
9. Climate + Microclimate
10. Air
11. Heritage, cultural and archaeology
12. Infrastructure
13. Noise,
14. Views and viewscapes
15. Special environmental features

See Annex II for Site Analysis Details.

Environmental Impact Assessment

By law, all lodging development requires an EIA. This is also a critical part of the ecolodge planning process. The proponent must demonstrate that responsible professionals performed an adequate EIA. The structure of the EIA varies for different projects; however, the final EIA report must include more or less the following headings:

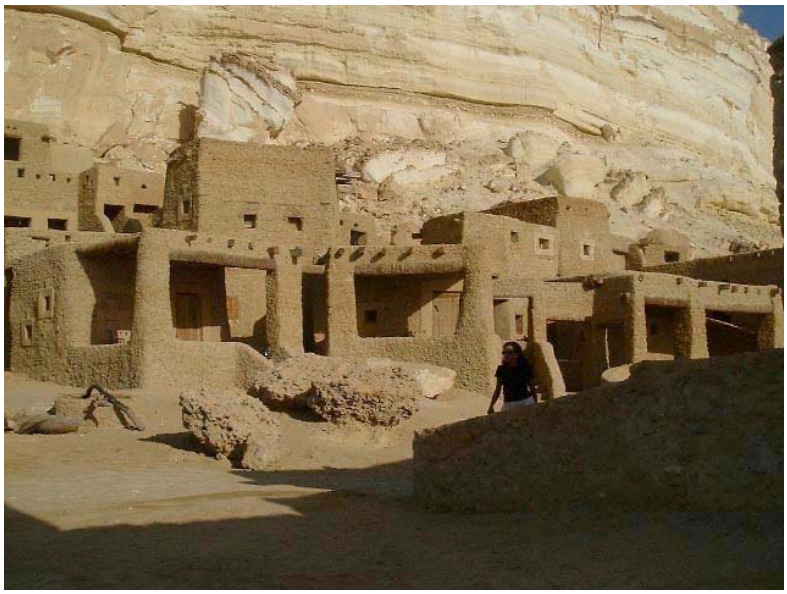
1. Introduction to the project
2. Description of an EIA for an ecolodge
3. The ecolodge Environmental Impact Assessment Process
4. Policy, Legal and Administrative Framework

5. Description of the Area and Site Environment
6. Description of the Proposed Project
7. Significant Environmental Impacts
8. Socio-economic Analysis of Projects Impacts
9. Analysis of Alternatives
10. Mitigation Action or Measures
11. Environmental Management and Training
12. Monitoring Program or Plan
13. Public and Community Involvement
14. EIA Review Process
15. List of References

A more detailed description of the EIA as it applies to ecolodge development in Egypt can be found in Annex III.

Site Access and Accessibility

A description will be provided by the proponent that assess the relative ease of access to the site by land and if appropriate by water. Emphasis is placed on protecting the environment through a minimal degree of road construction.



Preferable locations are relatively close to existing highways and have an existing road base to the property.

Screening and Visual Integration with Landforms

Many of the potential ecolodge sites, particularly those adjacent to the Red Sea have little vegetation. Therefore it relatively easy to use landforms (berms) to:

- Screen negative features such as roads and traffic from the ecolodge site
- Create a separation between the ecolodge and adjacent facilities
- Screen the ecolodge from the views onto the site
- Partially obscuring such features such as the parking lot, utility building and maintenance facilities

The use of landforms can integrate the ecolodge into the wider landscape with its hills and mounds. These berms can also be used to:

- Direct wind movement to increase natural ventilation
- Control wind and offer protection in exposed areas and blowing sand
- Create a sense of privacy in different parts of the ecolodge

- Cluster vegetation around select landforms

Landforms must be smooth and curvilinear and appear to be a completely natural shape. Fill should come from the site (from excavations) but additional fill may come from adjacent construction site. It must not be contaminated.

Facility Location, Layout, and Orientation

The overall layout of the ecolodge and associated development must reflect the dual purpose of creating an ambient and attractive environment for the visitor as well as protecting the natural features of the site.

To achieve this standard the proponent must demonstrate that some of the following conditions have been created:

- Visitor experience and ambience
  - Views within the site and to the surrounding landscape have been maximized
  - Adequate shade is provided by the use of vegetation and facility orientation
  - Local winds are funneled for natural ventilation
  - Individual accommodation units have adequate privacy
  - Movement around the site and connecting of the various facilities is efficient
- Environmental Protection
  - All special features on the site are protected
  - Only essential facilities are constructed adjacent to the beach and other focal points on the site
  - The overall footprint of the constructed buildings are kept to a minimum

Natural/Cultural/Archaeological Resource Protection Measures

Significant ecological or cultural features can be a major asset and provide a sense of place and identity to the ecolodge. Assuming that the proposed site has several unique features, they must be protected both during construction and during the operational phase.

The guest will typically be interested in unique features so an interpretive program will be appropriate.

Landscape and Biodiversity Enhancement, and Interpretive Trails

If the site has already been partially disturbed, the development of the ecolodge provides an excellent opportunity to restore the area to its former quality. Even if the site has not been disturbed it may be possible to expand the level of biodiversity to both enhance the ecological quality as well as improve the overall ambience of the site.

Native and Drought-resistant Vegetation

The use of local materials is both aesthetic as well as practical. There are a number of attractive trees and shrubs, particularly in the desert locations, that reflect the character of the local environment, are very hardy and require a minimum maintenance. The use of plants that require a minimal amount of water (xeriscape) can reflect the facilities intent to use as little water as possible.

The proponent should also demonstrate how compost could be used to enhance the water retention capacity of the soil.

Native Trees for Shade and Heat Control

Summer temperatures can be significant and cause the accommodation units to become hot, despite all natural ventilation efforts to reduce the temperatures. The heat gain on all components of the ecolodge can be greatly reduced by providing shade from larger trees. Given proper growing conciliations, the acacia with its leafy structure can provide a natural source of shaded to all buildings and terraces.

Minimal Site Disturbance

The typical coastal and desert site is flat and treeless.

- All changes to the site in order to accommodate the building are immediately visible
- Tracks from construction vehicles can leave scars that last for many years.
- A minimal use of heavy equipment will be incorporated into the construction process
- When possible manual labor will be employed to ensure a sensitive treatment of the landscape

The construction of berms is an exception to these conditions.

Non obtrusive Outdoor Lighting

The use of landscape lighting will be kept to a minimum and reflect the following standards:

- Path lights (solar): .05m high
- Parking lot: 4m high

Lights will be directed directly onto the desired surface an oriented away from the sea in coastal locations.

Recreation Facilities

There are recreation equipment companies that offer low impact facilities. This may include:

- Chloride free salt water pool
- Natural surface games area
- Low energy hot tubs

Site Ambience

Careful site planning offers an excellent opportunity to transfer local environmental values to the visitor at a direct and subtle level. This can be demonstrated through the following:

- Use of interpretive signs too explain the natural interpretive values of the site and vegetation
- Duplication of local plant community association
- Private areas for relaxation, meditation and contemplation
- Attractive views that promote the aesthetics of the region and the coastal and desert zones

Comprehensive Design Specification

The quality of the final site development can readily be determined by the professionalism of the final site plan. The proponent must demonstrate:

- An understanding of the natural site values to be protected
- The use and maintenance of local indigenous plant material

- An appreciation of site planning and design and creating an appropriate visitor experience.

Sustainable Architectural Planning and Engineering

The responsive design and construction of the ecolodge is at the core of offering the client an environmentally responsible travel experience. Existing ecolodges worldwide have been able to demonstrate a remarkable level of sensitivity to both the local (site) environment and surrounding area. Consequently there is a body of knowledge that is readily available to the proponent and this should be demonstrated in the proposal.

The following will define the facility as responsible.

Quality Professional Services Experience

The level of professional services of the consulting firm is a reliable indication of the quality of the proposed plan and development. Most of the required services are available in Egypt. These services should include:

- Architects
  - Previous experience with the design of environmentally responsible tourist accommodation
  - Knowledge of sustainable architectural practices and materials
- Landscape Architects
  - Previous experience in desert landscaping (materials, construction techniques, drip irrigation, etc.)
- Engineers
  - Understanding of current environmental technologies (solar and wind power, water recycling, and waste management).

Material Life-cycle Analysis

A life cycle design (LCD) or "cradle-to-grave" approach recognizes environmental impacts of the entire life cycle of all architectural resources, from extraction to manufacturing to procurement and eventually the return to nature

The proponent's sustainable architect and engineer must clearly demonstrate that an analysis was conducted on the environmental impact of ALL materials in the construction of the ecolodge.

A comprehensive list of the principles associated with ecolodge planning and development life cycle analysis has been prepared for the in Annex IV.

Alternative Technology Options

The architect and engineer must clearly demonstrate that they have conducted adequate research and have specified the most appropriate environmentally responsible technologies. This can take place at all levels of the facility and include but not be limited to:

- Energy conservation (wind, sun, thermal; cooling roof materials)
- Water conservation (flow restrictors, metering, water reuse, and recycling)
- Fuel (biogas)
- Waste recycling

Architectural Layout of Facilities

The ecolodge is first and foremost an accommodation facility for visitors to Egypt. It must therefore reflect the basic requirements of an efficient and attractive lodging facility including:

- Orientation to the most attractive views (sleeping units, restaurant and common areas)
- Easy access between the sleeping units and the services
- Private outdoor space (patio, veranda)
- Attractive and charming rooms
- Spacious and appealing eating area

Scale of Development

Ecotourism and increasing all types of specialty tourism are characterized by their relatively small group sizes. While this manual accepts that the ecolodge can exceed 50 units, which is larger than a typical ecolodge, good planning and a proper scale of development can ensure that the client experiences the expected level of privacy and exclusivity that is associated with these types of facilities.

Interior Ambience

Many aspects of the facility and the associated activities define the visitor experience; however the proponent must demonstrate that the interior spaces have been designed to use a minimal amount of resources while still offering a comfortable environment. These require the following considerations:

- Natural lighting through proper placement of windows
- Natural ventilation and shading
- Attractive views
- Visual contact with the surroundings and natural resources

Architectural Motif

The architect must demonstrate a clear effort to reflect the local architecture of the region. This may include all expressions from those of the traditional people (e.g. Ababda in the SRS) to a more regional Egyptian style.

The motif will be demonstrated in the facilities materials, colours, scale and textures.

Use of Color

Muted earth tones that blend with the local environment and reflect light are the best colours for the Egyptian environment.

The use of the local materials (sand, wood, clay) provides an opportunity to maintain a palette of natural colors.

Double glazed Glass and Overhangs

The Ecolodge would not typically have air-conditioning. Solar powered fans are acceptable. Therefore all efforts must be made to reduce heat gain and maintain a relatively cool interior sleeping unit including having all operable double glazed windows, overhangs and shutters.

Efficient Design and Layout

The design of the facility must demonstrate energy efficiency even as it concerns the efficient movements of guest and staff as they walk around the site. This includes:

- Direct relationship between the sleeping units and the common areas
- Efficient connection between the components of the food service area

Guidelines of Leadership in Energy and Environmental Design

The Leadership in Energy and Environmental Design (LEEDS) program has been established by the US Green Building Council and provides an overall description of the requirements of an environmentally responsible building.

Information is available to the proponent at www.usgbc.org/LEED

Comprehensive Architectural Drawings, Specifications, and Supervision

The quality and comprehensiveness of architectural and engineering drawings will demonstrate the commitment too a responsible construction.

Building Materials

Use of Local, Natural Building Materials

There are many attractive buildings materials that are readily available in Egypt. They include but are not limited to the following:

- Stone and sand
- Old coral, particularly from excavation sites
- Reeds, cotton, and hemp

Not only are these materials attractive but also they eliminate the necessity of such energy intensive materials as concrete and metals.

Local Vegetation for Landscaping

There will be no imported, ornamental plant materials including grasses shrubs and flowers. Instead the site will be landscaped with only local materials from approximately 100km from the site. The plant list will depend upon the exact location.

There are nurseries in Egypt that can provide the appropriate materials.

Recycled Building Materials

Recycled building materials and furniture can be brought from outside the local area.

The identification and selection of these recycled materials will require an effort in Egypt however it is possible to find both recycled wood and glass.

Wood

Wood is a desirable material for an ecolodge and will be a favorite of most architects. It is attractive, natural and is available in Egypt. Wood could be imported from outside but only if it is from a certified sustainable forestry operation.

Furniture, Fixtures, and Decorations

It is entirely reasonable to expect that all furnishings and fixtures can be made locally. It should not be necessary to import furniture to the site from Cairo. Local furniture may include:

- Tables and chairs
- Cloth storage and bed frames
- Kitchen cabinets

- Bookshelves and night tables

Volatile Organic Compounds

The use of local furniture will not only support local labor but also assure that there is no use of furniture containing Volatile Organic Compounds (VOCs) or other toxic chemicals.

Long-life, Low Maintenance Materials

The presentation of the materials list by the proponent must demonstrate that selected materials can be used over several years with replacements kept to a minimum.

Construction Techniques and Procedures

Contractor Experience

The proponent must demonstrate that the selected contractor can respect the specific environmental conditions of working in sensitive sites. This includes:

- Understanding how to protect local vegetation and ecosystems
- Use of low impact and manual construction techniques
- Participation of local labor.

Site Resources Protection Measures

The proponent must demonstrate how the sites resources will be protected. This will include:

- Fencing areas or zones of special importance
- Restricting the construction footprint around the building site
- Maintaining only one vehicle access corridor within and around the site
- Removing all excavation materials to a designated location (to be approved by TDA) or to an appropriate on-site location for the construction of berms
- Completely enclosing all vegetation areas with adequate barriers
- Use of manual labor instead of equipment.

Simple, Local Building Techniques

In the more remote locations of Egypt the labor is only semi-skilled. Therefore in order to use local labor the architect and engineer should favor relatively simple building techniques. This could include

- The use of local materials and traditional construction techniques that are known and familiar to the area contractors and laborers
- The adaptation of traditional tools to meet the requirements of a modern building

Low-impact Construction Techniques

When possible it is preferable to use manual (including animal e.g. mule, camel) labor over standard equipment. The former requires relatively little energy while the latter burns hydrocarbons, causes air pollution, and compacts the soils. Manual labor can be used to:

- Dig and prepare trenches
- Move light material around the site (mule and cart)
- Prepare and construct all trails
- Plant vegetation and construct landforms

Low-energy Tools and Low-impact Construction Equipment

The choice of tools and equipment for the construction of an ecolodge is important. There are currently several options and construction techniques that can be identified by the proponent including:

- Power tools powered by solar batteries
- Reduced size excavation equipment (backhoe, lawn tractor)
- Energy Star rated tools and equipment and battery chargers

Site Supervision and Resource Protection

All equipment and safeguards used to protect the environment can be useless if there is inadequate site supervision. The proponent must demonstrate that there will be continual site supervision over the duration of the construction period. Furthermore the site supervisors must be introduced to the reason for protecting the site resources.

Failure to protect the resources could result in penalties to be paid by the proponent or contractor.

Energy Conservation

Energy Conservation Measures and the Monitoring Plan

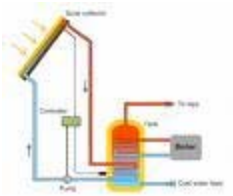
A professional Energy Conservation Measures (EMC) and Monitoring Plan must accompany all ecolodge proposals

This plan will include but not be limited to:

- Renewable energy or co-generation schemes, including wind, thermal, fuel cell, etc.
- Energy Management Systems
- Energy efficient refrigeration
- Real time metering and sub-metering for establishing load profiles throughout the lodge
- High efficiency appliances
- Solar Energy Systems
- High efficiency thermal water heaters and instantaneous/tank less water heaters
- Waste Heat/Energy Recovery Systems (air, steam, etc.)
- Ground Source Heat Pumps
- Efficient Piping design (steam, water and glycol piping)
- Efficient florescent lighting

Solar and Photovoltaic Panels

Solar energy must be considered an essential component to any ecolodge in Egypt.



Solar panels will be used to both heat water as well as generate electricity for select appliances such as fans, lights, and kitchen equipment. The EMC will clearly define the type and use of this solar equipment. Depending on the size of the facility, a small solar plant, using a parabolic dish may be considered.

Additionally solar equipment such as cookers and ovens, trail lighting, etc should be considered.

Thermal Hot Water Heaters

Thermal or solar water heaters are the most efficient and natural way of heating water. Each sleeping unit and bathroom must have its individual heater. There are many brands on the market.

It is also possible for the contractor to build a system on-site using local labor and recycled materials (bottles, hoses, etc.). This approach may be an interesting model for locals to consider and contribute to the overall decrease of energy consumption.

Wind turbines and Other Hybrid Power Sources

Coastal areas in Egypt provided an excellent source of wind energy. At least some part of the EMC should consider a small wind turbine, if only for research and/or a demonstration of wind power in a smaller lodging facility.

For instance the smaller 3Kw to 5Kw systems could generate most of the electrical requirements of the kitchen.

Low-energy Consumption Appliances

The use of high efficiency appliances is necessary to reduce the energy load on the renewable energy systems. These appliances must be used throughout the lodge including sleeping units, kitchen, maintenance and housekeeping. The US Energy Star rating system, or equivalent can be used to assess the efficiency of each unit.

There are 3 levels of appliances in an ecolodge:

1. **Level 1:** Large energy consumers: cooking stoves, and clothes dryers
2. **Level 2:** Washing machines, dishwashers, fridges and freezers, computers and televisions.
3. **Level 3:** Appliances that are used regularly but are low energy consumers (radios, clocks) and appliances that use a lot of energy but that may be used occasionally (vacuum cleaners, irons, kitchen equipment).

Each of these levels is a source of demand on the energy system and must be selected and used to reflect the greatest efficiency

Low-consumption Fixtures and Occupancy Sensors

Occupancy sensors and compact florescent lighting (CFL) are common in most hotels and resorts in Egypt and are considered essential for an ecolodge.

Solar Energy and Laundry

Drying laundry can be one of the largest sources of energy demand in a resort. However with constant sunshine in Egypt, the

proponent should consider drying racks or cloth lines. While the latter may be considered unsightly it may have the opposite effect on the client who would prefer to have the towels and bedding dried outside, as it was when they were young.

Sub-metering Facilities

The purpose of sub metering is to:

- Provide details about the amount and timing of energy use in the ecolodge in order to adjust accordingly and manage the energy use.
- Identify and implement operational strategies to control load factor, peak load requirements and reduce energy waste.
- Understand and improve consumption patterns.
- Measure and verify anticipated energy savings from energy efficiency modifications.
- Highlight anomalies in electric consumption. For example, a large nighttime increase may indicate that equipment is running unnecessarily.

The proponent must indicate the sub metering equipment and software to be used.

Insulating Hot Water Pipes

All pipes associated with the distribution of water are to be insulated to prevent energy loss.

Electrical Systems Preventative Maintenance Program

The preventative maintenance program should outline the following activities:

- Determine the Personal Protective Equipment (PPE) requirements for electrical troubleshooting.
- Safely and correctly verifying that a circuit is de-energized
- Performing basic circuit checks for shorts, opens and ground faults using a multimeter
- Performing continuity and resistance checks on relay coils and contacts, overloads, fuses, circuit breakers, switches and other control circuit components
- Troubleshooting basic electrical control circuits to develop a logical, systematic approach to troubleshooting
- Performing clamp-on ammeter readings on 3-phase circuits and interpret readings
- Testing single-phase power distribution systems for correct wiring
- Regularly reading the ecolodge electrical drawings and electrical floor plans
- Identifying additional components of a successful electrical preventive maintenance program.

Energy Use Awareness Program

For the most part the visitors to an ecolodge are environmentally responsible and eager to contribute to the energy conservation initiatives. Therefore an awareness program will both provide an education on opportunities for energy conservation as well as maintain energy use at a minimum.

The program may include but not be limited to the following:

- Description of renewable energy sources used in the ecolodge
- Available energy consumption for each client
- Individual methods to conserve energy while at the ecolodge

- Results of sub metering (e.g. by accommodation cluster) on a weekly basis
- Energy conservation day

Hybrid Vehicles and Fuel-efficient Boat Motors

There are more opportunities than ever to purchase vehicles and boats the have:

- Hybrid motors; minivan and trucks
- Electrical motors; small 16 seat passenger boats

Fuel Cell Backup Generator

Although most if not all energy at the ecolodge should be from renewable sources, it will still be necessary to have an energy efficient back-up generator. The latest fuel cell equipment is extremely efficient and will serve the needs of most medium size (40-50 units) properties.

Water Conservation and Recycling

Water Usage and Conservation Plan

The proponent must demonstrate that there will be a water conservation plan in place on the opening of the facility

The plan should include but not be limited to:

- Specify water conservation planning goals and targets
- Description of a Water System Profile
- Reuse and recycling plan
- Preparation of a Demand Forecast by department (kitchen, accommodation, maintenance)
- Description of all Water Conservation Measures
- Analysis of benefits and costs to proponent
- Implementation 'Water Strategy and Monitoring Plan'

Efficient Desalination Plant

Desalination by either evaporation (EV) or reverse osmosis (RO) is very energy intensive. However certain methods have been developed for reducing energy usage as well as for powering installations where it is not feasible or is impractical to connect to the electricity grid.

- RO desalination plants consume less energy than EV plants. Hybrid plants utilize both EV and RO units.
- Wind energy: Since the ecolodge desalination unit will be situated along the coast, there is often enough wind for powering a RO unit with wind turbines. The Canary Institute of Technology has developed RO desalination plants that are mechanically powered by wind energy
- Photovoltaic (PV) systems are more expensive than wind turbines. Nevertheless it can be a good solution for Egypt, particularly in remote desert areas where there is no electricity grid and little wind and it may be the only viable option. A rather large PV surface of approximately 250 m^2 is needed to supply 125 visitors and staff with 150 liters of fresh water per day.

Grey Water Treatment and Recycling

It is important to match the grey water distribution system to the ecolodge output. There are several possible combinations of benefits and drawbacks to the various systems. A common system is the 'branched drain' to mulch basins, planting areas or mini-leach fields. It is inexpensive, reliable and requires continuous downhill slope from the points of grey water generation to the points of irrigation need. It is critical that hard-plumbed lines have proper slope (at least 1/4" per foot).

Drip Irrigation

Drip irrigation is the slow application of water directly to the plant's root zone using "drippers", which are also referred to as "emitters". Maintaining an optimum moisture level in the soil at all times results in less water lost to the sun and wind. Select advantages for the ecolodge are:

No water is wasted on rocky, non-growth areas

- The root zone is maintained at its ideal moisture level, combining the proper balance of water and air for a very efficient irrigation system
- Low volume irrigation offers some key advantages and benefits to both ecolodge maintenance staff and owners.
- Drip irrigation is the precise and slow delivery water to plants' roots
- Drip irrigation flow rates are in liters per hour not per minute, because of the low flow from each emitter
- Drip emitters are usually rated at 4-8 liters per hour

Drip irrigation will target the vegetation around the ecolodge buildings and that used to create a vegetation screen for adjacent resorts.

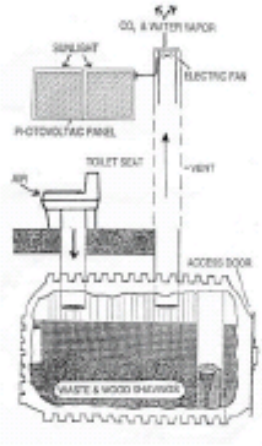
Water Saving Devices

HOUSEKEEPING, MAINTENANCE, AND OPERATIONS

There are numerous water saving devices available to the lodge and resort sector including low flow restrictor valves and water saving nozzles. The architectural specifications must identify what type will be used in the ongoing operations

GUEST ROOMS

There are numerous water saving devices available to the lodge and resort sector including low flow restrictor valves, low flow showerheads and water saving nozzles. The architectural specifications must identify what type will be used in the ongoing operations.



Regular Leakage Assessment Program and Reporting

As much as 30 percent of the water in some resorts is lost through leakage. This can be arrested through an ongoing assessment, reporting, and maintenance program.

Compost, Dual, or Low Flush Toilets and Waterless Urinals

It is important for the proponent to make a decision between compost toilets and low flow toilets. Compost toilets may be more efficient because of the cost of water; however, most operators are less familiar with their operations. Nevertheless, they provide

essential organic materials to the sandy Egyptian soils. Low-flush toilets are designed to use six liters of water per flush, significantly less water than conventional toilets use.

Recording Total Water Consumption

Electronic water consumption devices should be installed in all departments and guestroom clusters.

Waste Management and Recycling

Waste Management Plan

The proponent must demonstrate that a Waste Management Plan will be in place during the construction and ongoing operation of the ecolodge

By proactively managing these wastes, the ecolodge can reduce operating costs, preserve local nature attractions such as coral reefs and beaches, and reduce odors and pest infestations.

Resorts typically produce more solid waste than all of the local residents.

An effective waste management plan ensure the long-term sustainability of fragile coastal and desert ecosystems and preserve the natural beauty of beaches, coral reefs, deserts and wadis.

Waste management plan should demonstrate the following benefits:

- Reduced manpower requirements for waste handling and disposal
- Reduced haulage and landfill tipping revenue from the sale of recyclables
- Protection from insect and rodent infestations
- Reduction of fire hazards
- Improved community relations
- Compliance with government regulations and codes
- Reduced odors and improved aesthetics and sanitation
- Increased guest satisfaction.

Reducing Packaging

The proponent must demonstrate that the ecolodge will take particular measures to reduce all packaging including:

ıuppliers

ts to reduce what they bring to the ecolodge

ırchase of products with excessive packaging and avoiding Styrofoam

ıer

crates, bottles, and containers to suppliers.

Refillable Amenity Dispensers

The use of soap and shampoo dispensers can are available in many large city hotels so they have become familiar to most, if not all clients to an ecolodge. Consequently they will not expect the various 'amenity' bottles for shampoo, body location, soap and creams.

Vegetation Composting and Disposal Program

All vegetation from the kitchen and yard waste is to be stored, composted and disposed of on site. The compost will be used on the plant materials adjacent to the ecolodge buildings, plants used for screening the ecolodge form adjacent buildings and other planning beds.

Separation and Recycling Program

The ecolodge will undertake its own separation and recycling program. Materials will be taken to the nearest recuperation centre, usually as backhaul, using suppliers trucks or the ecolodge vehicles. The following items will be recycled:

- Metal
- Glass and hard plastics
- Paper
- Cooking oil
- Motor oil

Surplus and Used Items

As part of the ongoing cooperation between the local communities and the ecolodge the latter will donate the following materials:

- Excess Gray water, for community gardens
- Non returnable glass beverage bottles
- Office paper
- Containers from suppliers
- Soap bars from guest rooms
- Old linens and towels
- Damaged furniture

No Single Packaging

All sugar, cream, juice, condiments will be bought in bulk, stored in glass containers and distributed to the guests in bowls and jars.

Cleaners and Pesticides

All cleaners, polishes and pesticide will be biodegradable, non-corrosive, non toxic and phosphate-free. They will be prepared on-site by local staff using the following recipes:

Pesticide: Use a mild solution of soapy water.

All Purpose Cleaner: Mix 1/3 cup ammonia, 1/3 cup washing soda, 4 liters warm water.

Air Freshener: Plants, citrus peel, essential oil or fragrance.

Furniture Polish: Use one part white distilled vinegar and three parts olive oil. Add a little lime juice.

Glass Cleaner: Plain club soda or mix 3 tablespoons vinegar with 1 liter of water.

Guest Recycling and Room Waste Separation Program

Inform guests of recycling program and in-room waste separation

Guests will be encouraged to bring as little as possible to the ecolodge. Once on site they will be informed of the separation and recycling policy. Colored boxes will be in each guest room to enable the separation of waste. The proponent must suggest the type of program that will be presented to the guests.

Separation and Storage of Solid Waste before Disposal

A select location, possible adjacent to the maintenance area and composting bins, will be set aside for the separation of all materials dedicated for recycling. This activity can be done by a member of the community who is contracted.

Laundry, Housekeeping, and Kitchen

These three departments are large consumers of water and energy a significant effort must be made to specify the most energy and water conservation efficient equipment and appliances.

Energy-efficient Appliances

All appliances should be rated efficient by the Energy Star program or equivalent. This rating system applies to all of the following appliances:

- Dishwashers
- Steam Cookers
- Refrigerators
- Exhaust Fans
- Washing Machines
- Vacuum Cleaners

Purchase dishwashers with a short cycle, and that will fit into the property's water reuse and heat recovery systems.

Use proximity-style (back shelf) exhaust hoods with variable speed fans.

Use low-flow sprayers for pre-washing

Use ozone to disinfect hands, foods and food preparation surfaces

Install efficient washing machines

Most washing machines are rated for their water and energy consumption. Select those with the highest rating as with multiple washing cycles, ozone treatment.

Reuse Towels and Linens

Guest have become increasingly used to maintaining their towels and linens for several days rather than having them washed every day, The ecolodge should reflect this trend and offer the option to every guest.

Develop Operational Manual

An Operations Manual based on Environment Management System (EMS) will must be prepared for each department (laundry, kitchen, guest rooms and house keeping, maintenance) and

provide a background on important environmental issues and advantages of instituting an EMS in the ecolodge.

An EMS Operational Manual includes:

- Organizational structure
- Planning activities
- Responsibilities
- Practices, procedures, and processes
- Resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.

It provides a mechanism for the ecolodge to operate in an environmentally responsible manner, anticipate and meet growing environmental performance expectations, and ensure ongoing compliance with regulatory and legislative requirements.

It will provide each department with "dos and don'ts" instructions and ready-to-use operative instructions, which can be used at the management and staff level in every department of the ecolodge. It could include a checklist through which the individual departmental supervisors can monitor environmental performance and assess their improvements after a planned and phased implementation.

Purchasing Practices

Pre-cycling' Purchasing and Consumption Plan

'Pre-cycling' and waste reduction means choosing products with a longer lifespan, discouraging the use of single-use disposable items, buying concentrates to cut down on wasteful packaging and choosing products designed for recycling.

The pre-cycling plan may include buying products in bulk or concentrate and transporting it to the ecolodge in reusable containers and returning a refillable bottle for reuse so the bottle is used again for its original purpose. The plan should also consider:

- Product reuse (without changing it's form)
- Purchasing with increased product life
- Reduced material and energy use in product design
- And manufacture
- Changing guest purchasing, consumption, and waste producing habits.

Bulk Buying Measures

There are ample opportunities and commodities for bulk buying in the lodging sector. There is also an opportunity to differentiate the ecolodge from standard resorts that typically offer amenities like soap, shampoo, conditioner, and lotion in individual packages. These and other items should be purchased in bulk and offered in dispensers.

Recycled Materials Purchases

Whenever possible purchase supplies made from recycled materials. A demand for these particular goods is critical to closing the recycling loop and keeping the cost of recycled goods competitive. Therefore the proponent must:

- Identify items that contain post-consumer recycled content.
- Purchase remanufactured toner and printer ribbon cartridges

- Use plates, glasses and flatware from recycled materials

Active 'Buy Local' Program and Practices

Where possible it is preferable to buy goods and services locally. This is especially appropriate for food products such as fruit and vegetables as well as fish and select (and inspected) meats. The proponent must indicate the types of contractual arrangements that may sign with local small businesses and individuals.

Prepare a Product Purchasing Policy

The proponent should provide a purchasing policy which may include initiatives that:

- Avoids the purchase of equipment or materials that are single-use and disposable when alternatives exist.
- Provides guidelines for purchasing that minimize the procuring single-use, disposable products in order to reduce waste and where it does not compromise the visitor experience
- Reduces waste through the use of reusable products, the implementation of recycling and careful waste segregation.
- Request that suppliers specify whether there is a reusable alternative to the single-use product or whether there is a device that is able to be reprocessed that could be substituted.
- Establishing purchasing goals to increase the number of reusable products or products that can be reprocessed.
- Select those vendors who are willing to meet waste minimization goals and develop a preferred list of vendors based on those who are willing to help provide reusable product alternatives
- Where alternatives are not feasible, continue to work with vendors to seek reusable, durable products for substitution

Life-cycle Audit or Assessment for all Purchased Materials

A product or service has environmental impacts throughout its life cycle; both before and long after it is purchased and used. A product's life cycle includes activities associated with raw material acquisition, product manufacturing, packaging and transportation, product use, and ultimate disposal.

Life cycle assessment (LCA) is a tool used by hotels and resorts to structure a comprehensive analysis of environmental impacts across a product's entire life cycle, i.e. "from cradle to grave." Even without a commitment to a formal life cycle analysis program, the ecolodge can still apply life cycle thinking to its purchasing and operations decisions.

The Audit examines the most significant

- Inputs (i.e. energy, water, raw materials, equipment, supplies, finished goods)
- Outputs (i.e. products, product use, and non-product outputs); and
- Processes (focusing first on those with the largest inputs or outputs).

For each, the proponent must consider the direct impacts of the purchase decisions of the ecolodge and then move "upstream" and "downstream" to look at the impact of the actions of the companies (suppliers, vendors) with whom the ecolodge willl do business.

The choices made by the ecolodge can improve profitability, reduce environmental impacts, and increase resilience for the organization and for the rest of the supply chain.

Professional Services Audit

Environmental analysis goes beyond the purchase of goods and can also extend top those companies that offer services to the ecolodge. These include:

- Accountants and financial services
- Architectural and engineering services
- Marketing services

To the extent possible these companies should have previously demonstrated environmental concern and action and preferably have a company environmental policy that guides them in their decisions.

Supplier Awareness Program + Agreements

The proponent will prepare Suppliers Compliance Manual, which will serve to:

- Enhance communication between the ecolodge and its suppliers
- Make environmental information more accessible to suppliers
- Provide suppliers information on new environmentally-friendly materials and processes
- Inform suppliers of recent specification changes
- Provide suppliers with pollution prevention options
- Provide suppliers with a means for obtaining support for resolving problems concerning the purchase of materials used by the ecolodge
- Provide links to sources of possible interest.

Food and Beverage

Fresh Organic Foods and Beverages

When possible food and beverages should be local, fresh and organic. The restaurant chef should work with individual farmers, producers and suppliers to ensure that the products are organic.

Purchase Local Vegetables, Meat, Fish, and Poultry

Many of the ecolodges in Egypt may be situated in relatively remote locations. It is therefore in the interest of the facility to purchase foods locally. However they may also need to assist the suppliers (farmers, fishers) to ensure that the products will be available when needed. The chef will work with local farmers and fishers to guarantee the guests have the highest quality organic products

Food Waste

All unused food waste can be picked up daily by villages to feed the goats and other animals.

Air Quality

Smoking

Smoking would only be permitted only outside the ecolodge.

VOCs from Synthetic Fixtures and Materials

There will be no furniture and fixtures that emit VOCs. These gasses have been proven to cause eye and respiratory tract irritation, headaches, dizziness, neuro-toxicity and are considered carcinogenic. They are typically found in carpets, adhesives, drapes, fabrics and wall coverings. The ecolodge will use only natural materials (e.g. cotton, hemp, reed, etc).

Formaldehyde-Free Environment

There will be no pressed wood products anywhere on the property including:

- Particle board
- Fiberboard
- Plywood.

Windows and Ventilation

All windows are operable and oriented for maximum ventilation. Operable windows will ensure that the air is always fresh and the guestroom is always ventilated.

Allergen-free Rooms

De-ionizers should be used if necessary to eliminate allergens, spores, mold, and bacteria

Live Plants

Because many ecolodge sites will be sandy or rocky, the rooms may be dusty. Natural indoor plants will be used to trap sand

Energy-efficient Vacuum Cleaners

Portable HEPA (High-Efficiency Particulate Air [filter]) vacuums will be used to filter and remove dust and sand from the guestrooms and common areas.

Hazardous Chemicals and Plastics

Avoid Plastics and Styrofoam

The ecolodge must demonstrate a firm policy against the use of any plastics and Styrofoam's

Biodegradable Pesticides, Herbicides, and Fungicides

Pest Management has become increasingly difficult and many common pesticides have long term side effects in terms of killing beneficial insects (birds, bees, etc), bioaccumulation in animals and soil poisoning, especially for non-biodegradable pesticides, or pesticides that take a long time to degrade.

There has been an increased demand for biodegradable pesticides or environmentally friendly methods for pest and insect control.

Formulated from natural plant oils and botanical extracts such as *Azarachta indica*, *Pinus resinosa,* and *Ricinus communis*, new non-toxic, biodegradable, environmentally friendly pesticides have no harmful side effects.

Non-toxic Cleaners, Solvents, and Paints

Paints, solvents, cleaners and finishes are among the leading causes of interior air pollution.

Paints and finishes, for instance, release low-level toxic emissions into the air for years after application. The source of these toxins is a variety of VOCs. However new environmental regulations, and consumer demand, have led to the development of low-VOC and zero-VOC paints and finishes. Most paint manufacturers now produce one or more non-VOC variety of paint. These new paints are durable, cost-effective and less harmful to human and environmental health.

There are also dozens of non-toxic highly effective commercial cleaners that are safe and healthy for the guests, staff and the environment. These environmentally friendly cleaners are low VOC and some contain the Green Seal.

Toxin-free Furniture

Most resort furniture can be considered toxic because of the release of VOCs They are typically manufactured with pressed wood, fiberglass, plasticizers, etc.

The ecolodge must demonstrate that all the furniture is non-toxic. Furthermore bedding must be made for organic cotton.

Employees Training Program

Employees, especially those hired from the local community are not experienced with cleaners, pesticides, paints and solvents. Even though an effort will make to use only non-toxic varieties all those working with these products should receive adequate training in their application and mixtures.

Employee Equity, Participation, and Training

Proactive 'Equal Opportunity' Local Hiring Practices

The proponent must clearly demonstrate a local hiring policy during both the construction and operations phase. By the third year of operation at least 50 percent of the employees should be from the local area. This may require additional training to ensure that these quotes are met.

Local hiring does not create undesirable conditions in the local community. The ecolodge should delegate one employee as an employment coordinator that understands the local community dynamics and ensures that there is no favoritism or social disruption in the local hiring policy.

Environmental Management Training and Evaluation Program

A successful ecolodge environmental management system relies on the positive forces of responsibility and creativity of all employees. The real challenge is to ensure that environmental management becomes and remains a productive force and a continuous source of innovation, rather than another burden on top of other daily procedures.

The training program must promote being:

- *Alert* to important causes of inefficient use of resources (water, energy) that may else go unnoticed. This would include an understanding of the direct economic benefit, besides the merits of improved environmental performance.
- *Prepared* to accept changes, when new procedures have to be implemented as part of the environmental management system or to improve environmental performance.
- *Prepared* to extend responsibility for the environment to all employees that take operational decisions. This is the best guarantee that problems are minimized and eventually entirely prevented.

- *Alert* to opportunities to acquire benefits through communicating the improvements in environmental performance.

A more stable workforce takes more pride in their work and acts as ambassadors for the ecolodge in the community.

The major part of environmental training lies in developing a commitment to continuous investigation of the structures and activities within the ecolodge, their interaction with the environment, and the competence to respond to the result of this investigation.

Finally the training must be interactive, investigating and challenging the participants' attitudes to the environment and their understanding of their roles in relation to their work, the ecolodge they manage, and the opportunities to minimize its environmental impact.

Involve Employees in Environmental Program

Ecolodges and responsible resorts are increasingly using the concept of a 'green team' to support and advance it's environmental and conservation agenda. The process includes:

- Selecting an interested employee from each department to join the environmental 'green team'. It is also important to include all levels of management. Ideally the team is managed by a top-level manager to ensure cooperation and action throughout all levels of the organization.
- Preparing, writing and distributing the Ecolodge Environmental Policy (EEP). This policy should be brief yet comprehensive in defining the overall environmentally responsible direction of the ecolodge.
- Designating a Champion, a person that is particularly keen on environmental management and performance to drive the overall process and who can work to integrate the system amongst different departments.
- Documenting the Objectives, Targets, and Responsibilities - including the environmental team structure, objectives and targets, and timelines. Effective documentation will illustrate benefits, indicate progress, and provide the information needed for audits and certification.

Environmental Management Manual and Checklist

An Environmental Management Manual (EEMM) will assist the ecolodge to introduce environmental management as an extension to the daily business operations. The tasks in the Manual should not necessitate considerable additional time or money. It should be designed to enable the employees to immediately start planning and taking simple practical actions.

Government action in the form of legislation planning and guidelines can provide a solid foundation for EMS in Egypt but pro-active ecolodge employees can make a bigger contribution to the sustainability of the tourism industry and overall environmental protection.

The Employee Environment Management Manual, Checklist and Guidelines addresses environmental management issues in the ecolodge within seven categories, including:

- Energy
- Water
- Solid Waste
- Effluents and Emissions
- Contractors and Suppliers
- Site Management

- Staff and Local Community

Progressive Work Policies

The proponent must adopt the principle of fair and equitable wages for all employees as well as providing a safe work environment and ensuring that the employee receives adequate benefits.

Fair Trade Purchasing Practices

The ecolodge has the potential and opportunity to support sustainable development and fair trade practices at a community level. This includes

- The creation of new service sector jobs, including positions for women and youth
- Providing educational and service training opportunities
- Offering health care benefits
- Supporting infrastructure development and improvements
- Enhancing opportunities for environmental and cultural heritage protection.

Economic sustainability is achieved, in part, when tourists actively and directly contribute to the economies of the local communities they visit without adversely affecting other aspects of people's lives.

Fair trade products and practices help to guarantee that the local producer receives sufficient compensation for the product or service that they offer.

The ecolodge fair trade program should:

- Recognize the potential of local workers to educate visitors about the benefits of fair trade and allow artisans and other producers/suppliers the opportunity to share their craft.
- Include visitor tours that encourage a constructive interaction between travelers and the local communities.

Contribution to Conservation and Community Awareness

Portion of Profits to Community and Conservation Projects

The proponent's business plan must clearly indicate that the ecolodge will transfer as much as 8% of the profits to community and conservation projects. These projects will be identified jointly with the local communities and NGOs.

Community Relations Plan and Activities

The ecolodge should endeavor to establish a long-term relationship with the local communities. This affiliation should be outlined in a Community Relations Plan that may change on a year to year basis but will establish the parameters for this collaboration. The plan will provide:

- Vision, goals, and objectives
- Roles and responsibilities
- Public relations committee drawn from ecolodge staff and community members
- Methods of collaboration
- Preferred projects
- Internal and external communication
- Monitoring of activities.

Proposed Conservation Projects

The selected Conservation Projects will be decided in collaboration with the communities and/or a local environmental NGO. The projects may include waste management, water conservation, or energy production. The contribution may include a cash payment, sponsorship and/or ecolodge staff involvement in the project.

Supporting Non-environmental Community Projects

The scope of the community projects may be wider than conservation and environmental initiatives and include literacy training, health related issues.

Community Liaison Position

One of the employees working at the ecolodge will be identified by management as the Community Liaison Officer. This individual will require a basic training in community relations. There will be a counterpart selected at the community level.

On-site Sale and Demonstration of Local Handicraft and Foods

The ecolodge is an excellent venue to display the production of the local arts and crafts.

An area of the ecolodge will be dedicated for the exhibit and production of the craft and foods. As well local craft will be used throughout the ecolodge as decoration, thus further promoting guest interest in the products of the local people.

Visitor Experience, Impact, and Interpretation

Visitor Code of Conduct

The code will be prepared by the ecolodge in collaboration with local communities and may include the following topics:

- Ensure that the tourist activity supports conservation
  - Expenditures are used to support conservation measures
- Support the preservation of local resources
  - Maintain resource protection by giving money, doing volunteer work, educating others
  - Visit local parks and nature reserves
- Use natural resources in a sustainable way
- Minimize consumption, waste, and pollution
  - Choose biodegradable or recyclable products and products with minimal packaging
  - Limit energy use
- Respect the local tribes and cultures
  - Learn about the culture and customs of the area
  - Respect the rights of the communities
- Respect historic and scientific sites
- Communities should benefit from tourism
  - Tourist spending can contribute to the economic survival of the communities
  - Buy local, and choose tour companies, excursions, and suppliers that are locally-owned and that employ local people
  - Buy locally-made products and handicrafts
- Choose tours with trained professional staff

– Choose a tour operator with staff-client ratio of 15 clients or less per staff member for land-based tours, and 20 passengers or less per staff member for cruise

Pre-trip Information Packages

The ecotourist typically likes to be informed about the destination before leaving their home. It is therefore important to provide adequate information about:

- Regional resources
- Local cultures and traditions
- National parks
- Marine and desert flora and fauna.

Available Local Interpretation Programs and Educational Materials

If local interpretation programs are not available the proponent will need to ensure that the guests have adequate access to professional interpretive programs during their stay at the ecolodge and in the region.

Offer Area Ecotours with Local or Community Guides

The ecolodge can work in collaboration with local tour operators as well as local villages and an adjacent national park to provide a variety of exciting and informative tours.

Contact with Local Residents

Promote and offer contact with local residents (villagers, local entertainers, artisans, etc.) and the natural resources

This initiative is best achieved through a series of community and tour operator designed programs that are available to guests at the ecolodge. They are typically half-day trips offered by a local guide may include a light meal and local coffee. Activities might include:

- Meeting with local crafts people
- Cooking classes for traditional meals
- Visit to schools
- Visit to a local environmental or community project

Guest Access to Conservation and Community Projects

Tours should be available to the various conservation and community projects that are co-sponsored by the ecolodge in collaboration with the communities and NGOs. This can also be an excellent way of raising additional funding support from ecolodge guests who are attracted to the project.

Guest Guarantee Program

A Guest Guarantee will be offered by the ecolodge to ensure that guests are satisfied with their visits and that environmental expectations have been met.

The Program will be monitored by ongoing Visitor Satisfaction Surveys as well as regular interaction between the guest and senor management.

Monitoring, Evaluation, Emergency Response, and Security

Water Management Audit and Plan

The audit and plan will be prepared to assess the changes and improvements in water savings and water quality monitoring. The audit will include guest rooms, kitchen, maintenance areas, and swimming pool.

Energy Management Audit and Plan

The audit and plan will assess the changes and improvements to energy saving targets and monthly consumption monitoring and reporting.

Waste Management Audit and Plan

The audit and plan will assess the changes and improvements to reduction targets, recycling targets, and reuse targets.

Employee Awareness Audit Plan

An audit will determine the results of the employees training program, success of the green team, and the impact of the community and conservation projects.

Visitor Satisfaction and Awareness Audit

Visitor satisfaction surveys will be used to determine the degree of satisfaction of the visitor experience with an emphasis on the response to the environmental initiatives of the ecolodge, the quality of the environmental education and interpretation programs, and visitor interest in community conservation projects.

Environmental Emergency Response (Contingency) Plan and Reporting System

Emergencies or disasters may occur at any time on or near the ecolodge. Types of emergency situations may include but are not limited to:

- Fires
- Severe Weather, including hurricanes, typhoons, and sand storms
- Water disruption and contamination
- Utility failures
- Bomb threats
- Food-borne outbreaks.

The first duty of management is the protection and safety of all persons, including employees and guest. The next priority shall be the protection of the ecolodge.

The General Manager, in consultation with the Director of Operations will decide the appropriate response to an emergency situation and initiate action to activate the Environmental Emergency Response Plan (EERP) in part or in whole.

The EERP or contingency plan will be prepared for site emergencies and those that may take place adjacent to the site.

Visitor Safety, Security, and Evacuation Plan

The ecolodge must pro-actively create a secure environment and develop capacity that can react quickly and effectively to visitor-related incidents.

To manage incidents effectively, the ecolodge must establish a network of service providers to respond in an integrated manner. Main partners include the local police, community services, emergency services, traffic department, tourism agencies, and transport providers.

To promote safety awareness, the ecolodge should incorporated a safety and security component to its visitor orientation campaign, including discussion of security tips, before the departure of each day trip.

The plan should list all potential man-made risks such as, water related accidents, petty crime and accidents associated with visitor activities such as desert hiking, mountain biking, diving, etc.

Green Marketing, Public Relations, and Communications

Target Eco-tourists and Green Markets

There is substantial information on the green market. The ecolodge proponent should demonstrate knowledge of these markets with a particular emphasis on birdwatchers, amateur photographers, scientific tourists, ethnobotanists, dive and marine enthusiasts, and sea kayakers.

The proponent should demonstrate how the company will approach these specialty markets.

Low-impact Marketing Mechanisms

The use of brochures and other traditional marketing mechanisms is loosing favor with both the industry and the green markets. The green market does not expect to receive a glossy brochure and in most case would prefer an electronic pamphlet and newsletter. Consequently there is a greater use of Internet and web sites, digital marketing (electronic brochures and emails), recycled paper, and soy-based ink.

On-going Green Market Research

A successful ecolodge operator is current on new trends and activities in the eco-friendly business community. There are ample research sources, particularly in Western Europe, that identify trends and consumer profiles and expectations. As well the management of the ecolodge must maintain a constant pulse on the changing attitudes and values of their actual client base.

The operator must undertake constant research on the national and international markets to maintain a competitive position, especially as more ecolodges are developed in North Africa and Egypt.

Regular Guest Survey

On going surveys are required to assess guest's interest in a variety of topics directly related to the operations and maintenance of the ecolodge. This may include:

- Expectations of the level of environmental management
- Attitudes to EMS activities
- Preferred conservation, community and resource enhancement projects
- Preferred method of ongoing contact.

Contribution to the 'Sustainable' Red Sea Region Tourism Branding

The ecolodge should be an environmental and conservation leader, particularly within the travel trade, in Egypt and their selected region for investment.

The proponent will want to have an active role in the local tourism association and their proposed involvement must be evident in ecolodge proposal. It is in the proponent's best interest to promote sustainable tourism throughout the region and contribute to a regional tourism association is an effective way.

Carbon-neutral Travel

All travel to trade shows and familiarization trips are to be carbon neutral. There are numerous associations that can offset the emissions of the trip to the trade show or conversely the arrival of the foreign tour operators to see the ecolodge.

Green Travel Recognition and Certification

Join Select Green Accommodation Certification and Awards programs. Travelers are increasingly attracted to accommodation facilities that have been identified as environmentally responsible or that have one or more well-known awards. Both are important marketing tools and also ensure that the ecolodge continues to be a responsible operation.

The ecolodge should seek the 'Responsible Tourism Award' or equivalent within 2 years of opening. By year 3 or 4 the ecolodge should be ready to launch a certification process from a recognized organization such as EcoTel or Green Globe.

Use Your Website to Present Environmental Initiatives

More than 90 percent of those visiting the ecolodge will learn of the location and services on the web site. Consequently it is essential to dedicate a large portion of the lodge web site to the various environmental, conservation and community initiatives. It is also important that the site include the following topics:

- List and describe local flora and fauna
- Introduce local Bedouin culture and values
- Describe area geology and geomorphology
- Identify unique features (desert, coral reef, coastal zone, and marine species).

The site may also a commercial outlet for the online sales of local arts and craft.

Media Day

Invite journalists/travel writers to inspect green initiatives and learn about your monitoring and reporting efforts. Media, and in particular travel writers, are attracted to facilities that demonstrate environmental action. Egyptian media can prepare press releases for the local population as well as distributing copy to the international travel trade journals.

Media day should be sponsored in concert with a new 'green' initiative and include the participation of local communities.

Partner with Carbon Offset Organizations

Beyond the specific efforts identified above and other efforts to be environmentally responsible there are still many activities, such as internal travel that contribute to global warming gases. The investor can ensure a greener operation by donating to any number of carbon emissions offset programs. Typically the funds are used to support new renewable energy or reforestation projects that help offset the greenhouse gases as a result of the travel.

The same program can be offered to guests who wish to make their trip to the ecolodge carbon neutral.

Area Eco-itineraries and Day Trips

The proponent must demonstrate the value of offering attractive and informative tours in the region and local communities.

Briefings for Employees and Visitors

All trips will start with a detailed briefing about the marine and desert environments and communities to be affected by the tour. The Code of Conduct (see criteria 15) will be reviewed with the guests.

Guide Training Program

Ongoing training programs will be made available by the ecolodge for all those who have contact with the visitors on the itineraries. Programs will be available to tour guides, naturalists, driver/boat operators, and dive masters.

The training programs should consider the following topics:

- Introduction to guiding and visitor services
- Overview of ecotourism and sustainable tourism
- Market characteristics
- Storytelling and communication skills
- Group dynamics
- Risk management and evacuation
- Tour planning and management
- Professionalism and leadership skills
- Photography
- Desert and marine ecology
- Early history archaeology
- Regional history
- Land and marine mammals
- Plant identification
- Bird knowledge.

Solid Waste Management

No solid waste will be left after a trip. This includes all solid and human wastes. For full day or overnight trips in the desert, the tour organizer must bring a portable toilet for the guests.

Controlling Impacts on Wildlife

The ecolodge will develop it own set of guidelines for controlling the impact of the visitor on wildlife. These guidelines will be prepared in collaboration with a reputable biologist.

SECTION 3: TDA ECOLODGE RATING SYSTEM AND CHECKLIST

The following rating system has been designed to make a realistic assessment of an ecolodge or any accommodation facility that proposes to be environmentally and socially responsible. It is comprehensive in that it deals with the essential techniques, practices, and mechanisms that can normally be expected in a facility that professes to be eco-friendly.

A 3-TIER VALUE RATED SYSTEM

The assessment technique is simple and is based on a 3-tier rating system that has been developed exclusively for TDA. Since not all activities and practices have a similar impact on the physical and social environment it is necessary to weigh some components more heavily than others. For instance using recycled paper through the facility has less impact than installing solar panels or even eliminating toxic cleaners.

The following numerical categories will be used:

7 POINTS For those corporate (investor) commitments that will have a major and lasting impact on the environmental and social environment resulting in increased local jobs, protection of limited resources, reduction of carbon emissions and contributing to biodiversity enhancement

5 POINTS For those activities that have an important yet moderate impact on the local economic well being, environmental values and biodiversity conservation

2 POINTS Those efforts that are an integral part of the ongoing design and operations of any responsible accommodation facility.

CHECKLIST STRUCTURE

The evaluation of the ecolodge proposal has been divided into three parts:

PART I: Physical Area and Standards

Unit size by category

Common and administration areas

Recreation areas and parking

Set backs

PART II: Corporate Policy, Stakeholder Participation and Business Plan

Corporate environmental values and policy

Involvement of Stakeholders

Research and visitor projections

Management structure and financing plan

Business model and feasibility

PART III: Physical Design and Equipment

Site and building layout and design and operations

Energy and water conservation technologies

Green management.

THREE STAGE EVALUATION PROCESS

In fairness to the investors and to enable TDA to achieve the highest possible level of environmentally and social responsibility, a three-stage evaluation is proposed.

Therefore the Checklist has been structured to:

1. Complete an initial evaluation of the project, using a 3-tier evaluation system
2. Provide an opportunity for feedback, either TDA's suggestions for improvements or from a source of additional information and resources
3. Re-evaluation and second stage rating

If the investor does not achieve adequate points the project will be rejected by TDA and a completely new application will be required.

The following table is an all-inclusive checklist for evaluating the proposed ecolodge or sustainable lodging facility.

The table has three columns for rating the proposed facility. One is for the identified maximum value of each of the criteria (2, 3, or 7); the second is for TDA's assessed value of the facility's response to each criteria; the last is for TDA's assessed value after the developer has reacted to the comments and ideally improved the response.

PART I: Physical Areas and Dimensions

Table 2 Checklist: Proposed Ecolodge or Sustainable Lodging Facility

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	#1	#2		
1.0	Area: Dimensions and Surface				
1.1	Total Units One cluster: 20 – 30 units Two clusters: 30 – 50 units Three clusters: 50 – 70 units	7			
1.2	Built Area: 20% of total surface	5			
1.3	Accommodation Density: 2 to 4 rooms/fedan (4200 sq. m)	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
1.4	Building height: Maximum: 2 floors (5.5 - 6 m)	5			
1.5	Setback from shoreline: Buildings: 200m (legal) Light structures: 50m NB: Variations acceptable: permission from the Shoreline Protection Authority	5			
1.6	Setback from road (coastal site): Minimum: 500m with no screening Minimum: 300m with screening and landform	3			
1.7	Setback from road (desert site): Minimum: 1.5 km with no screening Minimum: 1 km with screening and landform	3			
1.8	Room Size: Standard Ecolodge: Dimensions: 3.7m x 7.3m (plus balcony/porch) Average Area: 26.8 sq. m Allowable: 26 sq. m – 30 sq. m	5			
1.9	Room Size: Deluxe Ecolodge: Dimensions: 4.3m x 8.5m (plus balcony/porch) Average Area: 36.4 sq. m Allowable: 35 sq. m – 37 sq. m	5			
1.10	Room Size: Ecolodge suite (2 rooms): Area: 36 sq. m – 40 sq. m (plus balcony/porch)	5			
1.11	Room Size: Eco-Tent Unit: 25sq. m – 32 sq. m (plus veranda)	3			
1.12	Room Layout Entry and Storage: 15% - 20% Living Area: 30% - 40% Sleeping Area: 20% - 40% Bathroom/Dressing Area: 15% - 20% Total furniture: 33% Add another 30% for kitchenette	3			
1.13	Guest circulation, administration and services areas: Office, hallways, lobby Restaurant and lounge Resource centre, reading room, massage room 45 to 55 sq. m per room	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
1.14	Food and Beverage Area: 1.1 – 1.7 sq. m/seat	3			
1.15	Recreation facilities: Salt water swimming pool: 6m x14m or Surface area: 2 – 3 sq. m/swimmer	3			
1.16	Recreation facilities: Hot tub: 8 – 10 person	3			
1.17	Parking stalls Automobile: Width: 2.5 m x 5.5m Overall Area: (including driving and turning lanes): 24 -28 sq. m Motor coach: 3.5m x 12m 4x4: 3.5m x 6.0m Small truck or camper: 3.5m x 6.5	3			
1.18	Entrance Road: Driving Surface: 8m	3			
1.19	Walking trails: 1.2 -1.5m	3			
	TOTAL				

PART II: Corporate Policy, Stakeholder Participation, and Business Plan

Table 3 Checklist for Corporate Policy, Stakeholder Participation, and Business Plan

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
1.0	**Company Environmental Record (history + policies)**				
1.1	Previous Tourism Accommodation + Hospitality Experience	7			
1.2	Ecolodge (or eco-enterprise) Development + Management Experience	5			
1.3	Corporate Environmental and Sustainable Policy + Performance Standards-- Published and distributed	5			
1.4	Knowledge of Egyptian Environmental Laws + Regulations	3			
1.5	Desert/coastal Construction + Operations Experience	3			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
1.6	Participation in regional and/or national environmental and/or social organizations	3			
1.7	Membership in an international Ecotourism/Ecolodge Association	3			
2.0	**Local Stakeholder Involvement + Benefits**				
2.1	Community Relations Initiatives Plan-- Community impacts + benefits assessment and action plan	5			
2.2	Stakeholder contact + awareness of the ecolodge project	5			
2.3	Local ownership, equity participation or co-management	7			
2.4	Sponsor a local school environmental program per year (e.g. Earth Day)	5			
2.5	Purchase agreements with local producers and suppliers (e.g. food, handcraft, guide services, musicians)	7			
2.6	Promotion of local cultural artistic and performing arts (music, dance, storytelling)	5			
2.7	Commitment to actively support community cultural, artistic and sports activities	5			
2.8	Commitment to contribute specialist staff (e.g. operations engineer) to assist with community infrastructure problems and emergencies	3			
2.9	Appoint a Community Liaison Officer	3			
3.0	**Business Plan, Market Analysis + Financial Viability**				
3.1	Executive Summary Concise summary of the business model. Snapshot of financial viability	3			
3.2	Description of the Company Knowledge of ecotourism sector and other markets	3			
3.3	Ecolodge Business Description Adequate description of the site and the adjacent area Business model	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
3.4	Ecolodge Market Analysis Market segment research Trends Competitive analysis	7			
3.5	Marketing Study and Visitor Projections Preferred market segments and projections Partnerships	7			
3.6	Operational Plan Numbers of employees functional areas of the business	7			
3.7	Management Structure and Organization Available skills Training program	5			
3.8	Monitoring and Evaluation Financial performance Environmental objectives	3			
	TOTAL				

PART III: Physical Design and Equipment

Criteria Categories

In order to facilitate the use of the checklist the numerous criterion will be structured within 18 categories. It is also anticipated that when one category is particularly weak it will enable the TDA to work with the investor to improve the facility and achieve a higher rating. The categories are as follows:

1. Site selection, EIA, Carrying Capacity, + Design
2. Sustainable Architectural Planning + Engineering
3. Building Materials
4. Construction Techniques
5. Energy Conservation
6. Water Conservation
7. Waste management and Recycling
8. Laundry, Housekeeping + Kitchen
9. Purchasing Practices
10. Food and Beverages
11. Air Quality
12. Chemicals and Plastics
13. Employee equity, participation and training

14. Contribution to Conservation + Community Awareness
15. Visitor Experience and Interpretation
16. Monitoring and Evaluation
17. Green Marketing
18. Itineraries and Day trip

Table 4 Checklist: Ecolodge Physical Design and Equipment

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
1.0	Site selection, EIA, and Site Design				
1.1	Comprehensive site selection process	5			
1.2	Site inventory and analysis (special features, topography, views, vegetation, etc)	5			
1.3	EIA + Carrying Capacity Assessment	7			
1.4	Overall Site Suitability + Access	3			
1.5	Screening + visual integration with landforms	3			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
1.6	Facility location, layout and orientation	7			
1.7	Natural/cultural/archaeological resource protection measures	5			
1.8	Landscape (and biodiversity) enhancement, landscape planting + interpretive trails	5			
1.9	Use of only native + drought resistant landscape vegetation: -- xeriscape rock garden -- soil enhancement for water retention	5			
1.10	Use of native trees (e.g. acacia) to provide shade and reduce heat gain on buildings	5			
1.11	Minimal site disturbance (except creating landforms) + no unnecessary compaction	7			
1.12	Outdoor lighting is non obtrusive and at a pedestrian level	3			
1.13	Recreation Facilities: -- Chloride free salt water pool -- Games area	3			
1.14	Overall site ambiences, opportunities for understanding, contemplation, education	5			
1.15	Comprehensive site design specification and supervision	7			
2.0	**Sustainable Architectural Planning + Engineering**				
2.1	Professional Services (architects, landscape architects, engineers) Experience	7			
2.2	Material Life-cycle Analysis	5			
2.3	Alternative Technology Options	7			
2.4	Architectural program + overall layout of facilities	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
2.5	Scale of Development including mass, proportion, balance and composition	7			
2.6	Interior ambience: -- natural light -- natural ventilation + shading -- views + contact with nature	5			
2.7	Architectural Motif -- use of indigenous forms and materials	7			
2.8	Use of color: Muted colors that blend with the local environment + reflect light	5			
2.9	Double glazed glass and overhangs to prevent heat gain + operable windows	3			
2.10	Staff efficient design and building layout (movement + functions)	3			
2.11	Adopt guidelines of Green Building Council's Leadership in Energy and Environmental Design (LEED) program	7			
2.12	Comprehensive set of architectural construction drawings, specification and supervision	7			
3.0	**Building Materials**				
3.1	Use of Local (and natural) Building Materials: - stone, sand, reed, cotton, hemp	7			
3.2	Use of local vegetation only for landscaping	7			
3.3	Use of Recycled Building Materials (wood, glass, rubber, etc)	5			
3.4	Wood: Either certified (from a sustainable forestry) or grown in Egypt	3			
3.5	Use of locally made furniture, fixtures + decorations	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
3.6	Non toxic or off-gassing (Volatile Organic Compounds) materials and furniture	7			
3.7	Selection of durable (long-life), low maintenance materials	5			
4.0	**Construction Techniques + Procedures**				
4.1	Contractor experience in sensitive areas	5			
4.2	Site resources protection measures	7			
4.3	Use of simple and local building techniques: -- Manual rather than equipment -- Use of local labour	7			
4.4	Low impact construction techniques	5			
4.5	Low energy tools + construction equipment	3			
4.6	On-going site supervision with emphasis on resource protection	7			
5.0	**Energy Conservation**				
5.1	Energy Conservation Measures (ECM) and Monitoring Plan -- Responsible person	7			
5.2	Use of Solar Panels (Lighting + appliances)	7			
5.3	Use of thermal hot water heaters	5			
5.4	Wind turbine/hybrid power source	7			
5.5	Installation of low energy consumption appliances (kitchen, housekeeping, maintenance)	5			
5.6	Low consumption fixtures and occupancy sensors -- rooms and common areas	7			
5.7	Laundry uses of solar energy to heat and dry towels and bedding	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
5.8	Sub-metering by department: -- restaurant, recreation areas -- guest rooms	7			
5.9	All hot water pipes insulated to prevent heat loss	3			
5.10	Preventative maintenance program for all electrical installations and equipment	5			
5.11	Visitor energy-use awareness program	5			
5.12	Hybrid Vehicles + fuel-efficient Boat motors	7			
5.13	Fuel cell Backup Generator	3			
6.0	**Water Conservation + Recycling**				
6.1	Water Usage and Conservation Plan: Water saving targets -- Responsible person	7			
6.2	Efficient desalination plant	7			
6.3	Grey water treatment + recycling for landscaping	7			
6.4	Drip irrigation practices	5			
6.5	Water saving devices (kitchen, maintenance and housekeeping)	7			
6.6	Water saving devices (Guest rooms)	7			
6.7	Regular leakage assessment program + reporting	5			
6.8	Install compost toilets (or dual flush), waterless urinals + low flow faucets/showerheads throughout	7			
6.9	Weekly recording of total water consumption (by department)	3			
7.0	**Waste Management and Recycling**				
7.1	Waste Management Plan -- Solid waste reduction targets	5			
7.2	Reduced packaging measures	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
7.3	Refillable Amenity Dispensers (soap, shampoo, creams, etc)	7			
7.4	Kitchen + Landscape vegetation Composting + Disposal Program	7			
7.5	Separation + Recycling program (metal, glass, paper, cooking oil, etc)	7			
7.6	Donate surplus/used items to local community	5			
7.7	Kitchen/restaurant use only refillable/recyclable containers + no single packaging (sugar, cream, juice, condiments) + cups/glasses	3			
7.8	Use of on-site prepared (biodegradable, non-corrosive, phosphate-free) cleaners, polishes, + pesticide.	5			
7.9	Inform guests of recycling program and in room waste separation	5			
7.10	Adequate for separation and storage of solid waste before disposal	3			
8.0	**Laundry, Housekeeping, and Kitchen**				
8.1	All appliances rated efficient by the Energy Star program or equivalent. (dishwashers, steam cookers, refrigerators, exhaust fans, washing machines, vacuum cleaners, etc.)	7			
8.2	Install dishwashers with short cycle, water reuse + heat recovery (to heat water) options	7			
8.3	Use proximity-style (back shelf) exhaust hood + variable speed	3			
8.4	Use low-flow sprayers for pre-washing	3			
8.5	Use ozone to disinfect hands, foods and food prep surfaces	3			
8.6	Install washing machines multiple washing cycles, ozone treatment	5			
8.7	Implement a towel and linen reuse program	5			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
8.8	Develop Operational Manual for each of these departments	5			
9.0	**Purchasing Practices**				
9.1	'Pre-cycling' Purchasing and Consumption Plan	5			
9.2	Bulk buying measures (cleaners, imported foods, etc.)	7			
9.3	Recycled Materials Purchases (Paper, glass, wood)	5			
9.4	Active 'By local' program + practices -- agreements with area SMEs	7			
9.5	Durable + Reusable product purchases	5			
9.6	Life-cycle Audit Procedures for all purchased materials	5			
9.7	Services (Consultants, legal, accounting) Audit	3			
9.8	Supplier Awareness Program + Agreements -- Suppliers Compliance Manual (Purchasing criteria that reflects the ecolodges' environmental and social policy)	3			
10.0	**Food and Beverages**				
10.1	Use of fresh organic foods and beverages	7			
10.2	Purchase of local vegetables + meat/fish/poultry	7			
10.3	Food waste distributed to villages and used as animal feed	3			
11.0	**Air Quality**				
11.1	All no-smoking rooms + guest areas	5			
11.2	No VOC off-gassing from synthetic fixtures (carpets, drapes, fabrics)	7			
11.3	Formaldehyde free: no pressed wood products (particle board, fiber board, plywood, furniture finishing)	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
11.4	All windows are operable + oriented for maximum ventilation	5			
11.5	Allergen-free rooms: de-ionizer to eliminate allergens, spores, mold and bacteria	5			
11.6	Use live plants in rooms, restaurant and guest areas	3			
11.7	Use energy efficient vacuum cleaners to filter and remove dust and sand	3			
12.0	**Hazardous Chemicals + Plastics**				
12.1	Policy to avoid plastics + Styrofoam	7			
12.2	Use of only biodegradable pesticides, herbicides + fungicides	7			
12.3	Use of non toxic cleaners, solvents + paints	7			
12.4	Use of toxic free furniture (e.g. no pressed wood, fiberglass, plasticizers, etc)	7			
12.5	Safe fuel + machinery storage	3			
12.6	Employees training program for chemical use and handling	3			
13.0	**Employee Equity, Participation, and Training**				
13.1	Proactive 'equal opportunity' local hiring practices -- At least 50% from the region	7			
13.2	Local hiring does not create undesirable conditions in the local community -- Favoritism, economic disruption	5			
13.3	On-going Employee Environmental Management Training + Evaluation Program *(for management + staff)*	7			
13.4	Employees actively involve in environmental program -- Environmental coordinator -- Green team -- Incentive Program	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
13.5	Employee Environmental Management Manual -- Environmental practices and procedures -- Employees responsibilities by department	7			
13.6	Progressive work policy (fair wage + benefits, safe environment)	7			
13.7	Local and national fair trade purchasing practices	5			
14.0	**Contribution to Conservation + Community Awareness**				
14.1	Portion of profits to community + conservation projects	7			
14.2	Community Relations Plan and activities	5			
14.3	Proposed Conservation Projects	7			
14.4	Proposed Community Project	7			
14.5	Community Liaison Position	3			
14.6	On-site sale and demonstration of local handcraft + foods	3			
15.0	**Visitor Experience, Impact, and Interpretation**				
15.1	Visitor Code of Conduct	7			
15.2	Pre-trip information packages -- Regional resources -- Local cultures and traditions	5			
15.3	Available Local Interpretation Programs + Educational Materials	5			
15.4	Offer area ecotours with local or community guides: -- local villages, national park	7			
15.5	Promote and offer contact with local residents (villagers, local entertainers, artisans, etc.) and the natural resources (marine, desert)	5			
15.6	Guest access to conservation + community projects	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
15.7	Guest Guarantee Program: -- Overall satisfaction with visit -- Environmental expectation met	5			
16.0	**Monitoring, Evaluation, + Emergency Response + Security**				
16.1	Water Management + Audit Plan -- water saving monitoring -- water quality monitoring (rooms, kitchen swimming pool)	5			
16.2	Energy Management + Audit Plan -- Energy saving targets -- Monthly consumption monitoring + reporting	5			
16.3	Waste Management + Audit Plan -- Reduction, recycling, + reuse targets	5			
16.4	Employee Awareness Audit Plan	3			
16.5	Visitor Satisfaction + Awareness Audit -- Impact of environmental programs	3			
16.6	Environmental Emergency Response (Contingency) Plan and Reporting System -- on site -- adjacent to the site	7			
16.7	Visitor Safety, Security and Evacuation Plan -- crime, health, desert travel -- water safety	5			
17.0	**Green Marketing, Public Relations + Communication Activities**				
17.1	Target environmentally responsible (ecotourists) + green markets	7			
17.2	Low impact marketing mechanisms -- Internet + digital marketing -- recycled paper + soy-based ink	5			
17.3	On-going green market research -- National + international markets	7			

	Ecolodge Evaluation Criteria			TDA Comments + Proposals	
	Rating Values (see legend above)	**#1**	**#2**		**#3**
17.4	Regular Guest Survey -- Environmental expectations, -- Preferred method of contact, etc.	5			
17.5	Contribution to 'Sustainable' Red Sea Region Tourism Brand or equivalent	5			
17.6	All travel to trade shows and Familiarization trips to be carbon emission free	3			
17.7	Join Select Green Accommodation Certification and Awards Programs	7			
17.8	Section of company/ecolodge web site to present environmental initiatives	5			
17.9	Media Day: invite journalists/travel writers to inspect green initiatives, monitoring and reporting	3			
17.10	Partner with carbon offset organization + offer guest the option	5			
18.0	**Area Itineraries and Day Trips**				
18.1	Code of Conduct + Briefings for Employees and Visitors in Marine + Desert environments	5			
18.2	Program to train guides, naturalist, driver/boat operators, dive master, etc.	7			
18.3	Measure to manage all solid and human waste while traveling	7			
18.4	Guidelines for controlling impact on wildlife from motorized vehicles and wildlife viewing	5			
	TOTAL VALUE				

ANNEX I: ECOLODGE BEST PRACTICES

1. MAHO BAY ECO-RESORT, US VIRGIN ISLANDS

Description

The Maho Bay Eco-Resort and Camps was one of the first lodging facility in the world to provide a comfortable, low impact, and close to nature ecotourism experience. The facility, and in particular, its owner Stanley Selengut, has been a leader in the ecotourism movement for the past 25 years.

The ecolodge has received the most prestigious awards for innovation in sustainable resort development.

For instance, it is considered one of five Great Green Vacations in the world by 2005 American Eagle Latitudes Magazine

Guests enjoy enhanced vacation experiences by combining pleasure with environmental stewardship. Maho Bay Resorts are built with site-sensitive techniques that preserve, protect, and even enhance the fragile eco-system of the Virgin Islands. These techniques include:

- Elevated walkways prevent soil erosion and protect the beach and fragile coral.
- Construction methods minimized removal of vegetation and use recycled building materials such as "plastic lumber", recycled glass tiles and rubber tire rugs.
- Each building is a showcase of conservation, recycling and site restoration.
- The sun, using timers and sensors to maximize efficiency, generates much of our electricity. Passive solar design, photovoltaic, rain collection and roof scoops that circulate cooling breezes are used.
- Upon arrival, every guest is informed of the recycling program and encouraged to separate their refuse for recycling. Blue bins are located throughout the camp. The lodge recycles 100% of all aluminum cans, glass, and clear plastic bottles

Other significant environmental measures include:

- Water Conservation
  - The average water consumption per guest / day is 95 liters, compared to most resorts, which use as much as 300 gallons per guest / day.
  - An effort is made to augment the water supply by collecting rainwater in cisterns, conserving as much as possible, and by treating and using wastewater for irrigation.
  - Rainwater catchments are on almost every building and collect about 345,000 gallons of rainwater a year. This supplies water to the laundry, housekeeping facilities, and the bathhouses.

  - Wherever possible, cisterns are strategically located so that water can flow without external energy sources.
  - Water is heated with solar energy.
  - Washing machines use minimal water as well as minimal energy and use 100% biodegradable laundry detergent and limit the amount of bleach
  - The resultant wastewater stream becomes a viable water source for secondary usage.
  - All tent-cabins have 100% natural biodegradable dish soap.
- Sanitation & Water Treatment
  - Spring action faucets and showers prevent waste.
  - Low-flush toilets save up to 3 gallons per flush.
  - Clean and odor-free waterless urinals save 12,000 to 15,000 gallons per year with this new technology and water use is monitored every day.
  - Guests are asked to shower only during certain times of the day to distribute the demand.
  - Wastewater is pumped into a large aeration tank where natures own bacteria break down and separate the solids.
  - Sifting and chlorinating leave a clear liquid ready for reuse in the organic orchard and garden.
- Landscape Enhancement
  - The ecolodge uses 2,000 to 7,000 gallons of "grey water" a day without allowing any to go into the natural water system. Lateral water lines carry the nutrient-rich effluent to the surrounding vegetation and the organic orchard where bananas, oranges, okra, limes, lemons, luffa gourds and papaya are grown.
  - Rain catchments provides water for the organic garden where they grow a variety of edible and decorative plants including herbs for the kitchen. The garden beds are built from concrete that contains crushed recycled glass, and upside down bottles, which minimize cement use and recycles even more glass.
- Composting toilets
  - Use of odorless Clivus Multrum composting toilets that minimize water use and impact on the environment and maximize conservation.
  - Wastewater treatment plant disposes of 2,000-7,000 gallons of daily water output without allowing any wastewater to enter the bay. Gravity is used to transport the purified water from the treatment plant through lateral water lines that carry the nutrient-rich effluent water to adjacent terraced organic orchard.
- Recycle, Re-use, Reduce
  - Glass, including bottles, is collected in bins throughout the facility. They are sorted, crushed and mixed for use in non-structural applications. The remainder is made available free of charge to local builders, contractors or homeowners to be used as aggregate or backfill.
  - Some glass is selected, washed, labels removed, crushed and sent to a special rebirthing station. With the help of visiting glass artists, it has been producing high quality glass art and utilitarian objects. These creations are sold in the gift shop with proceeds used to help support this and other environmental efforts at Maho Bay's Trash to Treasure Art Center.

- Visiting artists demonstrate glass blowing and casting techniques for guests and teach staff basic skills of the art. Maho Bay Camps is the only resort dedicated to glass re-manufacturing from recycled bottles.
- **Aluminum Cans** are collected, compacted and melted on site in an aluminum furnace.
- **Waste paper** is used as packing material for glass and other crafts. As well:
  - Registration forms and other paperwork are kept to a minimum and departing guests are asked to return maps and guides to the desk for reuse.
  - Photocopies are double sided. Paper used on one side, envelopes and file folders are reused for rough drafts and scratch paper. There are no paper plates or cups in our restaurant, and all new paper materials contain a high percentage of recycled fibers. Newspapers are reused.
  - Guests are encouraged to recycle and reuse
- Alternative Energies
  - Alternate energy is a critical component of Maho Bay resorts' environmental practices. It was the first high end resort in the world to operate exclusively on alternate energy sources. Because of the abundant sunlight, solar energy an efficient and responsible choice although grid power is available as a backup.
  - High-efficiency photovoltaic roof panels provide energy for lights, appliances and other equipment.
  - Electricity automatically shuts off (except refrigerator) when guests lock their doors behind them.
  - Showers use hand pumps to fill a tank on the roof and gravity feed solar heated water to the showerhead.
  - Wind generators, solar panels and passive solar technology to take advantage local conditions. Some units have refrigerators.
- The Restaurant
  - Restaurant staff coordinates purchase orders with the store, gift shop and laundry to minimize deliveries. This saves fuel and reduce noise and air pollution.
  - A large shed provides ample storage space and helps our suppliers save time fuel.
  - To eliminate wasteful individually packaged, single-use items, we bulk-order all condiments and keep them in centrally located, refillable containers.
  - Only reusable plates, glasses and utensils in the restaurant.
  - Heat producing compressors for refrigerators and freezers are outside the restaurant, reducing the need to cool the kitchen.
  - Vents in the walls allow fresh air from the open-air pavilion to circulate.
- **Building Materials**
  - Only environmentally friendly, "green" building materials are use.
  - Garbage bags, old automobiles, ketchup bottles and light bulbs are recycled as components of Maho Bay Resorts
  - Many of the furniture items in the store, the administrative offices and in individual tent-cabins-were built from recycled or reused materials that would otherwise have ended up in a landfill.
  - Composite lumber is used throughout resorts as are recycled, reused, or energy-efficient products.

- In order to reduce heat emissions and electricity use, the lights are florescent.
- Administrative offices are air conditioned, but sections of the office have individual units so that only occupied areas are cooled. Air conditioning units are always turned off when the area is vacated.
- The office is equipped with reflective windows with a specially treated coating that provides the lowest possible emissivity (passing of heat from the outside to the inside).

- Site Development
  - The 114 tent-cabins are built on raised 16' × 16' platforms; sites for these other buildings (the restaurant, store, registration, bathhouses, administrative offices and the dining pavilion) were chosen to minimize environmental damage.
  - All buildings are connected by raised walkways to prevent vegetation from being trampled. Ground cover and other plant and animal life continues to flourish underneath the raised walkways and tent-cabins, and the trees and vegetation whose lives we spared return the favor by protecting us and our guests from the hot tropical sun.
  - The ground cover has remained intact and provides protection from the elements, and prevents construction runoff from spoiling the fragile reef
  - To minimize disturbance to the environment, electric lines and water pipes either run along the ground or, in many cases, are attached to the underside of our boardwalks.

2. ALILA UBUD + ALILA MANGGIS ECO-RESORTS, BALI

Description

These 2 resorts received Green Globe Certified status under the global certification programme w.e.f. in May 2007. This global programme recognized the resorts' commitment to operating at the highest environmental standard level.

Certification was the final step in an ongoing process during which Alila Ubud and Alila Manggis have successfully met key environmental benchmark indicators for:

- Energy and water consumption,
- Total waste production
- Community commitment.

The certification process involved an on-site audit by an independent third party Accredited Assessor. Such an audit will be conducted annually to review and assist the resorts in their continued commitment to the Green Globe standards.

Alila Ubud has achieved Best Practice results in:

- Waste recycling with its on-site organic composting,
- Local involvement through a village agreement initiative and create a positive impact on the community – economically, socially and culturally,
- Recycling of 80% of its water consumption.

Alila Manggis has:

- Reduced of water and electricity consumption by over 30%
- Employs 85% of its staff from within 20km of the resort and offers extensive training and career path development for all employees.

Future environmental projects and goals for these resorts include:

- Reducing its paper consumption by 50% in 2007 and gradually changing all of its paper usage to 100% recycled paper**.**
- Encouraging their travel partners to switch from fax to electronic mail to reduce paper consumption.

Green Globe Asia Pacific says: "They have demonstrated through a variety of initiatives, that the business and its employees can make a difference by reducing their environmental impact. The commitment they have shown by participating in the Green Globe program and their achievements set an example for other businesses to follow."

The vision for the two resorts included holistic environmental and respect for the environment and local communities and aims to link natural conservation, community and commerce in one integrated cycle.

Alila Ubud offers special tours introducing and preserving Indonesia's traditional textiles, especially those made in Bali. Alila Manggis works closely with local dive operators to build programs and raise awareness on protecting the coral reefs.

Both resorts are active supporters of local programs that aim to raise awareness of global environmental issues in their local communities, such as Earth Day, World Environment Day, and the annual Clean Up the World.

Alila Ubud and Alila Manggis were recognized for their contributions to environmentally sustainable tourism and named winners in the inaugural Wild Asia Responsible Tourism Awards, which supports conservation initiatives in Asia.

3. TIAMO ECOLODGE, ANDROS ISLAND, BAHAMAS

Description

Tiamo is an environmentally conscientious tourism destination without sacrificing the comfort and quality of the guest experience.

They have won several awards and had significant media attention, for "innovation and excellence".

Tiamo sets new standards in development and business, and encourages others to join in the effort to preserve the beauty of the Bahamas. Tiamo remains an eco-friendly nature resort without compromising the Bahamas nature experience.

Community Involvement

Environmental conservation requires the support of the local community. Staff members are educated and trained and have agreed to an environmental code of ethics as representatives of Tiamo. They are encouraged to participate in local community cleanup efforts and implement practices they use at work in their own homes.

Tiamo regularly participates in local trash clean-up projects, donating staff time, vehicles and fuel to aid in this process. They work with local schools on ecotourism, clean community projects, reef and fish protection classes, iguana/turtle protection classes and work with the help of organizations such as:

- Reef Relief, Shedd Aquarium,
- The Wildlife Conservation Society
- The Bahamas National Trust.

Sustainable Tourism Construction

Site clearing for Tiamo was done by hand using machetes and chainsaws to preserve the existing vegetation. All transport of materials to the site was done by hand, using small shallow draft boats to reduce the likelihood of the dredging that a larger vessel might do.

All wood used in construction was precut in one area, then moved by hand to each building site and assembled with light power tools.

A prototype building was constructed in the US prior to ordering materials in order to ensure the least possible waste during construction. Scrap materials were saved and have been used to make furniture and other items. Most construction was done utilizing electricity generated entirely by the solar power system. The construction crew consisted of a local South Andros Island crew. Up to twenty locals were employed at one point during construction with only three non-Bahamians as part the construction management team.

Building Design

Tiamo Ecolodge building design incorporates three major objectives:

- Minimum site impact
- Passive-cooling
- Energy efficiency

Each building is elevated using simple columns for minimum site impact and cooling purposes. No land alteration was needed, minimizing erosion. Buildings use several passive-cooling techniques including:

- Wrap-around porches (to keep direct sun from main living areas);
- White reflective roofs;
- High-pitched ceilings; and
- Open design for maximum airflow.

Each beach bungalow has been situated according to its preexisting surroundings, placed within indigenous trees and vegetation for both an optimum view of the water and also for privacy. Buildings are wood frame structures constructed of nontoxic treated pine harvested from sustainable forests.

Guest Education

People are attracted to the Island because the facility offers an appealing nature tourism experience.

A major aspect of Ecotourism and an Ecolodge is environmental education. Clients are introduced to South Andros Island through the personalize service of the Nature Concierge Team. Professional biologists teach clients the resources of The Bahamas. This includes:

- Snorkeling the numerous blue holes and Coral Reefs;
- Hiking through various ecosystems; or
- Kayaking through The South Bight.

Operations

Tiamo's sustainable performance is based on four major functions:

- Energy Systems,
- Wastewater Treatment,
- Construction Design and
- Solid Waste.

Solid waste is one of the most challenging aspects of operating an island ecolodge. There are no recycling facilities in The Bahamas. The following are some examples of what they do to minimize solid waste:

- Purchasing
  - The best method to deal with solid waste is to purchase items that have minimal amounts of material. Tiamo bulk buys. Doing this from South Andros Island is a challenge because of limited suppliers and shippers. They purchase as much as possible from local suppliers and grow their own produce for even greater environmental efficiency.
  - The office purchases recycled paper for general office use and banana-fiber paper for letterhead and correspondence. They reuse all scrap paper, using the opposite side for the printer and scrap pads.
- Composting
  - All food waste is composted and is used later as fertilizer in the gardens.
- Paper Waste

- Paper products and packaging that is not reusable is burned and the ashes are kept for fertilizer.

- Plastic
  - Plastic is the most challenging waste product. There are no available means to recycle plastic. They reuse plastic bottles, bowls and containers where possible. They also use the guests to complete their plastic recycling effort. Many come from communities with recycling programs, therefore they neatly clean and package plastic waste in convenient bundles for guests to take back home to recycle.
- Metal Waste
  - Metal items are reused whenever possible. Items that must be discarded, specifically tin and aluminum cans are crushed and donated to the Cans for Kids program in Nassau.
- Glass
  - Glass, while easier than plastic to recycle. Tiamo only purchases beer in bottles that are bought back by the brewer. They have found a creative short-term solution for glass recycling. Any bottles that cannot be returned are crushed and used in the cement for construction.

There are many other specifics activities that preserve the natural setting and save money including:

- Using four stroke boat engines,
- Carefully planning boat runs for less fuel consumption,
- Using the clothes line instead of the clothes dryer,
- Using simple cleaners such as baking soda and vinegar instead of chemicals,

Sustainable Tourism

The main achievement is their electricity generating system.

Tiamo has a large solar field, with a daily electricity generating capacity of over 130,000 watts and a battery storage facility totaling 4,075 amp hours. It is a full service ecolodge utilizing 100% alternative energy for its electrical needs, including a commercial kitchen.

The system was designed by the Real Goods Corporation and installed by local South Andros Island citizens.

Wastewater Treatment

Grey water waste undergoes in a natural treatment process. All of the wastewater from the showers, sinks and laundry is filtered for large particles and sent through a dirt, sand and rock filter system for cleansing. They also use biodegradable, phosphorous free soaps for further protection of the land and water resources.

Black water waste (one of the most detrimental wastes to near-shore tropical aquatic ecosystems) is dealt with by using low-flush composting toilets. These are normal toilets -a ceramic bowl using a one-pint, low-flush system. Composting toilets take advantage of the natural processes of microorganisms. They break down waste into a healthy organic peat.

Hot Water

All hot water is created using thermal hot water heaters - no electricity or gas is used. Each two-person beach bungalow is fitted with a 30-gallon heater; the commercial kitchen utilizes two 50-

gallon heaters. The water heating ability is so great that tempering valves must be used to mix cold water with the boiling hot water created by the heaters.

4. LAPA RIOS ECOLODGE, COSTA RICA

Description

Lapa Rios Ecolodge is one of the best-known ecolodges in central and South America. Last year it received the US Secretary of State's Award for Corporate Excellence for its exemplary business practices.

The eco-lodge was recognized by Secretary of State, Condolezza Rice, as a U.S. company operating overseas that exemplifies the highest standards of conduct in the following categories:

- Good corporate citizenship;
- Exemplary employment practices;
- Responsible environmental stewardship and practices;
- Contribution to the overall growth and development of the local economy;
- Compatibility, and if appropriate, contribution to the local science and technology policies;
- Compliance with U.S., international and local laws and standards, especially in regards to anti-bribery, transparency, and human rights and labor.

It was also an official recognition that ecotourism is an important tool for both environmental protection and poverty reduction In 1990 the owners purchased more than 1,000 acres of Pacific lowland rain forest in the remote Osa Peninsula of southwestern Costa Rica. Their goal was to implement a vision of conservation with the local community, and with their neighbors' assistance designed a business that sustained and supported the land.

Mission Statement

The Lapa Rios Mission Statement is, "No matter how you cut it a rain forest left standing is more valuable than one cut down." To achieve this goal Lapa Rios had to become a working model of preservation, ecotourism and sustainable development. The project demonstrates that such business practices can be profitable, practical and worthy of consideration in the overall scheme of environmental and cultural protection.

Project Description

In 1990 the investors purchased over 1,000 acres of Pacific lowland rain forest in the remote Osa Peninsula of SW Costa Rica.

The project adopted the ecotourism design standards projected in 1991 by World Wildlife Fund and continues to apply values proposed by The International Ecotourism Society. Since 1993, the 16-bungalow ecolodge operation—together with its community residents—maintains the forest preserve offering high quality services and accommodations primarily to international guests seeking cultural and nature-based activities.

The Lapa Rios Rain Forest Reserve harbors flora and fauna species unique to the world and is contiguous to other first growth areas sheltering Corcovado National Park. The marine-buffered Osa Peninsula is one of the world's most bio-diverse regions, and is under consideration for a UN World Heritage Site. The Peninsula is isolated and sparsely populated with mostly small scale or subsistence farmers, a few ranchers and increasingly, people involved in emerging ecotourism businesses or related services.

In the early 1990's Lapa Rios committed to answer Costa Rica's growing demand for 'above-rustic' wilderness destinations. Non-impact Osa design buildings were hand-constructed by locals

using primarily the area's renewable materials. The thatched bungalows provide simple-yet-elegant comforts in a spectacular natural setting. Friendly, always-improving staff offers highly personalized and professional service. Former farmers-now chefs prepare multi-course, gourmet meals, and certified organic foods are promoted with rotating menu choices reflecting Central America's endemic fresh fruits and vegetables. Favorite Costa Rican recipes have added international creativity. Staff-naturalists lead educational rain forest and beach hikes dawn until after dark. Lapa Rios constantly tries to improve its product through education of staff and guests.

Good Corporate Citizenship

With labor from the local community, volunteer organizations and its own staff Lapa Rios organized and funded the building of the Carbonera Primary School. In 1993 the school buildings were donated to the Costa Rica Government. School equipment, supplies and funds for an English teacher and cultural dance classes come from Lapa Rios and its guests. With help from the Costa Rica-Minnesota Foundation, the investors founded the travelers' philanthropy La Asociacíon de Educación to raise awareness and funds to develop the Carbonera School.

Lapa Rios contributes funds, supplies and labor to regional service providers like the area's public schools and health clinic; the Pto. Jiménez police and Red Cross, its pre-school program and Children's Library; the National Park Services; provides potable water to neighbors and the School; and maintenance to the only road and bridges. All lodge business deals directly with the village's only bank. To add strength to the regional economy many supplies and food are purchased locally, even dealing directly with farmers.

Lapa Rios initiates and funds community education: the DARE program; the Osa Campaign, to promote bio-diversity conservation; No More Garbage, a community recycling effort; and an area beach clean up to initiate development for the Blue Flag program. Lapa Rios-trained employees are backbone to local social improvement.

Responsible Environmental Protection and Practices

Lapa Rios established a 920-acre biological preserve with a conservation agreement with The Nature conservancy and CEDARENA (a Costa Rican Land Trust organization) to preserve the land in perpetuity. It also:

- Committed a 5-year funded salary for an additional Corcovado National Park guard;
- Developed a Corcovado day tour and guest-support program for the Osa Campaign;
- Helped rebuild a locally run turtle conservation project
- Created a community members educational guided forest hike.
- Employs 3 local naturalists who guide registered guests in the Reserve.

To assist local economy remaining guest activities are outsourced to service providers and guides—horseback riding, fishing, surfing, a village walking tour in combination with a local farm visit, kayaking, yoga and massage.

It has also:

- Developed comprehensive, environmental management systems, including:
  - Solar-heated water panels;
  - A recycling program that includes bio-gas fuel generation from food scraps;
  - A water and electricity conservation programs,

  - An only-endemics ornamental gardens with plant identification tags
- Sources and provides certified organic foods and biodegradable products, and continuously improves sustainable practices through staff and guest education.

A guest-supported Volunteer Reforestation program uses Reserve-culled seedlings. The culture-honoring lodge design requires renewable natural building materials (palm leaves, cane, bamboo, etc.) and suppliers and transporters must be licensed. Only Rainforest Alliance-certified wood products are used but substitution with renewable materials drives construction, furnishings and hospitality accessories solutions.

Contribution to Overall Growth and Development of the Local Economy

The Costa Rican government, through the Costa Rican Tourism Institute (Instituto Costarricense de Turismo or ICT) awarded the coveted 5-Leaves Certification for Sustainable Tourism (CST) to Lapa Rios, one of the country's only two hotels or lodges to win this ranking. This best practices-best product's guideline improved the lodge's internal audit and provably raised staff performance and service quality.

- Lapa Rios employs 53 permanent Costa Ricans, all but 2 of whom are from the Peninsula, and works with more than 40 area service providers.
- Continuous staff training and skills' improvement is a part of the daily routine,
- Guest evaluations and suggestions augment the curriculum.
- Departmental cross training, English classes and promotions throughout the lodge has raised employees' concept of a career in tourism.

5. FEYEN ECOLODGE, JORDAN (DANA RESERVE)

Description

The lodge at Wadi Feynan sits deep in the mountains of Jordan's southern Rift Valley, near the west border of the 320-square-kilometre Dana Reserve. It was designed as a retreat for tourists wishing to explore an archaeologically rich area while hiking, stargazing and interacting with the local Bedouin community.

The Feynan Eco-lodge in the Dana Reserve has received an international commendation under the title "Best Overseas Tourism Project".

The ecolodge and associated sustainable tourism project, was also recognised by the British Guild of Travel Writers, an association with over 270 experts involved in travel. It gave the award to Feynan because of the benefits the local community and environment.

This adobe lodge is built entirely of local materials and has a unique arabesque design by a local architect. It incorporates traditional adobe building techniques and has produced a building that is functional, romantic and blends with its surroundings."

The seclusion of the facility is emphasised by the fact that it's eight kilometres away from the nearest road and accessible only by 4x4, one of the community shuttle services, or a five-hour hike through the gorge of Wadi Dana.

Environmental Management

Environment-friendly measures include:

- Solar powered energy; it is lit by candles at night;
- Natural ventilation systems;
- Thick insulated walls to minimise energy use; and
- The recycling of garbage and food.

An all Bedouin staff cooks vegetarian cuisine from local desert vegetation and food is stored traditionally without the use of electricity. Upon request, lamb is cooked by fire in a ditch or manually grilled over the fire for six hours," he said.

According to the Royal Society for the Conservation of Nature (RSCN), the lodge itself provides an unparalleled experience in desert accommodation. The 26 rooms, which are lit by candles at night, create an atmosphere reminiscent of the ancient caravanserai that gave rest and shelter to the camel trains that plied nearby trading routes.

Feynan Lodge is also

- Directly supports 34 local Bedouin families and the non-profit project is self-sustainable.
- The Dana Reserve is also supported itself because of the business approach in nature conservation.

The ecolodge, which opened two years ago under Wild Jordan, the business arm for the RSCN, was constructed as a pilot project in line with the organisation's efforts to provide alternative forms of income for the impoverished Bedouins in the area, whose main source of income is through goat herding.

The 9,000 goats in the area were having a significant environmental impact. The ecolodge and associated tourism activities gives people an alternative to grazing and a gradual shift towards a new economy. Bedouin youth are eager to be part of the modern world and are learning to profit from the conservation of nature.

Income generators include homemade candles and leather products, which are used at the lodge and sold throughout the Kingdom.

Each year, the two lodges and one campsite in Dana Reserve contribute around JD250,000. The revenue goes back into protecting the area and supporting the local economy

At the 2003 World Summit, Dana was chosen as one of the four best sustainable ecological projects in the world.

6. SANDIBE SAFARI LODGE, OKAVANGO DELTA, BOTSWANA (CC AFRICA GROUP)

Description

Sandibe Safari lodge is part of the CC Africa group, who are one of the more responsible tour operators in Southern Africa. Sandibe is in beautiful thatched lodge which nestles between permanent water and grass swept plains and was built with a commitment to "treading lightly on the earth". The result is an organic architecture that blends seamlessly with one of the more breathtaking landscapes in Africa.

Examples of their eco features:

- Eight intimate lodges, built almost exclusively from local materials
- Mokoro (dug out canoes) and eco-craft cruises
- Interpretive bush walks
- All buildings have been erected with the ethos of "treading lightly on the earth".

Other significant environmental measures include:

Minimizing Environmental Impact

- **Water—**Sandibe pumps waste into histosol treated septic tanks, from there into soak away pits and if necessary from there into wetland systems. This operating system is exceeds the government regulations and is superior than most other operators in the region.

  There are two projects which are the Department of Water Affairs and the Biokavango project.

  - The water at the lodge is monitored, where 4 basic tests are conducted and samples are sent to Maun Department of Water Affairs for further analysis.
  - Sandibe is to be a pilot project for the biological control of salvinia molesta (Kariba weed) which has been present in the delta since the 70's. Kariba weed is considered to constrict the species that live in the Okavango channels. This pilot project involves breeding and dispersing weevils on to the weed.

  Environmental audits have started after visit from group Conservation Manager and plans have been made to re-plumb grey water.

- **Fuel—**All fuel storage facilities have bund walls to ensure that spills and leaks are contained. The storage facility has plastic ground sheets covered with sand so that spills can be collected and shipped out if necessary.
- **Power—**All light bulbs used at Sandibe are energy saving. The generator and vehicles use less than 3000l of fuel per month, and CC Africa is investigating other sources of power supply. The camp is currently awaiting the arrival of an inverter system, which will allow for power storage and will mean that the generator is not used as much.
- **Waste Disposal & Recycling—**The staff at Sandibe recycle paper and are looking at the possibilities of utilising this resource for fire blocks and panels for housing and insulation.
  - Sandibe also collects and waste glass, tin, plastic, and oil to Maun for recycling:

- Worm farms with diamond mesh protection have been dug and are used for the treatment of wet waste from the kitchens. The resultant compost is intended for sale or to go to community gardens.
- Chemicals are limited to only those that are biodegradable and enzyme based.

- **Staff and Social Policies—**In excess of 90% of the staff for Sandibe originate from the local community. All staff receives extensive training within their individual departments. Training from "head office" champions, is on a continuous basis. Guides receive extra training through 2-month intensive training course at Inkwaze Training School (Phinda, South Africa).
- **Eco Guest Activities—**All the water-based activities are eco friendly, as they do not add any pollution.
  - Mokoro Rides – dug out wooden crafts which are paddled by hand
  - Excursion and viewing boat, is electrically powered. The old batteries are sent to Maun for recycling and disposal.

7. NXABEGA OKAVANGO SAFARI CAMP, OKAVANGO DELTA, BOTSWANA (CC AFRICA GROUP)

Description

Nxabega Safari lodge is part of the CC Africa Group. Nxabega is on the edge of the Okavango Delta within a 7000 hectare exclusive wildlife concession, on the western border of Moremi Game Reserve.

Examples of their eco features:

- Exclusive safari tents, reduces the need to transportation of building materials.
- Mokoro (dug out canoes) and eco-craft cruises
- Interpretive bush walks
- All buildings have been erected with the ethos of "treading lightly on the earth".

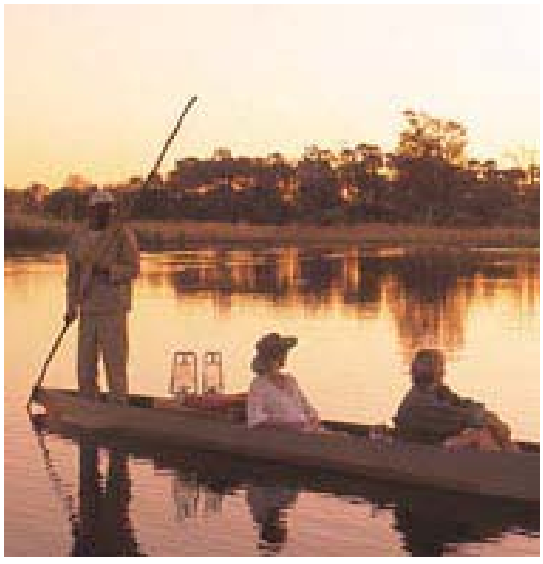
Other significant environmental measures include:

CC Africa's Vision

Care of the land, care of the wildlife, care of the people. CC Africa is dedicated to these three principles, which encapsulates their vision for Africa.

In consultation with local communities, CC Africa set up their own Rural Investment Fund, which has subsequently attained independence as a non-government, not-for-profit organisation called the Africa Foundation. Africa Foundation have raised over R11 million, in their Phinda private game reserve, through international and local grants for implementing community empowerment programs.

Some of the areas of focus are:



- **Grounded in community participation—**Africa Foundation empowers communities, adjacent to conservation areas by working with them to identify and address their social, economic, health and welfare development needs on an ongoing basis.
- **Driven by local champions—**Africa Foundation identifies local community members who will assist with and leverage the implementation of effective and sustainable projects.
- **CC Africa as the major partner—**Africa Foundation supports CC Africa's success in the people / land / animals balance and provides CC Africa with effective and sustainable community development results.
- **Guest as development partners—**Africa Foundation offers CC Africa guests the opportunity to make a lasting contribution to the people of Africa's conservation areas.

- **Stable Organization**—Africa Foundation maintains a strong organizational base with the ability to evaluate, fund and monitor projects at steadily increasing levels.

8. MASHATU GAME RESERVE, TULI BLOCK, BOTSWANA (MALA MALA GROUP)

Description

Mashatu Game Reserve is part of the award wining Mala Mala group, based in South Africa. The Reserve is part of the Limpopo-Shashe transfrontier conservation area (or peace park). This is a joint venture between the governments of Botswana, South Africa and Zimbabwe. They are in the process of collaboratively formulating a new joint venture constitution and environmental management plan.

Minimizing Environmental Impact

Examples of their eco features:

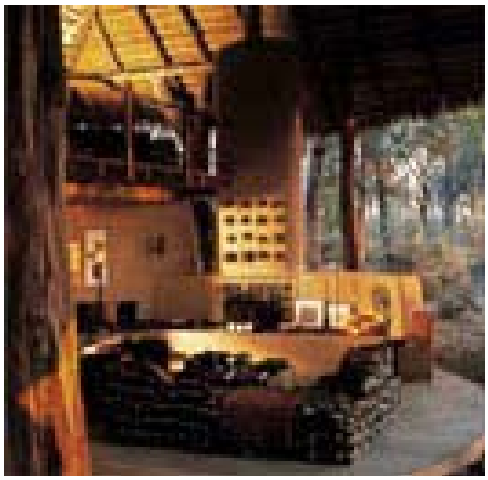
- Mashatu Game reserve, is working closely with the Botswana Department of Wildlife and the various affiliated NGO's in the set up with the Limpopo-Shashe transfrontier park.
- The curio outlets within the camps sell baskets which are locally manufactured, in villages bordering the Reserve.
- Biological disposal systems are used throughout the camps and staff quarters.
- All the cleaning chemicals, soaps and detergents used within the reserve are biodegradable to suit the disposal systems used.
- All guest toiletries are supplied locally and presented in reusable/local packaging.
- Air Conditioners and geysers are turned off when rooms are unoccupied.
- All light bulbs are low wattage light bulbs.
- Recycling of tins and glass
- Guests are requested to use the same towels throughout their stay, to reduce water consumption within the laundry.

Labor and Social Policies

- Mashatu works closely with International Labor Organization; and have staff members in all their seminars and workshops, which are primarily to do with HIV/Aids issues and prevention.
- The staff content of is 85% Motswana.

Cultural Activities

Mashatu guests have the opportunity to get to know a bit about the history of Kanana, through Archaeological / cultural tours which the reserve conducts. These tours involve tours to the Motloutse Ruins and other sites in the reserve – all of which have remained largely untouched. These sites are only available to Mashatu's guests, which ensure an exclusive and spiritual experience unfettered by tourist traffic.



Mashatu game reserve has a group of trained guides who show guests around their specially built natural history museum, known as the 'Discovery room'. Guests have access to the various displays and write ups of an educational nature, which helps to disseminate information about the Reserve.

9. SANTAWANI LODGE, OKAVANGO DELTA, BOTSWANA (SANKUYO TSWARAGANO MANAGEMENT TRUST)

Description

With donations from the Africa Wildlife Foundation and the African Development Foundation, Santawani Lodge was purchased on behalf of the Sankuyo Tshwaragano Management Trust in 2004. The trust is made up of a group of 400 households amongst the local community.

Tourism benefits the Sankuyo community at a village level, further encouraging the preservation of wilderness areas for future generations, through sustainable wildlife resource management programs.

The benefits of the local community managing Santawani Lodge are:

- The local businesses will benefit from trade with Santawani Lodge, in terms of building materials.
- Labour comes exclusively from the community and involves labour development in the form of training and courses. The isolated rural village of Sankuyo, supplies a number of the staff to the Lodge.
- Profits from the Santawani Lodge are being used to develop the local facilities within the community in the form of utilities and improving living standards.
- The Sankuyo Tswaragano Management Trust is one of Botswana most successful community based tourism organisations.
- Visits and village tours creates income for the local communities.

Cultural Activities

One of the focus points for guests staying at Santawani Lodge is cultural tours that encompass cultural visits to the local communities. Some of the local communities that benefit are Bayei (River Bushman), Basubya, Banajwa and Barotse. These communities offer cultural tours and cuisine, which directly benefit their villages.

10. WILDEBEES ECO LODGE, ST LUCIA, SOUTH AFRICA

Description

Is an eco-lodge based in Hluhluwe, in Northern Natal. The lodge is surrounded by the Hluhluwe, Umfolozi and Mkuze Park and borders the Greater St. Lucia Wetland Park, a world heritage site.

Ecotourist Activities

Ecotourist activities include:

- **Community interaction tour—**This tour visits a local Zulu community where guests can get an understanding of contemporary life in a rural area in Northern KwaZulu Natal. This activity is a vital source of income to a number of small businesses within communities in the local vicinity. The tour encompasses:
  - Meeting with a Sangoma, a traditional healer, who will explain and illustrate a Zulu ceremony.
  - A visit to a local primary school
- Horse riding, bird watching, hiking, whale and turtle watching are all activities that don't harm the environment and make use natural resources of the area.

Minimizing Environmental Impact

Wildebees Eco Lodge has a number of features that illustrates its commitment to being an eco lodge:

- Energy saving lights are used throughout the lodge
- Lights are only utilised during certain periods of the day
- Heating: other than the fireplace there is no artificial heating
- Cooling: there is no air conditioning
- Water: Use of borehole water and rainwater that is filtered and used for drinking water.
- Cooking: on gas (from a tank) and sourcing of local vegetables from a local communities.
- Waste disposal: Waste is collected and brought to the waste centre once a week. Cans, paper and bottles are collected separately and recycled.
- Inspect, pest control (how): Use of bio friendly products and mosquito nets.

- Accessible by public transport: A transfer service is offered by Wildebees from the local village. This allows staff an easy and efficient route to work.

Local Community Projects

Wildebees offers a percentage of its profits to projects which they have initiated. These projects are known as Ecolabel projects. Some of the projects include:

Odakaneni Community Ark, that feeds HIV/AIDS orphans on a monthly basis and provides them with some basic education, second hand clothes and tours. Wildebees also provide support with the management of the project and delivering foreign volunteers to the project.

Wildebees is the contact point for the Spark Foundation, a Dutch NGO which operates in the KwaJobe community and assists schools with management and sports education.

A cultural interaction program was founded by Wildebees, which allows guests the opportunity to visit a local homestead in a community 50 Kilometers from the lodge. The guests interact with the community and a local guide gives a basic introduction.

11. MOSETLHA BUSH CAMP, MADIKWE GAME RESERVE, SOUTH AFRICA

Description

Mosetlha Bush Camp is an eco run lodge within the 75 000 hectare, Madikwe Game Reserve, in northern South Africa. Mosetlha bush camp has been developed as an authentic, rustic, family run bush camp.

The camp is unfenced and guests are accommodated in Safari style raised wooden cabins set around the central camp fire and lapa. The simplicity of the camp, assists both with the rustic nature and the also to limit the environmental impact.

Ecotourist Activities

Ecotourist activities include interpretive Bush walks, in a renowned big 5 area, gives guests a good understanding of the animals of the reserve with very little impact on the environment.

Minimizing Environmental Impact

It is Mosetlha Bush Camps mission to provide an exclusive and unique wilderness experience for guests, with minimal ecological impact on the surroundings. Their main principles of ecotourism are:

- Conservation of neighbouring lands
- Benefits to local communities.
- Interpretation to both local populations and guests.

The Mosetlha bush camp has been involved in a number of different eco policies, which include:

- Helping to conserve the surrounding flora and fauna
- Trying to work with the local community.
- Offering educational interpretive programs to both employees and tourists about the surrounding natural and cultural environments.

- Using alternative, sustainable means of water acquisition and reducing water consumption.
- Providing careful handling and disposal of solid waste and sewerage
- Meeting energy needs through passive design and renewable energy resources.
- Using traditional building technology and materials wherever possible and combine these with their modern counterparts.
- Having minimal impact on the natural environment during construction.
- Blending local and physical and cultural environment through careful attention to form, landscaping and colour, as well as the use of local traditional architecture.

- Contributing to sustain local community development through education programs and research.

Water Conservation

The central ablution area reduces the amount of water consumed, and allows the camp managers to control the disposal of sewerage and solid waste from one source. This reduces the impact of waste on the environment.

12. CAMP SYNCRO, MARIENFLUSS VALLEY, WEST KAOKO (KAOKOHIMBA SAFARIS)

Description

Camp Synro is a unique safari camp for individualists, situated right on the banks of Kunene river at the end of the Marienfluss Valley. It can be reached only by 4x4 vehicle within a days drive from either Opuwo or Sesfontein.

The houses are built from river stones and covered with thatched roofs. Peaceful secluded, they stand under big Ana trees. A unique atmosphere is created by the subtle background rush of the river, the recurrent clacking of cattle and goat hooves on the pebble stones and the warbling of the mourning dove in the trees.

Guest Activities

Camp Syncro is a remote, tranquil lodge that allows their guests the chance to relax and enjoy the atmosphere, in an eco-aware, rustic environment.

- Interactive village walks, introduces the guests to the Ovahimba tribe. Meeting the local people and finding out how they utilize the seemingly barren land and provide for the village. This interaction, provides the local community with a valuable source of income
- Interpretive bush walks, through the side valleys of the Marienfluss. Gives the guests the opportunity to learn about the local flora and fauna.

Minimizing Environmental Impact

Kaokohimba Safaris strives towards finding a sustainable balance between the needs of local communities, the environment and tourism in north-western Namibia:

- By assisting communities to develop sustainable and self sufficient livelihoods
- By creating an awareness of the sensitivity of indigenous culture and the environment amongst all stakeholders.

The camp is mainly powered by solar energy. Houses are designed to be comfortable and functional. Each of the four huts is equipped with its own water fountain and two beds, which allows for a maximum of eight guests. Two separate showers and two toilets warrant the necessary privacy and also limits the use of of precious resources.

The dedication to minimise the negative impacts of tourism on environment and culture has left Kaokohimba safaris to become increasingly involved with local communities, creating tourism awareness and proving a broad range of assistance.

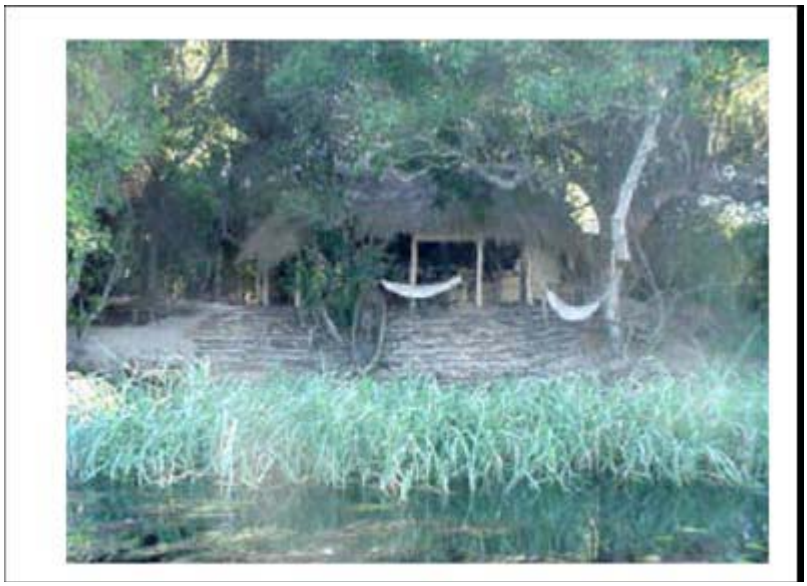
Kaokohimba Safaris collaborates with and assists a number of NGO's in the field of nature conservation and community development and has over many years established excellent relations with community leaders, headmen and councilors, local business people and individual community members.

Community Projects

- In collaboration with the Namibia Community Based Tourism Association, Kaokohimba Safaris was instrumental in designing, building and developing the Okaronhombo Community campsite.
- Kaokohimba Safaris has initiated a basket-making project in the Marienfluss Valley, involving mainly the women of the Okapupa community.
- In 1995, Kaokohimba Safaris established the Marienfluss Development fund, which is administered by the Namibia Nature Foundation. They have raised in the region of N$60 000.00 so far.
- Through the support of a private donation, Kaokohimba Safaris is initiating an environmental education project, which will show and discuss videos on wildlife to communities in the Marienfluss Valley.
- Mobile Government clinics rarely reach remote parts of the region such as the Marienfluss Valley. In the absence of formal medical treatment, Kaokohimba Safaris renders medical assistance to communities on a permanent basis, and continues to obtain and stock effective medicines for the treatment of all common ailments.

13. JUNGLE JUNCTION, LIVINGSTONE, ZAMBIA

Description



Jungle Junction is a magical experience on the Zambezi River in Zambia. Bovu Island is the main camp with wooden huts by the river and a shady campsite.

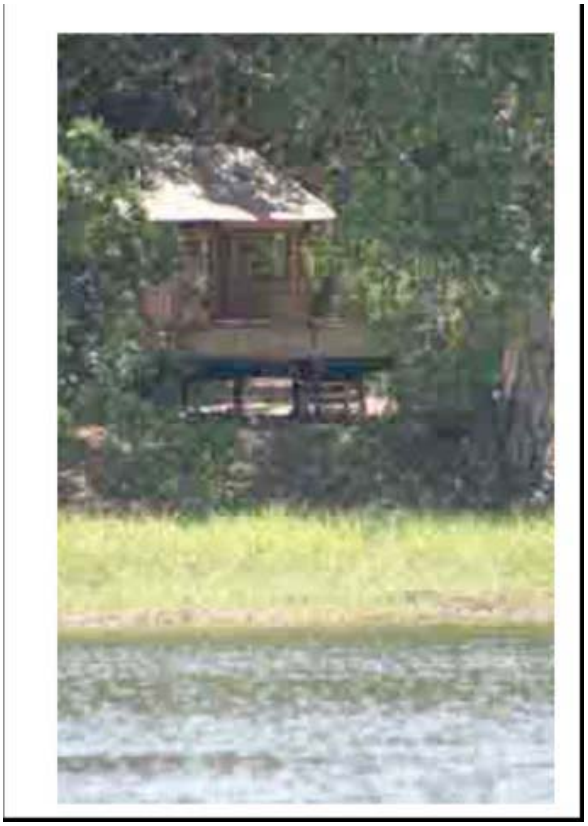
The Jungle Junction culture us based on three ideals:

- Commitment to the local people.
- Appreciation of and caring for nature.
- Creation of a tranquil and timeless hideaway.

Guest Activities

Eco-guest activities include:

- Mokoro Trips in and around the waterways of the Zambezi River. The Mokoro's are dug out wooden canoes which have been used for centuries by the water faring locals.



- Village walks, which give the guests the chance to learn about the local community and get an understanding of their foods and their way of life.

Minimizing Environmental Impact

- Water utilization. By having a central ablution block, which contains two showers, this reduces the water consumption and allows for greater control of the waste
- Power utilization
  - The rooms have no electricity; instead each room has one paraffin lamp and is cooled by the river breezes blowing through the open windows.
  - The central area is powered by a combination of a small generator and an inverter, which supplies basic power to the kitchen.

- The bar area is candle lit and the fridge and freezers are gas powered.

- The restaurant provides 3 meals, dependent of guest's requirements. One kind of meal is provided at every mealtime, this reduces waste and enables management to limit their trips for new supplies.

Utilizing Local Labor

Jungle Junction is completely staffed by the local communities. This offers vital income for a region that has suffered as Zambia's economic fortunes have fluctuated. It is a very poor community, which rely heavily on the income generated by the micro tourist industry; that is Jungle Junction.

14. KAPANI LODGE,SOUTH LUANGWA NATIONAL PARK, ZAMBIA (NORMAN CARR SAFARIS)

Description

Kapani is an exclusive private camp situated on the banks of one of the many ox-bow lagoons in the South Luangwa National Park. It accommodates just twenty guests and is open throughout the year.

In memory of the late Norman Carr and his long instilled ideals, Norman Carr Safaris aims to achieve the following ideal: 'when guests com on Safari, we like the experiences that they enjoy to leave as little mark on the natural environment and as big a mark on the local population as possible.

Minimizing Environmental Impact

As one of the larger safari companies in the region, Norman Carr Safaris produces a significant amount of waste, both bio-degradable and not. A large proportion of the waste is collected and transported out of the national park.

There is no organized waste disposal facility in the area, it is important that some sort of control is maintained. Norman Carr Safaris donates labor teams who collect the litter that accumulates by the roadside outside of the national park. They are discussing longer-term solutions to this problem with the local community.

Norman Carr Safaris is a corporate member of the South Luangwa Conservation Society and two of the companies management are founding members of the board of trustees.

The society works in partnership with the Zambia Wildlife Authority conducting anti-poaching patrols as well as being involved in many other conservation, education and poverty reduction programs.

Contribution to the Local Community

Education; the Kapani School Project was established in 1986, with the intention of offering an education to children who otherwise would have grown up without the opportunity to attend school. The cost of the children's education is covered by fundraising and donations.

The project supports 40 kids at primary school, 134 in secondary schools and 15 studying further education courses at college.

Kapani also provides building and logistical support to Yosefe School which is close to Kapani. Over recent years Norman Carr Safaris has installed a borehole with a pump, and have built and fully stocked a library and laboratory as well as various classroom blocks, teachers houses and ablution blocks.

Healthcare

The company is an active member of the Lunagwa Safaris Association Medical Fund. This medical fund manages the upkeep of the Kakumbi Clinic which is the only source of medical care for a population of around 30 000 people. Through donations the Fund supplies essential medicines and medical supplies, as well as a volunteer doctor who is stationed at the clinic.

15. BANDHAVGARH TENTED ECO LODGE, BANDHAVGARH NATIONAL PARK, MADHYA PRADESH, INDIA

Description

This eco-wildlife tent ecolodge borders on Bandhavgarh National Park, State of Madhya Pradesh, and is situated in the valley between the core forest and the parks buffer zones in over 30 acres of mature mixed jungle.

The bamboo cottages or "Baans Ghars" offer independent, luxurious, rustic rooms, that blend with the surrounding forest.

The cottages are spacious, comfortable and well furnished, yet retain the style and simplicity of a true safari camp. A private verandah overlooks the jungle. The bamboo and log construction provides the best advantages of tented accommodation while keeping the comfort, warmth and security of more conventional brick structures, so one is fully able to experience the sounds and ambience of the night time jungle.

Trails are provided so guests can walk around the extensive grounds – with naturalists who will help identify the many native bird and plant species. Bicycles can be hired for sorties to the local village to get a chance to meet the villagers.

Facilities

- Delhi trained chefs use all-natural ingredients from the organic garden.
- A screening room for guests to view wildlife film documentaries screens their own wildlife video footage, watch slide shows on bird and animal life presented by in-house naturalists.

Environmental Action

The main objectives are to reforest site and create safe corridors for the wildlife movement between core and buffer zones of the national park. Human impact is confined to only 2 do the 32 acres of land. The rest is being returned to jungle by reforestation with indigenous species of tress, both fruiting and non-fruiting varieties. The purpose is to create new habitat for wildlife.

Cottages and living areas are made entirely from bamboo and driftwood. Some hardwood has been used as accents. Bamboo is a renewable natural resource, and the most eco-friendly construction material as compared to wood or log constructions. As well:

- CFL (compact fluorescent lights) are used throughout.
- Inverters are used to store power and thus provide pollution free electricity back up during power cuts.
- Desert air-coolers are used in the warmer months instead of air conditioners, because of the significantly lower power usage.
- Instead of electric heaters in the winters guests are provided heavier duvets, hot water bottles and coal braziers in the rooms.
- Rainwater harvesting is practiced during the monsoons and during any rains at other times.
- Septic tanks and soak pits are used for bathroom waste.
- Kitchen waste is separated into biodegradable and non-biodegradable and biodegradable waste is turned to compost.

- Plastic bags and polythene is avoided where ever possible.

The staff of 12 is all from the local tribal villages. They are trained in hospitality and English. Staff and their families are encouraged to send their children to schools, to stress the value of education and good hygiene within their own communities. As well:

- The lodge provides medical costs for staff and their families.
- Guests are encouraged to visit the local villages and pottery; basket weaving, cane making workshops etc are organized for guests.
- Locals who have been born and brought up in the forests are given language skills and technical training (the English names of birds and plants that they can identify in their own language) to provide guests with the services of naturalists who has traditional knowledge of the flora and fauna.
- Fruit and vegetables are purchased from local farmers and vendors whenever possible.
- When outsourcing vehicles whether for transfers or for game drives local owner driven vehicles are used.
- Tribal dancers perform for the guests. They are not a professional dance troupe, but a group of local tribal youths who offer the dances that are done traditionally in their villages for celebrating weddings, births, harvests etc.
- Guests are given information and guidance regarding local customs, costumes, traditions etc.

Using 100% local, previously untrained staff, most employees started as manual laborers on the construction site. They are now trained in different aspects of the resorts operations (kitchen, cooking, housekeeping, gardening etc.) Opportunities are provided to learn a variety of skills, provide scope for promotion and career advancement.

Finally, the resort works with the local 'panchayat' (local government body) to assist with teaching aids such as books, stationery.

16. ADRERE AMELLAL ECOLODGE, SIWA EGYPT

Description

In 1997, EQI (Environmental Quality International) acquired 75 acres of palm and olive groves at the foot of a mountain's cliff called Adrère Amellal (White Mountain in the native Siwa Berber language) overlooking Lake Siwa.

Traditional Architecture

The facility:

- Is built out of indigenous material using traditional Siwan building techniques and styles. *Kershef* , a mixture of sun dried salt rock mixed with straw, is used for wall building.
- Uses furniture and fixtures are made of palm trunks and fronds, while carpentry and accessories display a variety of the region's indigenous handicraft
- Employs 100 percent Siwan labor that understand the traditional building techniques.
- Has a minimal impact on the land

- Includes natural ventilation, which takes advantage of the dry desert climate of the area, has been adopted, thereby ruling out the need for expensive energy and maintenance intensive air conditioning.
- Relies on solar and alternative energies
- Recycle the waste and wastewater it produces. Food prepared at the lodge is organically and predominantly locally grown.

Adrère Amellal consists of traditional Siwan *kershef* houses that

- Have been restored and reconfigured into 39 rooms, the annex, Tamazid, provides an additional 7 rooms.
- Furnishing is simple, but of the highest quality, drawing exclusively on local material and design to reflect Siwa's rugged spirit.
- Oil lamps and candles are used for lighting and coal-filled braziers are used for heating.

- A stone-built swimming pool is fed by a natural spring.
- Solid waste is recycled: food waste is composted on site, and local residents pick up recyclables.
- Wastewater is first settled in self-contained sedimentation tanks, allowing the liquid to flow through perforated pipes into a wetland

- Indigenous papyrus plants are grown, to complete the biodegradation and waste reduction process. The wetland is completely sealed from the surrounding environment to avoid any possibility of contamination of surface and ground water resources.

Organic Meals

- Meals include fresh yogurt, thick date syrup, eggs, local bread, fruit and rich coffee (breakfast) which is served in natural rocky grottos at the base of the mountain.
- Lunch is village style in the palm and olive grove and fed by one of the 230 springs in the area,
- Dinner is by candle light and served in the maze of dining rooms, alcoves and bars, their mud walls studded with chards, or slices, of salt (from nearby salt lakes).

17. RIVER RUN ECOLODGE AND INN, TEXAS, USA

Description

River Run Ecolodge provides a relaxing atmosphere for customers while saving energy and reducing carbon emissions. River Run's cost-saving, energy-efficient innovations enhance the comfort and aesthetic experience of the guests. The facility is also known for its gardens and early traditional architecture.

The facility is a new building that has the motif of early Texas architecture while being energy efficient.

The ecolodge was renovated from the ground up and incorporated a number of energy-efficient features from the beginning. For example,

- The insulation in its walls, ceilings, and floors far exceeds the required ratings, trapping in heat in the winter and keeping it out in the summer.
- Insulation blankets wrapped around water heaters reduce standby heat loss and cut water-heating costs.

The seasonal occupancy of an ecolodge requires a heating and cooling system capable of operating by zones. The high-efficiency heat pump units fitted with individual zone controls that allow for heating and cooling in only those areas being occupied. Programmable thermostats were installed to maintain comfortable temperatures without wasting energy. Variable speed, reversible ceiling fans in the guest rooms push warm air to the floor in the winter and pull warm air to the ceiling in the summer. These details allow the lodge to program the thermostats at a lower setting in the winter and at a higher setting in the summer without sacrificing comfort. Thermostat-controlled power ventilators in the attic provide additional to cool the lodge in the summer while minimizing energy costs.

The need for comfort and energy efficiency meant it was necessary install a very specific style of window. All of the windows at the lodge feature double-paned glass and those facing direct sunlight are tinted. Coating on the tinted windows keeps solar heat out in the summer and prevents indoor heat from escaping in the winter. This feature exemplifies River Run's philosophy: Smart planning augments the guests' comfort while lowering operating costs.

- **Lighting**—The carefully designed lighting at River Run creates ambiance and enhances moods. River Run's indoor lighting system comprises lower wattage compact fluorescent and T-8 lamps and electronic ballasts. Photo controls automatically turn off outdoor lights during the day.
- **Natural Gardens**—River Run is also appealing because of its gardens and landscaping. Since guests are not familiar with xeriscaping, which is responsible for the inn's attractive grounds.

  Xeriscape is a landscaping technique that uses drought-resistant and natural vegetation to reduce watering costs. The lodge relies on this technique to save on water bills during the hot Texas summer.

Guests are impressed to learn that a small investment in energy-efficient technologies can dramatically improve the quality and comfort of the inn, while adding revenue to the inn's bottom line. The initial investment of $1,400 saves $2,400 a year in energy costs and helps ensure that guests a comfortable environment.

18. TURTLE ISLAND ECOLODGE AND RESORT, FIJI

Description

In 1972 the owner purchased Nanuya Levu, a 500 acre barren, uninhabited island in the Yasawa Islands. The Island had been completely overrun by wild goats and the owner employed a team of local villagers to plant hundreds of thousands of trees to reverse the damage inflicted by the goats.

Since opening in 1980, the development of the guest facilities has been continuous, while at the same time, respecting the integrity of the Island by keeping the number of visitors to a minimum.

In addition to employing over 120 local Fijians, the following projects have been highly successful in making Turtle Island one of the world's leading sustainable tourism destinations:

- Planting of more than 300,000 trees over more than 30 years developing into lush forest land
- Environmental audit every five years from independent US Agency
- Green Globe 21 benchmarking of environmental management
- Preservation of mangroves and coconut groves
- Introduction of freshwater ponds to encourage bird life and Hawksbill turtles
- Building, carpentry and woodworking department responsible for making all furniture on the Island and other items for the Gift Shop
- Operation of a secondary school on the Island to educate young people from seven local villages. More than 50 students attend the school, at Turtle's cost.

The lodge created the Yasawas Community Foundation to generate funds for special projects in the area adjacent to Turtle Island. The Foundation provides assistance in the areas of health, transport, education and the development of cultural activities amongst the villages where the majority of the staff live.

The Turtle Island Vision is to provide a genuine Fijian experience and be a vital resource to its communities.

The ecolodge is committed to enriching the lives of the guests through loyal staff, proactive partnerships with local communities, and by embracing innovation.

Because of the environmental fragility of the island, there is a commitment to sustainability; Turtle is limited to only 14 couples.

Management ensures the preservation of the island's wildlife and natural habitats, and the integrity of Fijian culture. There has also been:

- An intensive reforestation program with over 500,000 trees, including 100,000 Mahogany trees
- Planting to encourage ecological diversity, re-establish indigenous forests, prevent soil erosion, create wind breaks and add to the natural beauty
- Establishment of a 4-acre organic garden to provide the island with fresh fruits and vegetables, herbs, and spices.

Community and Social Involvement

- **Turtle Island Secondary School—**Evanson Learning Centre (ELC) is part of Turtle's ongoing commitment to its local communities. Turtle commenced operation of a secondary school on the Island, in 2002. There are three primary schools serving children from seven local villages. There are over 50 students with six teachers.

  The schools teach the Fijian curriculum, and focus specifically on Yasawan history, information technology and proficiency in English.

ANNEX II: ECOLODGE REGIONAL AND SITE INVENTORY AND ANALYSIS

A. GEOGRAPHY/TOPOGRAPHY

- Egypt's physiographic region and sub-regions
- Topographic relief
- Elevation and steep slopes
- Rock outcrops

B. GEOLOGY

- Bedrock type and characteristics (structure, type, age)
- Depth to bedrock
- Unconsolidated materials (loose rocks, sands) and thickness
- Geologic cross sections

C. HYDROLOGY

- Groundwater
  - aquifer outcrops; location, extent, thickness
  - direction and rate of groundwater movement
  - groundwater recharge and discharge areas (probably off-site)
  - depth to groundwater
  - community/village well locations, depths, production, history
  - wellhead protection areas
  - quality of groundwater; pollutant sources, cleanups/remediation
  - proximity to septic and holding tanks
- Surface Water
  - types, location, direction of flow
  - watersheds and sub-watersheds
  - designation/classification of surface water bodies
  - floodplains, wadi's, wetlands, marshes, bogs
  - erosion, sedimentation

D. SOILS

- Soil types, texture, stoniness, depth, hydrological types
- Erosion and potential soil loss in cubic feet per year
- Percolation rates
- Depth to groundwater
- Surface runoff, permeability,
- Fertility (vegetative capability)
- Nutrient absorption and pH

E. VEGETATION

- Types of vegetation and mix
- Specimen tree
- Aesthetic value
- Known/possible habitats for endangered/ threatened plant species

F. WILDLIFE

- Species inventory
- Rare, threatened and endangered species
- Nuisance and invasive species
- Valuable interpretation species
- Abundance and distribution of significant species within habitat and season

G. WETLANDS, BEACHES, AND SALT MARSHES

- Descriptive factors
  - Wetlands vegetation (hydrophytes)
  - Wetlands soils (hydric soils)
  - Hydrology (presence of water sufficient to support wetlands vegetation)
- Types of wetlands
  - Salt water
  - Fresh water
- Restorations and engineered wetlands

H. LAND USE

- Existing
  - Open space, easements
- Roads, trails, paths
- Recreation features
- Waste treatment and disposal facilities (sewage and solid waste)
- Proposed land use and plans

I. CLIMATE

- Prevailing winds and sea breezes
- Sun angles by season
- Maximum/minimum fluctuations in temperature
- Seasonal precipitation
- Topographic protection (wind)

J. AIR

- Air quality
- Stationary sources of air pollution and toxics

- Vehicular air pollution/ozone areas
- Odors

K. HISTORIC, CULTURAL, AND ARCHEOLOGICAL FEATURES

- Historic sites, villages, monuments
- Historic roads, bridges and trees
- Existing or possible archaeological sites
- Heritage view sheds

L. EXISTING AND PLANNED INFRASTRUCTURE

- Transportation
- Drinking and desalinated water plants
- Sewage waste management
- Waste disposal, recycling facilities
- Energy utilities
- Communications towers

M. NOISE

- Significant sources of noise adjacent to the site

N. VIEWS AND VEWSCAPES

- Attractive views and panoramas
- Views to adjacent properties
- Views to the highway and traffic
- Views to the site

O. MARINE FEATURES

- House reef and off shore reefs
- Coves and shams
- Beaches
- Sea cliffs

P. CRITICAL ENVIRONMENTAL AREAS

Specific environmental features that merit special consideration or protection might include:

- Wetlands and salt marshes
- Steep slopes, rock outcropping, sea cliffs
- Floodplains, floodways, beaches
- Aquifer recharge areas
- Endangered/threatened species habitat

ANNEX III: PREPARING THE ECOLODGE EIA

1. OVERVIEW

An Ecolodge EIA:

- Studies of the effects of the proposed facility on the environment, i.e. on all relevant aspects of the natural and human resources
- Evaluates the expected effects on the natural environment, human health, and on the ecolodge property
- Compares various alternatives by which the ecolodge could be realized and seeks to identify the one that represents the best combination of economic and environmental costs and benefits. Alternatives include location as well as methods, process technology and construction methods.
- Is based on predictions and attempts to predict the changes in environmental quality which would result from the proposed ecolodge
- Attempts to weigh environmental effects on a common basis with economic costs and benefits.

It is a decision-making tool used to examine the environmental consequences, both beneficial and adverse, of the ecolodge and to ensure that these effects are taken into account in project design. EIA should be viewed as an integral part of the ecolodge planning process.

2. THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The Ecolodge EIA involves the following steps:

1. Preliminary Activities including scoping or setting EIA terms of reference, selecting consultants to prepare the EIA, and review of existing legislation.
2. Submission of Draft Terms of Reference to the TDA for approval.
3. Conducting the EIA study

   3.1 Collect background data and information

   3.2 Public Involvement

   3.3 Identify impacts in terms of magnitude and significance

   3.4 Socio-economic analysis of project effects/impact

   3.5 Recommend mitigation action for each impact identified

   3.6 Analysis of alternatives of the project - both economic and environmental

   3.7 Training requirements of the project

   3.8 Development of a monitoring plan

3. THE ECOLODGE EIA REPORT

Structure

- A brief introduction explaining the need for and context of the ecolodge project including:
  - Executive Summary
  - Policy, Legal and Administrative Framework

- Description of the environment
- Description of the Proposed Project in detail
- Significant Environmental Impacts
- Socio-economic analysis of Project Impacts
- Identification and Analysis of Alternatives
- Mitigation Action/Mitigation Management Plan
- Environmental Management and Training
- Monitoring Program
- Public Involvement

Policy, Legal and Administrative Framework

- Policies and legal basis within which the ecolodge may be built
- Regulations and standards applicable to the project

Description of the Environment

- A description is a record of conditions prior to construction of the ecolodge
- a benchmark against which to measure environmental changes and to assess impacts
- Includes but not limited to the following:
  - Landscape Conditions
  - Geological Conditions
    - land formations (valleys, rivers)
    - Geologic structures
    - Slope stability
  - Soil Conditions
    - Hazard potential (e.g. erosion)
    - Effective depth
    - Inherent fertility
    - Suitability for method of sewage disposal
  - Archaeological value of site
  - Biotic Community Conditions
    - **Plants**

      General type and dominant species

      Densities and distributions

      Wildlife habitat value

      Important specimen

      Endangered species

      Specimen of scientific or aesthetic interest
    - **Wildlife (marine and terrestrial)**

      General types/dominant species (mammal, fish, reptiles, etc.)

      Densities and distribution

      Habitat (general)

      Migratory species

Introduced species (exotic species)

Endangered species

Commercially valued species

- **Watershed or Marshland Conditions**

  Water quality (ground water and surface water)

  Watershed importance (on-site and surrounding area)

  Flashflood importance (on-site and surrounding area)

  Location of wells, springs

- **Climatic Conditions**

  General climatic conditions

  Noise levels

  Rainfall (average)

  Temperature (average highs and lows)

  Prevailing winds (direction and intensity)

Description of the Proposed Project

- Critical activities that will be involved in the ecolodge including construction, start-up and operations

Significant Environmental Impacts

- An exhaustive list of all impacts including minor, short term, moderate, direct and indirect.
- Manageable, significant impacts are selected, based on magnitude, extent and special sensitivity, for further study.

Socio-economic Analysis of Ecolodge Impacts

- Impacts of the ecolodge on the socio-economic environment are analyzed.
- Includes the main economic activities e.g. tourism salaries and revenues, handcraft production
- Impact on nearby communities, employment levels and training opportunities
- Impacts should be categorized in terms of positive and negative

Analysis of Alternatives

- Each alternative is evaluated with respect for its potential environmental impact and capital and operating costs
- Environmental losses and gains are combined with the economic costs and benefits to give the full picture for each alternative.
- An analysis of the "no action" alternative should be included

Mitigation Action/Mitigation Management Plan

- It is seldom possible to eliminate an adverse environmental impact, but it is often feasible to reduce its intensity. This reduction is referred to as mitigation.
- For each potential adverse impact the plan for its mitigation at each stage of the project should be documented and its cost assessed

- Essential that these costs of mitigation be adequately assessed and be documented

Environmental Management and Training

- Documents how the environment will be managed during implementation and operational phases.
- The training program for ecolodge employees is outlined.
- Identify institutional needs for implementing the recommendations of the EIA.

Monitoring Program

- Environmental monitoring program should is described costs associated with the monitoring activities
- Monitoring program should clearly state the:
  - institutional arrangements for carrying out the work
  - parameters to be monitored
  - methods to be employed
  - standards or guidelines to be used
  - evaluation of the results
  - schedule and duration of monitoring
  - initiation of action necessary to limit adverse impacts
  - disclosed by monitoring
  - format and frequency of reporting

Public/Community Involvement

- Local citizens and the community in which the ecolodge is proposed should be involved in the EIA
- Direct involvement of the affected public and the inclusion of local knowledge in the environmental protection.
- Communities may be involved in the review of the EIA at the discretion of the TDA.
- The EIA maybe the subject of a public presentation by the proponent.

EIA Review

- The draft EIA report should be submitted to the TDA for review.
- Government agencies other than the TDA maybe required to participate in the review.

ANNEX IV: SUSTAINABLE ARCHITECTURE

An understanding of 'Sustainable Architecture' is essential to the development of an ecolodge. When the building is considered as an 'ecosystem' it is obvious that it must be designed with the same skills as the planning of any natural system. Sustainable architectural design borrows directly form the basic concepts developed in the landmark document from the World Commission on Environment and Development called ***Our Common Future.***

It defined "sustainability" as:

> *'meeting the needs of the present without compromising the ability of future generations to meet their own needs'*

The construction and occupation of any building affects the local, national, and global environments through a series of interconnected human activities and natural processes. This is particularly evident in the accommodation sector in the Red Sea Region. For instance:

- The construction, equipment and personnel that are required for the building process disturb or even destroy the ecology of the site as well as possibly the marine environment.
- The procurement and manufacturing of building materials and equipment, for these resorts and hotels has an impact the global environment (pollution, carbon emissions, etc).
- Once built and operational the facility creates an on-going and long-lasting impact on the environment. For instance,
  - The energy and water used by its inhabitants produce toxic gases and sewage;
  - The process of extracting, refining, and transporting all the resources used in building operation and maintenance also has numerous effects on the environment.

The goal of **sustainable architectural design** is to identify and integrate solutions into the planning process that minimize these impacts and insure a more sustainable environment for future generations.

Jong-Jin Kim, at University of Michigan's College of Architecture and Urban Planning proposes three principles of sustainability in architecture that has been integrated into this manual. They include:

- **Economy of Resources**
  - Addresses the reduction, reuse, and recycling of the natural resources that are the input to a building.
- **Life Cycle Design**
  - Provides a methodology for analyzing the entire building process and its impact on the environment.
- **Humane Design**
  - Focuses on the interactions between the ecolodge guest and staff and the environment.

These principles generate an understanding of the various environmental impacts, (local and global) of architectural consumption. They have been used as a basis for the selection of the evaluation criteria and therefore deserve further explanation.

PRINCIPLE 1: ECONOMY OF RESOURCES

- Emphasis on the reduction in the use of nonrenewable resources in the construction and operation of buildings.
- After the ecolodges' useful life, it should turn into components for other buildings.
- The architect needs to consider two streams of resource flow:
  - **Upstream**, resources flow into the building as input to the building ecosystem.
  - **Downstream**, resources flow out of the building as output from the building ecosystem. Eventually any resources entered into a building ecosystem will eventually come out from it.

Economy of resources involves:

- **Energy Conservation**
  - An ecolodge requires a constant flow of energy input during operations and energy consumed in the process of catering to the guest such as cooling fans, lighting, food preparation and equipment operation cannot be recovered.
  - The use of renewable energy technologies reduces emissions of polluting gases
- **Water Conservation**
  - The tourist accommodation requires large quantities of water for the drinking, cooking, washing and cleaning, flushing toilets, irrigating plants, etc.
  - Water requires desalination, treatments and elimination of the salt by- product which consume energy.
  - The water that exits the ecolodge must also be treated and disposed.
- **Material Conservation**
  - Many different building materials are brought onto the sites during the construction of the ecolodge.
  - The waste generated by the construction and installation process is significant.
  - After construction, a low-level flow of materials continues in for maintenance, replacement, and renovation activities.
  - Consumer goods flow into the building to support the tourism activities. All of these materials are eventually output, either to be recycled or dumped in a landfill.

PRINCIPLE 2: LIFE CYCLE DESIGN

- The conventional model of a resort life cycle is a linear process consisting of four major phases: design; construction; operation and maintenance; and demolition
- This model does not address environmental issues (related to the procurement and manufacturing of building materials) or waste management (reuse and recycling of architectural resources)
- Life cycle design (LCD) or "cradle-to-grave" approach recognizes environmental impacts of the entire life cycle of architectural resources, from procurement to return to nature. LCD is based on the notion that a material continually moves from one form of useful life to another, with no end to its usefulness.

- The life cycle of a building can be categorized into three connected phases: *pre-building, building,* and *post-building*.

Pre-Building Phase

- Including site selection, building design, and building material processes, up to but not including installation.
- The environmental consequences of the structure's design, orientation, impact on the landscape, and materials used are assessed in terms of sustainable design
- Building materials environmental impacts include
  - harvesting uncertified trees result in deforestation;
  - mining mineral resources (iron for steel; bauxite for aluminum; sand, gravel, and limestone for concrete) disturbs the natural environment;
  - the transport of these materials generates pollution, depending on their weight and distance from the site.
  - The manufacturing of building materials also requires energy and creates pollution: especially steel, aluminum and concrete products.

Building Phase

- Sustainable architecture examines the construction and operation processes for ways to reduce the environmental impact of resource consumption
- Considers long-term health effects of the lodge environment on the guests and staff.

Post-Building Phase

After the useful life of the ecolodge its building materials become resources for other buildings or waste to be returned to nature.

Sustainable architecture focuses on reducing construction waste by recycling.

PRINCIPLE 3: HUMANE DESIGN

- Humane design is concerned with the livability of all constituents of the global ecosystem, including plants and wildlife.
- Focus on enhancing the coexistence between buildings and the greater environment, and between buildings and the guest
- Sustainable architecture provides built environments that sustain the guests safety, health, physiological comfort, psychological well being, and as well as ensures staff comfort and productivity.
- It should
  - Minimize the impact of a building on its local ecosystem (e.g., existing topography, plants, wildlife
  - Enhance the tourism experience, reduce stress, and positively affect health and well-being of visitors and staff.

ANNEX V: EGYPTIAN ENVIRONMENTAL COMPANIES AND SERVICES

ACROPOL SOLAR ENERGY SOLUTIONS

Building	Obour Bldg, #19-A
Street	Salah Salem Street
District	Heliopolis
City	Cairo
Country	Egypt
Telephone	(+20) 2 - 263 81 99
Facsimile	(+20) 2 - 607 26 50
Activities	Copper Tube Solar Collectors, Closed Loop Solar Water Heating Systems, Photovoltaic Solar Electric Power Systems

ADAN ENVIRONMENT CO

Street	384 El Haram Street
City	12111 Giza
Country	Egypt
Telephone	(+20) 2 - 246 78 10
Facsimile	(+20) 2 - 246 78 10
Activities	Plastic & Tyre Recycling Systems, Hydraulic Baling Presses, Recycling Project, Feasibility Study, Environment Consultation

AL-BOGHDADY FOR WATER TREATMENT SYSTEMS CO

Department	GoldenPro
Street	14 Ahmed Maher Street
City	43111 Suez
Country	Egypt
Telephone	(+20) 62 - 332 40 93
Facsimile	(+20) 62 - 332 40 93
Activities	Supplier of Residential Water Purification Systems, One Stage Sediment Filtration Units, Multi Stage Reverse Osmosis Units

AL-EMAN ENGINEERING CO

Street	33 International Hospital Streez
City	53111 Mansoura
Country	Egypt
Telephone	(+20) 10 - 280 84 66
Facsimile	(+20) 50 - 224 21 25
Activities	Water and Wastewater Treatment Plants, , Environmental Engineering and Monitoring, Hazardous Waste Remediation

AMATEC-ENVIRONMENTAL CO

Street	9 Akl Basha Street
District	Sedi Beshr
City	21111 Alexandria
Country	Egypt
Telephone	(+20) 12 - 435 17 68
Activities	Supplier of Environmnetal Monitoring Equipment, VOC Monitoring, Ambient Air Monitoring, Stack Gas Analyzers

ARAB GERMAN COMPANY FOR WASTE AND ENVIRONMENTAL TECHNOLOGY (AGET)

Post Box	PO Box 177
Street	Elettmad Street
City	31111 Luxor
Country	Egypt
Telephone	(+20) 12 - 236 96 04
Facsimile	(+20) 95 - 236 37 51
Activities	Wastewater Treatment for Municipal, Industrial and Touristic Fields, Solid Waste Management and Composting

ARABIAN SOLAR ENERGY & TECHNOLOGY CO (ASET)

Street	11, Sherif Street
City	11111 Cairo
Country	Egypt
Telephone	(+20) 2 - 393 64 63
Facsimile	(+20) 2 - 392 97 44
Activities	Solar Energy Applications, Water Desalination, Pumping and Drip Irrigation Systems

CAPACITY BUILDING INTERNATIONAL (CBI)

Building	International
Street	28 Misr Helwan Agricultural Road
District	Maadi
City	11431 Cairo
Country	Egypt
Telephone	(+20) 2 - 528 13 73
Facsimile	(+20) 2 - 528 13 74
Activities	Project Development and Implementation, Urban Environmental Management, Organizational Development, Clean Production

ECOCONSERV - ENVIRONMENTAL SOLUTIONS (ECS)

Street	10, El Kamel Mohamed Street
District	Zamalek
City	11211 Cairo
Country	Egypt
Telephone	(+20) 2 - 2735 9078
Facsimile	(+20) 2 - 2736 5397
Activities	EIAs and Audits, Water Resources & Coastal Zone Mgmt, Industrial Pollution Prevention, Integrated Waste Mgmt

MABROUK INTERNATIONAL

Post Box	PO Box 167
Street	Cairo Alex Highway
City	31111 Tanta
Country	Egypt
Telephone	(+20) 40 - 329 86 90
Facsimile	(+20) 40 - 329 86 90
Activities	Solid Waste Collection & Transport, Sorting & Composting, Subterra-Constructed Wetlands, Compact WWT Plants, Water Purification

PURE AQUA - EGYPT

Street	12 Nabil Khalil, Hassanin Haikal
District	Abass el Akaad, Nasr City
City	Cairo
Country	Egypt
Telephone	(+20) 2 - 261 07 43
Facsimile	(+20) 2 - 272 87 48
Activities	Brackish and Sea Water Reverse Osmosis Systems, Automatic Media Filters, Water Softeners