



# **INFRASTRUCTURE DESIGN CONCEPT FOR ECO-LODGE AROUND PROTECTED AREAS**



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## **INFRASTRUCTURE DESIGN CONCEPT FOR ECO-LODGE AROUND PROTECTED AREAS**

*Prepared by:*

**Muhammad Asif Shams**  
Enterprise Development Specialist  
Nishorgo Support Project

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# **Infrastructure Design Concept for Eco-Lodge Around Protected Areas**

Tourism has emerged as an instrument for employment generation, poverty alleviation and sustainable human development. In recent days, nature conservators have found out a new perspective of tourism through its contribution to nature conservancy. At different areas of the world, protected area managers are gaining enormous financial support for conservation through successful implementation of nature-tourism initiatives.

Nature-tourism has also shown tremendous growth rate year on year, and can provide a sustainable source of income for both the protected area management and stakeholders within its landscape. Tourism also promotes national integration and international understanding, and supports local handicrafts and cultural activities.

Since the environment is the travel industry's base product, it has been decided that nature-tourism will be promoted in the five protected areas of Bangladesh that are currently under the Nishorgo Support Project of Forest Department.

## **DEFINITION OF ECO-LODGE**

Eco-lodge, as stated here, refers to a lodge that meets the following minimal criteria:

- i) has minimal impact on the natural and cultural surroundings
- ii) fits into the physical and cultural environments through attention to design and landscaping as well as building materials
- iii) utilizes "green" technologies that provide sustainable means of water acquisition, safe disposal of solid waste and sewage and use of renewable energy sources
- iv) involves local communities in the eco-lodge development and seeks to bring about economic and educational benefits to communities, and
- v) integrates environmental and cultural education into the visitor's experience.

In other words, the eco-lodge refers to small scale tourism development that through adequate planning minimizes impacts to the environment and maximizes benefits to local communities and conservation.

### ***Cottage Designs***

Facility Design for eco-lodges should be based on an understanding of the eco-lodge's context, i.e. the relationship between local cultures and the land. The cottage designs should portray the local culture and lifestyle. The structure may follow the design of houses of indigenous community so that it can contribute to the learning process of the tourist about the lifestyle of local community. An example of the eco-lodge is given in Fig-1. However, the design and size may vary depending on budget, locality and availability of materials.

Things to remember in Eco-lodge location and designing:

- Natural contours of the landscape need to be followed.
- No high structure should be build that breaks the natural horizon line.
- Exterior color should blend in to natural environment.
- Use of lawns should be minimized or better eliminated.
- The design should maximize the potential for passive ventilation and lighting to avoid the need for air conditioning and excessive artificial lighting.

Fig.: 1



***Location***

The location of the cottage should be in close vicinity of the PAs in order to have easy access for the tourists. It is suggested that the cottages should be in the buffer zone.

Things to remember in Eco-lodge location and designing:

- Nesting, feeding and roosting sites of different animal species cannot be harmed.
- Sites of cultural importance should be respected and maintained unharmed.
- The eco-lodge location should integrate harmoniously with the natural and cultural environments.

***Construction Materials***

The construction materials to be used in building the eco-lodge should be environment friendly with minimal effect on the ecosystem and culture. Also considering the climatic condition, they should be able to withstand the natural calamities common to the area. It is suggested that the eco-lodge be built on a brick structure covered by bamboo or rattan to

give a “local” look. Efforts need to be made to reduce use of heavy construction materials like brick & concrete to a minimum.

#### *Things to remember in choosing Construction Materials*

- Construction should be labor intensive and avoid the use of heavy machinery.
- Construction process may combine traditional and modern technologies and materials.
- Use of natural, sustainably harvested material needs to be maximized and will predominate.
- Concrete and steel should be avoided as much as possible.

#### ***Power and Water Arrangements***

Since these eco-lodges will be located at areas close to PAs, there might be cases where electricity might be unavailable or in short supply. The lodge owners, keeping this in mind, should make alternative arrangement for power, especially during night for lighting. Generator for power is the easiest option. However, they can also look into options like solar energy panels for energy storage, hajacs, or biogas lights. This issue is of special importance as it will instill a sense of security among the prospective clients of these eco-lodges.

For water, each facility should have at least one tube well to meet the fresh water requirements. Owners may opt for small overhead tanks for storing water to be used in toilets. Option like storing rain water is secondary consideration for the facilities.

#### *Things to remember for Power and Water Arrangement*

- Where possible the use low energy consumption technologies for lighting (e.g. compact fluorescent lamps, smart light bulbs with time switches) will be encouraged
- Renewable sources of energy should be the goal for all normal energy needs. Diesel generators or similar should be considered as back-ups only.
- Double skinned generator houses, state of the art silencers will be used for generators.
- Consider “solar windows” and/or biogas for water heating.
- Use photovoltaic for lighting.
- Use biogas for refrigeration and cooking.
- Close attention to issues of water, its supply and sustainability, impact on local communities, sensible economies (e.g. baths versus showers), ability to recycle for laundry or gardens.

#### ***Hygiene***

To any traveler, hygiene is a great concern, and the owners/operators of the lodges must emphasize on it. An efficient waste disposal process needs to be in place. There needs to be a regular cleaning inside and outside of lodges. The linen, towels, etc. should also be cleaned on a regular basis.

### ***Type of Cottage***

Considering the current level of tourist movement in the PAs and their travel pattern, it is suggested that the eco-lodges should be of 2-room facility with option to increase to 4-room facility. There should be sufficient ventilation arrangements (i.e. windows, ventilators, etc.) for each room. Veranda is optional but can increase the intrinsic value of the cottage. There should also be an arrangement for dining facility. A shared kitchen and dining area is required for the facility. Each room should have attached toilet facility with hygienic waste disposal arrangements. The rooms can be of moderate size of around 150-200 square feet each.

### ***Accommodation Type***

Each room can accommodate two persons. It is advisable that there are one semi-double bed and one single bed at each room to cater for both individual and family travelers. Additional furniture in the room may be:

- a) two chairs
- b) one tea table
- c) one dressing table
- d) one wooden almirah

A suggestion of materials to be used for furniture is given in Annexure-1

### ***Reception Facility***

Arrangements need to be made for easy contact by the travelers for making reservation and other requirements. A reception area with communication tools like mobile connectivity must be in place. Also, the reception area should be manned to meet the requirements of the lodgers.

### ***Environmental and Cultural Education***

The eco-lodges should have arrangements to provide abundant learning opportunities for guests, including guided visits to surrounding terrestrial and aquatic environments and to local communities. Likewise, have information available to educate travelers on local norms and mores so they don't become an offensive presence in the community. This will increase guests' understanding of the natural and cultural environments and their role in minimizing negative impacts from recreational activities and interaction with local people.

### ***Community Benefits and Relations***

A major objective of establishing eco-cottages in the PAs is to pass on economic benefit to local people. The entrepreneurs for eco-lodges are expected to establish relationships with the neighbors to the lodge. They should also try to generate opportunities for economic support through creating job opportunities in the eco-lodges. There should be different

price structure for local and foreign tourists in order to ensure discounts to local countrymen. Also maximization of use of local food materials should be endeavored.

### ***Cost***

The actual cost of construction is based on the materials used and the facilities that will be made available. In general, a basic eco-lodge facility may cost around Tk. 250,000.00 to Tk. 350,000.00. A general breakdown is given in Annexure-1.

### ***Nishorgo's Support Model***

NSP will provide a business model for the development of the cottage. The supports that will be provided by NSP are given below:

- a) Technical support in regards to business planning and set-up
- b) Extending support to establish linkage with financial institutions for possible financing.
- c) Create marketing channels for reaching prospective client base.
- d) Capacity building in increasing efficiency of running the business
- e) Certain amount of revenue guarantee per month during the project period.

### ***Expected Contribution of the Entrepreneur***

Keeping the intervention that Nishorgo can make towards establishing eco-lodges in the PAs, the entrepreneurs are expected to be able to contribute the following towards setting up their ventures:

- a) Be able to allocate suitable and sufficient land area for setting up the eco-lodges.
- b) Be able to finance a "considerable" portion of establishment cost for the lodges. Though NSP will help in finding a suitable financial institute for extending loans covering a major part of the construction expenses, the entrepreneurs should be able to finance the remaining balance.
- c) Have considerable acumen to run a business. Prior experience in running business is a definite plus.
- d) Be willing to employ locals in the maintenance of the business, thereby, creating employment opportunity for stakeholders directly related to conservation.
- e) Be willing to share a percentage of the revenue with the co-management council for forest conservation.

## **CONCLUSION**

The need for a place for overnight stay is a primary requirement for increasing tourist coverage for any protected area. Considering the importance, it poses immense potentiality to local entrepreneurs in business terms. A nature-friendly, custom-made lodging facility within the vicinity of PAs will increase their attractiveness as well as educate the tourists about the cultural and social perspective of the people living in and around protected areas.

## **Break-Down of Costs Associated with Eco-Lodge Development**

### Fixed Requirements:

1. Land Value : Not incorporated as entrepreneurs are expected to build it on their own land
2. Construction : Tk. 150,000.00-200,000.00 (Estimated. Estimated value will change based on construction type and materials.)
3. Furniture :Tk. 50,000.00-75,000.00 (Estimated. Estimated value will change based on quality and materials.)

### Additional Requirements

1. Solar Energy : Tk. 30,000.00 (6 tubes)
2. Reception Area facilities: Tk. 10,000.00
3. Stationeries : Tk. 10,000.00
4. Generator (5 KVA) : Tk. 75,000.00
5. Running Capital : Tk. 100,000.00 (Estimated)