

**MANAGEMENT PLAN  
OF  
LAWALONG WILDLIFE SANCTUARY  
(2007-08 TO 2016-17)**

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## **ACKNOWLEDGEMENT**

We wish to acknowledge our gratitude to **Sri A.K. Singh**, Principal Chief Conservator of Forest -cum- Chief Wild Life Warden for expressing faith on use & giving us this opportunity to prepare revised Management Plan of Lawalong Wildlife Sanctuary and also for supporting this management plan preparation by giving valuable suggestions.

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I would also like to thank all office staff of Wildlife Division, Hazaribag, who toiled their sweat and helped us from background in compiling data related to preparation of Lawalong Wildlife Sanctuary and its timely submission.

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## PREFACE

The term wildlife by its popular connotation was restricted to the faunal elements and it largely served the outdoor recreational activities such as hunting of animals and birds. The concern for endangered or rare species and for establishing protected areas has developed slowly and in an unplanned manner. This wildlife (protection) Act of 1972 and launching of Project Tiger ushered the era of scientific wildlife management in the country and so a need was felt for evolving wildlife management plan.

This management plan contains principles and prescription designed with objectives to protect restore and consolidate the fast depleting biodiversity within the natural confines of Lawalong Wildlife Sanctuary. The sanctuary has thickly populated 64 villages with cultivation and settlements exerting tremendous biotic pressure rendering the area susceptible to fast degradation. Management plan is the primary need for managing a protected area. Though sporadic efforts were made earlier to prepare Management plan but consolidation of prescription and implementation needed more input. **Mr. Y. K. Das**, Divisional Forest officer, Wildlife Division, Hazaribag & **Mr. Anil Kumar Mishra**, Assistant Conservator of Forests, Wildlife Division, Hazaribag were assigned the job of revision of management plan. They have tried to integrate scientific ecological details along with prescription in the PA specific management plan.

In chapter - V of the plan, objectives as well as problems in achieving the objectives are listed. In the later chapters, strategies to deal with the problems are also discussed. The increasing human pressure has led to destruction of wildlife and also has generated animosity against wild animals and protected areas. This management plan seeks to involve local communities by making them aware of PA objectives including control of fire prevention, overgrazing, poaching and illegal fuelwood collection. The recommendation made in chapter - 8 under eco- development serves twin objectives of reducing biotic pressure on the PA as well as to buffer the impact of wildlife on human, crops and livestock. The chapter no. - 9 is related to research, monitoring and training, the issues needs to be studied have been carefully identified and listed. It incorporates research on floral and faunal diversity in relation to habitat, research on management related issues including anthropogenic ones. Besides, periodic review of flora & fauna, species status, their need and nature of threats are proposed to be studied. A time bound programme for identification of eco-fragile areas across the protected area and corridors as prescribed under the environment (protection) Act, 1986 shall be undertaken. This is a welcome prescription.

Mr. Y. K. Das, Divisional Forest officer, Wildlife Division, Hazaribag & Mr. Anil Kumar Mishra, Assistant Conservator of Forests, Wildlife Division, Hazaribag has put in their intellectual inputs and experience in the field of wildlife in revising this plan for this they deserves appreciation.

**Sri S.K. Sharma,**  
Chief Conservator of Forest,  
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## **FOREWORD**

Our rich heritage of forest and Wildlife have become a vanishing asset, unable to resist the extension of cultivation, over exploitation, pilferage and poaching. The role of forest in maintaining ecological balance environmental stability and sustainable economic development is well known. We have therefore high stakes in making the forest win this crucial battle for its survival as well as our survival.

I personally believe that management plan should seek to involve local communities and make them aware of PA objectives including control of fire, prevention of overgrazing, disease and poaching. This would serve the dual objectives of reducing biotic pressures on the PA. I also believe that management plan should be based on scientific knowledge & adequate field data and should incorporate traditional knowledge and expertise.

I congratulate **Sri Y.K.Das**, Divisional Forest Officer, Wildlife Division, Hazaribag & **Sri Anil Kumar Mishra**, Assistant Conservator of Forests, Wildlife Division, Hazaribag for their joint effort in preparation of scientific, ecological sound and PA specific management plan. They have incorporated recent trends of Wildlife Management and have enlisted and emphasized research on management related problems, research on people related management issues and floral & faunal diversity in relation to habitat in the revised management plan. They have stressed upon restoration and enhancement of water source in all natural streams within PA boundary. They have also stressed upon the guiding principal to minimize the adverse impact on natural processes by human acts like fire, poaching, illicit felling, encroachment, spread of diseases and removal of dead woods etc. Besides the emphasis on unique habitat like den tree, snag, fallen logs, termite mound etc are praise worthy.

The management plan, I positively believe if implemented will be of immense help to forest department, non-government organizations, planners, researchers and others who are concerned with forestry sector. I congratulate them for their intellectual inputs in revising this management plan.

Principal Chief Conservator of Forest

- cum -

Chief Wildlife Warden,  
Jharkhand, Ranchi

# THE EXECUTIVE SUMMARY:

## **Introduction:**

The scientific information base in Wild Life Science is developing slowly. There is no organized system of data collection, storage and retrieval. Management of wild life is essentially multidisciplinary and the success of strategies lies in ensuring multidisciplinary inputs.

This management plan of Lawalong Wild Life Sanctuary has 3-parts.

Part – I deals with the area, resource description and evaluation of its past and current management.

Part – II is the operative portion of the plan dealing with setting objectives, recognizing problems, formulating strategies and planning organizational support and funding for achieving the plan objectives

Part – III comprises of the appendices and maps. It creates a data base for the implementing officer.

**The Introduction of the Area :** This Sanctuary lies in the western part of the Chhotanagpur plateau lying between **latitude 23<sup>0</sup>59' to 24<sup>0</sup>12' North** and **longitude 84<sup>0</sup>33' to 84<sup>0</sup>47' East**. This area falls in the south- west corner of newly created Chatra district and within the territorial limit of Simaria thana.

The total area of the Sanctuary is 21103.34 Hac. The sanctuary area falls between Chako river in the North and Amanat river in the South. It includes 64 PFs.

## **Legal Status :**

Subsequent to zamindari abolition in the year 1952, the ownership of these forests got vested in the state, who declared them as Protected Forests (PF) in 1953. Lawalong Wild Life Sanctuary was constituted vide Bihar Government **Notification no. : S.O. – 1077 dated 07-08-1978** under section 18 (1) of wild life (protection) Act, 1972.

## **Statement of Significance :**

Lawalong Wild Life Sanctuary has wide range of biological diversity. It is located in Deccan Peninsula Biogeographic zone, in the Chhotanagpur Plateau Province (6D). Leopard & deer species are the main species of vital importance.

In addition to the above it is catchment of three rivers-Amanat river, Chako river and Lilajan river. Forests of the Sanctuary protect the rivers, streams against siltation by minimising soil erosion. It intercepts rainfall and increases ground water recharge.

The people living in and around the Lawalong WLS gets their requirements of fuel-wood, fodder, small timber, bamboo, edible mushroom, honey, tendu leaves, medicinal plants, etc. In lieu they protect

and preserve the flora and fauna of the reserve. The forests of the sanctuary acts as resource for recreation and for wilderness experience for the people residing in an around the sanctuary area.

Earlier employment was available to the villagers in forest extraction works. They were engaged in extraction of timber, bamboo and Kendu leaves etc.

It has very wide range of bio-diversity and endangered, rare and threatened species of flora and fauna are found here as appended in annexure.

- ▶▶ 27 Species of mammals
- ▶▶ 93 Species of birds
- ▶▶ More then 100 species of trees
- ▶▶ 37 Species of Srubs & climbers
- ▶▶ 11 Species of Bamboo and Grasses etc.
- ▶▶ More then 100 species of valuable medicinal plants have been recorded from the PA.

#### **Conservation values :**

1. The forest type is Northern Dry Sal Forest (5BC<sub>1</sub>) as per revised classification of forest types by Champion and Seth. Dry bamboo brakes are also found in the north side of river Amanat in some areas. In the sanctuary area many miscellanies species like Asan, Sidha, Pandan, Siris, Kendu, Salai, Dhaura, Jamun, Bijasal, Gamhar, in top canopy, Mahua, Bauhinia species, Bhelwa, Beri, Dudhkoraiya etc. in middle story are found. In under story Phuldhawai, Galphulli etc. are found. The common climbers are Mahulan, Latpalas and Arar.
2. Supports significant population of wild life species specially Leopard, many species of deer, wild boar etc. which are endangered species.
3. Catchments conservation of three rivers - Amanat river, Chako river, Nilajan river and its tributaries. Stable Eco-system with tremendous regeneration, self supporting system.
4. Supports local population.
5. Immense scope for Wildlife Research and education.
6. Excellent habitat for top carnivore –leopard.
7. Potential for Wildlife tourism, Aesthetic value, Nature interpretation and education to tourists.

## **2. Background Information and Attributes :**

Boundaries of Lawalong WLS are contiguous with Latehar-Chatra district boundary (Amanat river) in the southern side and Chatra-Daltanganj district boundary in the western side. In the north Chako river is the boundary of the sanctuary.

Ecological Boundary : The sanctuary area is surrounded by Amanat, Chako & Nilajan rivers by almost three sides. So it forms a separate physical entity. But since the catchment area of three above mentioned rivers spread outside the sanctuary area both in north and south sides, so ecological boundary covers much more area in the north side and south side of the PA.

### **Zone of Influence:**

There are altogether 64 Protect forests inside the sanctuary area. But the zone of influence of the PA is wide spread around the boundaries of the PA. Altogether 86 villages including of Pratappur, Chatra, Simaria, Balumath, Panki and Manatu thanas has been included in the zone of influence.

### **The Forest Type:**

With reference to the "Forest Types of India" by Champion and Seth, the Sanctuary falls under the main classification of Northern Tropical Dry Deciduous Forest having following sub types:

- i) Tropical Dry Deciduous Forest
- ii) Dry Sal Forest
- iii) Boswellia Forest
- iv) Dry Bamboo Breaks.

The forests of the Sanctuary are mostly of miscellaneous nature, where the canopy is moderately close with trees attaining good height and diameter growth.

## **3 History of Management and Present practices :**

Initially all the forests of Lawalong Wild Life Sanctuary were under private control of Raja, Ramgarh and other lords until 1924, when the govt. took over it's charge , In the year 1947, the agreement under section 38 of Indian Forest Act 1927 was done and accordingly all the forests of Ramgarh Estate were declared as Private Protected Forests under Bihar private Forest Act, 1947. With the enforcement of Land Reforms Act, 1950, the ownership of these forests got vested in the state and subsequently they were notified as protected forests under section 29(3) of Indian Forest Act vide Notification No. C/PF-10171 (52-28R) dated : 02.01.1953 of the Govt. of Bihar.

The forests of the Ramgarh estate, whose management had been taken over by the state, were looked after by state forest officers attached to the different divisions till 1943. The Hazaribagh Forest Division

was created on 01.11.1943 for managing the forest in the districts of Hazaribagh and Ranchi vide notification no. 4754-VIF-40-40R dated the 14<sup>th</sup> Oct, 1942. After the enforcement of the Bihar Private Forest Act in 1947, a forest sub-division called the Chatra Forest Sub-Division under the Hazaribagh Forest Division was created vide Revenue department notification no. 2017 BIF-306/49 R dated 11.05.1949. This Sub-Division was converted into a full fledged Chatra Forest Division on 01.06.1952. The Chatra Forest Division was further splitted into two separate divisions namely, Chatra South and Chatra North Division from 01.04.1962.

Since the days of private ownership and until the creation of Lawalong Wild Life Sanctuary, shikaries from other parts of the country used to come here for big games. Considering the importance of wild life and their abundance in this area, the Govt. of Bihar notified Lawalong Wild Life Sanctuary vide its notification No SO 1077 Dated 07 August 1978. Its management was looked after by Chatra South Division until 2002, when a separate Wild Life Division was constituted at Hazaribagh and whole of this sanctuary was brought under its administrative control.

### **Summary of Threats to wildlife in sanctuary area.**

In the present context the main threats for the wildlife of the PA are as follows.

Ever intensifying biotic pressure on the PA due to increasing populations, both human and cattle, in and around the Sanctuary and rampant poverty and unemployment among them result in habitat degradation for the Wildlife. The total number of household within the sanctuary is more than 11-thousand and total population is more than 65- thousand. Such huge population with their livestock within the P.A. is not a good sign for the health of sanctuary. So the villages in core area need to be relocated on degraded forest land outside P.A./ Forest land prone to encroachment or on G.M. land to reduce the dependencies of people on sanctuary.

Shortage of food, cover and water base of wild fauna. The entire sanctuary area including core zone is being heavily grazed by domestic cattle. Right of grazing in sanctuary area has adversely affected the available fodder resource for the wild life. Although there is no right exists in ex-reserve forest of 19 villages yet the incidence of grazing is common feature everywhere. So right need to be settled soon with alternative arrangement for villagers.

**Illicit felling & fuel wood collection:** The illicit felling by villagers residing in core as well as buffer zone for their requirement and for selling the same in the local market at Chatra, Pratappur & Kunda poses a great threat to the sanctuary. The hundreds of head loads are being collected by women residing inside forest or in fringe villages

**Availability of water:** The water becomes an important threat to wild animals immediately after March. The condition remains same up to July. During this period water is localized at few places. Sometimes it leads to death of wild animals due to thirst or makes it vulnerable to poaching.

Such condition has arisen due to siltation of all streams which has reduced their water holding capacity. Almost all old check dams have been either fully silted or damaged.

**Fire:** Since ages the area of the park have been subjected to annual fire which are mostly man made. These fires adversely affect the ground flora and the vegetation of this area. Besides valuable soil moisture; nesting sites of innumerable birds & insects, several palatable species of grasses are lost due to fire. The total incidence of the fire in sanctuary area during last 5 years is being annexed.

**Encroachment:** The location of sanctuary near Chatra, Pratappur & Kunda makes it vulnerable to encroachment. The park particularly on the boundaries are always under threat of encroachment by the people of fringe village. In recent past due to paucity for funds patrolling and lack of staff, the extent of encroachment could not be ascertained.

**Poaching:** This park harbours some of the endangered species like Leopard, Sambhar, Wild boar, bear, cheetah, barking deer, etc. The animal and their product have a very high commercial value. So poaching and man-animal conflict is a real threat to this park.

**Lack of barriers:** Gradually many temporary kutchha roads has developed. Such roads are being used by unauthorized persons for collection & transportation of illicitly felled timber or fuel wood by bullock carts. Lack of unmanned barriers has intensified this problem

Inadequate manpower despite sanctioned strength and lack of proper training for management related issues.

Lack of infrastructures like vehicles, equipments, wireless network, watch towers, fire fighting equipments etc.

Presence of extremist in most parts of the Sanctuary is another important factor, that restricts free movement of staff in the Sanctuary for the fear of kidnapping and killing, leaving those areas unguarded and unmanaged.

**Wild Life Disease :** The occurrence of 64 villages with huge no. of cattle population within sanctuary area and on fringes pose threat of disease like foot & mouth, anthrax, rinderpest, canine distemper rabies etc. An outbreak of epidemic of any of the disease can wipe out the entire population of a species.

#### **4. Plan Objectives and Problems :**

**Objectives of Management:** This plan is prepared for implementation for the period 2005-06 to 2014-15. The objectives of the plan will be in consonance with the provisions in the National Forest Policy 1988 and the National Wild Life Action plan. The objective will be to protect and conserve the Bio-diversity of Lawalong Wildlife Sanctuary. This will be on sustained development basis.

To protect and conserve the ecosystem of the sanctuary by conserving wild and endangered species and their habitats and maintain the bio-diversity through active people's participation.

To reduce the negative impacts of people on bio-diversity of the sanctuary and negative impact of sanctuary on the local population. Active participation of the people for conservation of bio-diversity is envisaged through appropriate and suitable eco-development programmes and to preserve the culture and tradition of local people.

To incorporate PA concerns into regional planning through identification and assessment of existing and proposed activities that might potentially undermine effective Bio-diversity conservation of PA or undermine implementation of the Eco-development strategy in and around the PA.

To develop encouragement for eco-tourism, environmental education and conservation awareness among communities through appropriate interpretation programmes.

To encourage research and ecological studies on wild life biology and ecological aspects.

To reduce dependencies of local population.

To conserve watershed function & improve water regime.

To rehabilitate & restore the degraded forest & dwindling population of wild fauna.

**Problems in achieving objectives :** There are many existing or potential problems in the sanctuary that are capable of thwarting the realization of above objectives, unless suitably addressed or solved.

They are as follows :

Large number of settlements in and around the Sanctuary with a human population of about 1,15,000 and a cattle population of about 60,000 causing tremendous biotic pressure on the forests.

Presence of insurgents in many parts of the Sanctuary is potentially the biggest threat, as it not only hampers the free movement of staff but also incapacitates them in terms of overall job performance.

Inadequate fund and its erratic availability have been a major problem area.

Lack of sufficient number of staff.

Lack of infrastructural facilities like vehicles, equipments, communication facilities etc.

Water scarcity during pinch period.

Invasion of weeds like *Lantana Camera*, *Parthenium sps* etc. which causes hindrance for young regeneration and competing with them.

Man animal conflict due to

Crop raiding by wild animals.

Straying of wild animals in the fringe villages.

Killing and causing injury to human and damage to their properties.

Untrained staff to manage wildlife : Most of the staff posted in the Sanctuary area are untrained in wild life management. They don't have orientation towards wildlife. In some fields of activity it results in improper or inefficient implementation of management practices.

Due to increase of human population and lack of awareness among local people destruction of wildlife is noticed.

Lack of research and training facilities.

Presence of people in enclave villages in the sanctuary : There are dozens of villages enclave in the sanctuary area. They all depend on the forest for firewood, small timber and fodder for their cattle. People have rights to graze the cattle, collect fuel wood and small timber from the PFs included in the sanctuary.

Law and order problems : The law and order in the sanctuary area and that in nearby areas has worsen in recent past. This situation put hurdle before the free movement of staff in the sanctuary area.

Lack of inter-departmental co-ordination.

## 5. The Strategies :

**Zonation:** From the management point of view, the Sanctuary areas have been classified into following zones :

Sl. No.	Name of Zone	Area in km. <sup>2</sup>	Remarks
1	Core Zone	80.2779	From Chatra South Division.
2	Buffer Zone or Multiple Use Zone	130.7351	From Chatra South Division.
3	Tourism Zone (Overlapping with Buffer Zone)	29.31	From Chatra South Division.

## **Zone Plan :**

**Core Zone :** This zone should be kept as sanctum sanctorum. It should be preserved as natural as possible. In general nature should be allowed to take its own course in this zone. Only to support the important target species of conservation importance the following strategies are prescribed.

A system of close monitoring is to be developed. The system should be simple and maintenance of records of animals and vegetation should be carried out by field staff. The compiled data/information should be sent to the Conservator's office every month.

The important points to be monitored are listed below:

- (i) Movement of Leopard & elephant (during migration).
- (ii) Animal sightings during the patrolling. (A register may be maintained at the level of each F.G. and at each anti-poaching camp)
- (iii) Special attention needs to be given to riparian zones in respect of floral-composition and animal use pattern.
- (iv) Accidental fire incidents and area involved in this should also be monitored and enlisted regularly.
- (v) Siltation at all important check dams is to be monitored by erecting graduated reference posts (metal posts) at suitable places in the dams.
- (vi) Sub-beat wise regeneration status of sal should be monitored.
- (vii) In many areas sal dominated forests are being replaced by some other species dominated forests. The root cause and such patches are to be closely monitored. The animal use patterns in these areas need to be closely monitored.

a. In the core zone firelines should be maintained properly every year. Depending upon the overall condition of the habitat, the width of the firelines inside the core zone should be maintained at 10 metres to 15 metres.

b. Cool burning of small patches of grasslands should be taken up during January to March.

c. All internal boundaries inside core zone should be maintained properly.

- d. At places, where it is essential, some habitat improvement works such as removal of unpalatable species of grass or climber or shrub, desilting of inlets and outlets of nalas etc. should be carried out, but these activities need to be taken up with minimum intervention.

The impact due to human activities inside the core zone needs to be reduced to lowest level.

As core zone is the most protected part of the Sanctuary, least of human interference will be allowed therein. However, major constraint in fulfilling this objective is the biotic pressure exerted by the inhabitants of 15 villages situated in the core zone and other adjoining villages.

In the best interest of the sanctuary, these villages should have been shifted out of the core zone. But it does not seem to be practical approach when we consider the socio-economic and political scenario in and around the Sanctuary area.

**Proposed activities to be allowed in the core zone :**

- (i) Creation and maintenance of roads & watch towers.
- (ii) Creation and clearing of fire lines.
- (iii) Creation and maintenance of salt licks
- (iv) Creation and maintenance of water sources.
- (v) Development and maintenance of grass lands.
- (vi) Eradication of weeds like Lantana, Parthenium etc.
- (vii) Fire protection measures.
- (viii) Official research and monitoring activities.
- (ix) Eco-development schemes to be launched in the villages to reduce their dependence on the forests.
- (x) Patrolling for protection including monsoon patrolling.
- (xi) Demarcation and regular clearing of boundaries.
- (xii) Demarcation by pucca boundary pillar
- (xiii) Erection of Boards & Signage's

- (xiv) Movement of antipoaching squad.
- (xv) Reallocation of villages in phases from core zone.

**Activities to be disallowed in the core zone :**

- (i) Grazing
- (ii) No vehicle will be allowed to enter this zone except for official purpose.
- (iii) Other forms of disturbances.

**Buffer Zone :**

Altogether 49 Protected Forests covering 130.74 sq. km. of area in Simaria Thana have been included in this zone.

This zone should be considered as multiple use zone. Basically this zone is meant for mitigating the demand of small timber, firewood, fodder etc. by local community and to act as a shock absorber for the biotic pressure to the P.A.

Since the buffer zone surrounds the core zone of the PA., eco-development activities have to be taken up extensively. Resource management should be done according to the microplans prepared for the villages concerned. The detailed prescriptions can be seen in CHAPTER – VIII.

In heavily degraded part of the Buffer Zone some gap filling by plantation of local species can be done.

Guidelines for management of Buffer Zone/Multiple Use Area of Tiger Reserve made available vide *No.-5-12/2004-PT, Govt. of India, Ministry of Environment and Forests (Project Tiger) Dated 10.11.2004* can be seen on Annexure-15 It gives an over view about the importance of Buffer Area and its management.

**Tourism zone:** The proposed tourism zone can be seen in zonation map (map no.-2). It includes 29.31 km<sup>2</sup> area of 15 Protected forests of buffer zone covering about 10 km. length of river Amanat in the South East side of the PA.

Although presently there is no influx of tourist in the PA., but taking into consideration the betterment in law & order situation in future, this zone has been created. Village Lawalong will be the center for tourism activities. For details please see CHAPTER-VII.

**The Buffer Zone(Multiple Use Zone) and Tourism Zone** consist of the major outer part of the sanctuary, which also suffers from heavy biotic pressure on account of villages situated within this area and the villages situated in the zone of influence.

**Proposed activities to be allowed in this zone :**

- (i) Creation and maintenance of roads & watch towers.
- (ii) Creation and clearing of fire lines.
- (iii) Creation and maintenance of salt licks
- (iv) Creation and maintenance of water sources.
- (v) Development and maintenance of grass lands.
- (vi) Eradication of weeds like Lantana, Parthenium etc.
- (vii) Fire protection measures.
- (viii) Official research and monitoring activities.
- (ix) Eco-development schemes to be launched in the villages to reduce their dependence on the forests.
- (x) Patrolling for protection including monsoon patrolling.
- (xi) Plantation and tending of suitable trees in forest blanks.
- (xii) Soil and water conservation
- (xiii) Creation and maintenance of check nakas, administrative offices, staff quarters, rest houses etc.
- (xiv) Restricted/regulated tourist movement in Tourist Zone.
- (xv) Creation and maintenance of tourism complex in Tourism Zone.
- (xvi) Demarcation by pucca boundary pillar
- (xvii) Erection of Boards & Signage's
- (xviii) Movement of antipoaching squad.

### **Activities to be disallowed in the Buffer Zone and Tourism Zone :**

- (i) Free grazing
- (ii) Timber harvesting
- (iii) Serious disturbances caused by villagers and tourists.

### **Plan for the outer zone of influence or Eco-fragile zone:**

This extends upto 10 km. from the outer boundary of sanctuary on all sides. Villages falling within this zone too exert biotic pressure on the sanctuary. proper eco-development schemes, therefore, will be launched in these villages as well to reduce their dependence on the sanctuary forests. For the purpose of controlling the unregulated mining, Industries, Hotels road etc the proposal of Eco-fragile zone is being prepared.

**Theme plans :** Strategies discussed under this section shall be common to more than one/all zones. It is related to the following :

- a) Management of grassland.
- b) Management of waterbodies.
- c) Management of Woodlands
- d) Removal of unpalatable species
- e) Control of poaching & illicit felling
- f) Control of encroachments
- g) Control of fires
- h) Control of grazing
- i) Human animal conflict
- j) Health of wild animals

### **6. Tourism interpretation and Conservation Education :**

The present infrastructure and facilities for tourist and over all state of tourism in Lawalong WLS is not very good. But the park has potentiality to be developed as a very good centre for nature tourism.

Following are the values of Lawalong WLS for Tourism.

1. Wilderness experience.
2. Sightings of Leopard.
3. Long stretch of Riparian forests available.
4. Bird Watching : 93 species of birds reported.
5. Cultural Value/Historical Value.
  - a) Ruins of Kunda fort.
  - b) Shiv temple at Kunda

## **Objectives**

Among the objectives of this management plan in CHAPTER-V one of the objective is *"To develop encouragement for eco-tourism, environmental education and conservation awareness among communities through appropriate interpretation programmes. "*

To achieve the overall objectives set for this management plan, the following specific objectives have been set after considering the SWOT analysis and values of the PA for tourism :

1. To promote Eco-tourism in the PA. involving local people.
2. To promote conservation awareness among the local people and the visitors through conservation education and interpretation.
3. To regulate nature tourism in such a way that it can make the visit of tourists enjoyable and educative, compatible to conservation goal.
4. Consistent with the PA objectives, to preserve the culture of local communities and to improve their economic condition.

## **7. Eco-development :**

Among the objectives of this management plan (Chapter-V, Para-5.1.2) one objective is "To reduce the negative impacts of people on bio-diversity of the sanctuary and negative impact of sanctuary on the local population. Active participation of the people for conservation of bio-diversity is envisaged through appropriate and suitable eco-development programmes and to preserve the culture and tradition of local people." For this purpose provision of 5 lakh / villages has been made in chapter no. XI - Budget.

### **Roblems of the PA. :**

- (i) **Fuel Wood Collection** :- The local villagers take fuelwood from the sanctuary area. Fuelwood is taken out by ladies in headloads, sometimes it is taken out by bullock carts also.

Mostly these fuelwood are used by the villagers but sometimes a part of it is sold in the market to earn money.

**(ii) Livestock Grazing :-** Cattle population in and around the sanctuary has been estimated to the tune of 40,000 considering average fodder requirement for one cattle as 5 MT per annum, the fodder requirement for there cattle is 2,00,000 MT/Annum.

**(iii) Poaching & Fishing :-** Poaching is a problem in the sanctuary area. Local villagers sometimes kill wild animals for meat. They also pose threat to the aquatic eco-systems by fishing in the rivers and nalas with traditional methods.

**(iv) Collection of NTFP :-** NTFP like kendu leaves sal patta, mushrooms, grasses etc. are collected by the villages from sanctuary areas

**(v) Small Timber requirment :-** Wooden pillars, poles etc. are required to repair the kuccha houses of the villagers. The villagers take out these small timbers from the buffer zone of the sanctuary and from the core zone as well.

**(vi) Fire :-** Fire is a problem of Lawalong WLS and in most of the time it is considered to be as man-made. For getting new flushes in grass or to collect NTFP like mahua etc. local people set fire in the forest. Sometimes it is due to carelessness-like throwing Bidi or Cigarettes in the forests.

**(vii) Law & order problem due to naxal activities.**

#### **Problems of the people :-**

Many villages inside the sanctuary including Bandu, Lawalong, Suhawan, Sulma Harnahi, Paramatu, Lutu, Chani, Banwar, Hutru, Madandih, Bhusar etc. were interacted with. On the basis of interactions the following problems of the people were identified. (i)Crop depredation, (ii) Cattle lifting, (iii) Problems related to restrictions on collection of small timbers and fuelwood from forests. (iv) Other problems like disease in cattle etc.

**Objectives :-**Considering the above mentioned problems of the PA and people and also keeping in mind the objective of this Management plan, the following objectives have been set for eco-development :-

(i) Human settlements in and around the sanctuary put greater pressure than the sustaining capacity of the PA. Therefore the objective of eco-development programmes is to reducing the dependency of forest side communities on the natural resources of the protected area.

(ii) Conservation of natural resources of the sanctuary is the overall target of eco-development project. The strategy of eco-development aims to conserve biodiversity by mitigating negative impacts of local people on the sanctuary area and of the sanctuary on local people.

(iii) To reduce negative impacts of local community on biodiversity, reduce negative impacts of PA on local people and increase collaboration of local people in conservation.

(iii) To develop more effective and extensive support for eco-development.

**In addition to the above mentioned general objectives of Eco-development the site specific main objectives of Eco-development can be enumerated as mentioned below :**

(i) To promote people participation in conservation, management and protection.

(ii) To improve capability of EDC by providing suitable training and organizing study tours etc.

(iii) To provide support & assistance of expert services by contracted NGOs and NGOs.

(iv) To prepare microplans of 64 villages situated in and other villages around of the PA by ensuring people participation.

(v) To evolve, with the participation of local people, workable mechanism to mitigate mutual negative impacts (i.e. impact of people on PA and of PA on people), and to incorporate these mechanism in the microplans.

(vi) To find out and implement sustainable models of economic activities for the poor people to minimize their dependence on P.A.

(vii) To minimize man-animal conflict by constructing suitable barrier like EPT and electric fencing and also by paying compensation in time.

(viii) To ascertain suitable mechanism of updating or making changes in Microplan in accordance with findings of monitoring and research.

**8. Research, monitoring, evaluation and training:** There are many 'unknowns' related to natural & social aspects of P.A. management. These points need to be investigated and the facts should be known to the manager for better management. The details of proposed research work is enlisted in chapter - IX.

So far as research work is concerned, no effort has been made in Lawalong Wildlife Sanctuary.

**Objectives :**

- (i) To reduce the extent and degree of uncertainty on which management decisions and strategies are based.
- (ii) This should also help in achieving better understanding of ecosystem of Lawalong WLS, impact of man-made pressures on natural systems and functional relationship among biotic communities.

**Evaluation:**

Evaluation of the ultimate effectiveness of the eco-development plan will be undertaken by the DFO concerned annually on two criteria, the parameters of which are detailed as under:

**(a) Effect on village:**

- (i) Increase in the irrigated area for cultivation.
- (ii) Increase in ground water level
- (iii) Increase in agricultural production and pasture cultivation.
- (iv) Increase in horticultural production.
- (v) Decrease in the need for firewood and small timber
- (vi) Improvement in the number of people involved in secondary profession other than agriculture and forestry based occupancies.
- (vii) Improvement in the general standard of living of the villagers.
- (viii) Increase in use of smokeless Chullah.

**(b) Effect on forest:**

- (i) Reduction in no. Of head loads of fuel wood coming out of forest.
- (ii) Reduction in the offences in the forest.
- (iii) Improvement in the condition of forest vegetation.
- (iv) Increase in water availability in the sanctuary.
- (v) Increase in Wild Life population and their diversity.

**9. Organisation and Administration :**

**Structure and Responsibilities :** Presently position of posting of staff in Lawalong Wildlife Sanctuary is very bad. More than 200 km.<sup>2</sup> area of the sanctuary is being managed with the help of One Range Officer, One Forester and two Forest Guards only. The sanctioned posts, position of posting against those posts and number of vacancy can be seen in the following table :-

Sl. No.	Name of Post	No. of sanctioned Posts	No. of Staff posted	Vacancy
1	ROF	01	01	00
2	Forester	02	01	01
3	Forest Guard	12	02	10

Since the Sanctuary area is highly infested by the extremist elements, movement of the staff is also restricted. But this situation is certainly not satisfactory and good for the health of the PA. Therefore taking into consideration the ground realities, following staffing pattern and organization is proposed :

### Proposed administrative setup

