



## ECO-TOURISM POTENTIAL AND DEVELOPMENT WITHIN LAKE NAKURU NATIONAL PARK AND ITS CATCHMENT



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## **LIST OF ABBREVIATIONS**

CBS:	Central Bureau of Statistics
DC:	District Commissioner
EAWS:	East Africa Wildlife Society
EIA:	Environmental Impact Assessment
IUCN:	World Conservation Union (Switzerland)
KWS:	Kenya Wildlife Services (Nairobi, Kenya)
NGO:	Non-governmental Organization
WWF:	World Wildlife Fund

## EXECUTIVE SUMMARY

This report summarises the eco-tourism potentials within Lake Nakuru National Park and its catchment to promote environmental conservation and socio-economic development that involves community participation for poverty alleviation. The area is of immense importance both nationally and internationally with tremendous potential for eco-tourism development. Currently, the Park receives about 200,000 visitors per year, most of whom on average stay only for two nights. In the recent past minimal efforts have been made to promote eco-tourism and there is a need to develop “alternative tourism”. This report : -

1. Assess eco-tourism potentials and products in Lake Nakuru National Park and its catchment through identification of natural and cultural eco-tourism sites/localities, and their specific products including the types, numbers and spatial distribution of the products and other tourist facilities, description of current management regimes of the sites and the products, and assessment of the existing infrastructure within Lake Nakuru National Park and its catchment;
2. Identifies the stakeholders involved or to be involved in eco-tourism development, highlighting their roles and responsibilities, and areas of partnership, and of conflicts, in eco-tourism development for environmental protection, sustainable socio-economic development, community participation and poverty alleviation;
3. Assess some of the major problems/constraints in management and promotion of eco-tourism in the Lake Nakuru National Park and its catchment and suggest how to overcome the constraints;
4. Develops eco-tourism development plan for the region taking into account its carrying capacity, the vision of eco-tourism development in Kenya as stated by the Kenya Tourism Board (KTB) and the tourism development strategies as outlined in the JICA Kenya National Tourism Master Plan, and within the frameworks of KWS Lake Nakuru Ecosystem Integrated Management Plan and MCN Nakuru Strategic Structure Plan (NSSP). The business plan outlines (i) measures for education, awareness and training of key stakeholders on eco-tourism development, (ii) mechanism for diversification of the tourism products and activities, taking cognisance of the existing players, (iii) proposed infrastructure development needs for eco-tourism in the region, (iv) information packages to promote eco-tourism, (v) suggested strategies for the various tourism products through information centres, E-marketing and community based guided tours, etc, all in an integrated manner.

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# Section One

## INTRODUCTION

### 1.1 Background of the Project

The Lake Nakuru National Park and its catchment in this report is defined as the area including Lake Nakuru National Park and the surrounding areas, and has been variously referred to as “region”, “ecosystem”, or “area” in this report that focuses on the assessment of the eco-tourism potential and development plan in the ecosystem. For the area to realise full ecotourism benefits, a business plan on eco-tourism promotion is inevitable. The ecosystem covers LNNP 188 km<sup>2</sup> and its catchment of approximately 1,800 km<sup>2</sup>, an area rich in culture and important for biodiversity conservation, located in Nakuru District, Rift Valley Province (Map 1.1); and comprising is a gazetted wildlife protected area, gazetted Government forests (Mau, Eburru, Dondori and private and public land.

The area is of immense importance both nationally and internationally with tremendous potential for eco-tourism development. Currently, the Park receives about 200,000 visitors per year; most of who on average stay overnight, (KWS 2002). Much of this is mass tourism with the potential to cause serious negative impacts on the park. Minimal efforts have previously been made to promote eco-tourism in order to reduce these impacts. Secondly, while LNNP is the second National Park in the country in terms of revenue generation, little goes directly to local communities, and other stakeholders. In addition to above, the park and its catchment is also threatened by various disastrous land use types and developments. There is therefore, a need to develop eco-tourism potential for sustainable conservation and socio-economic development of the area. This eco-tourism report implements part of framework of the Lake Nakuru Integrated Management Plan and the Nakuru Strategic Structure Plan developed under agenda 21. The project aims at nurturing and consolidating ecotourism and socio-economic development in the Lake Nakuru Region with expected outcomes being: -

#### **Box 1 Expected Outcomes of Lake Nakuru and Catchment Ecotourism Project**

- Increased tourism revenue for the local community and KWS through diversification of the tourism base;
- Reduced pressure on natural resources as a result of anthropogenic pressures associated with mass tourism;
- Increased community participation and involvement in tourism and conservation;
- Promotion of nature business plans that support development of tourism infrastructure and markets; and
- Improved management and conservation of bird-life and other natural resources.

Eco-tourism has been defined as 'environmentally friendly' tourism, and classified by the International Eco-tourism Society (1991) as: "responsible travel to natural areas that conserves the environment and sustains the well-being of local people". In addition, the World Conservation Union (1996) defined it as "visitation to relatively undisturbed natural

areas, has low negative visitor impact and provides for beneficially active socio-economic involvement of local populations". This report evaluates Eco-tourism in relation to natural environment and contribution to sustainable community socio-economic development through active involvement.

## **1.2 Principal Issues in Lake Nakuru and its Catchment**

Currently Lake Nakuru National Park receives an average of 200,000 visitors per year, which is mainly mass tourism that has more negative impacts on the ecosystem. In the past little effort has been made to develop Eco-tourism to reduce impacts associated with this tourism. The area has high tourism potential, though minimal initiatives on tourism diversification, marketing and community involvement have been made. For example, within the park, tourism is somewhat overcrowded, yet many sites and products have not been developed. There is also limited interaction between the park activities and local communities in the parks' catchment. Most of the tourists to LNNP stay for a brief period, two days on average, however there is evidence that many tourists (including international and domestics) visiting the park could stay longer if more activities were developed. This can be achieved through tourism diversification and participation of stakeholders in tourism development. The overall weakness has been lack of a framework that integrates and guides tourism development initiatives to achieve the overall targets. Eco-tourism therefore stands to be an alternative strategy that could go a long way in addressing these issues and converting the untapped potential into realistic economic gains.

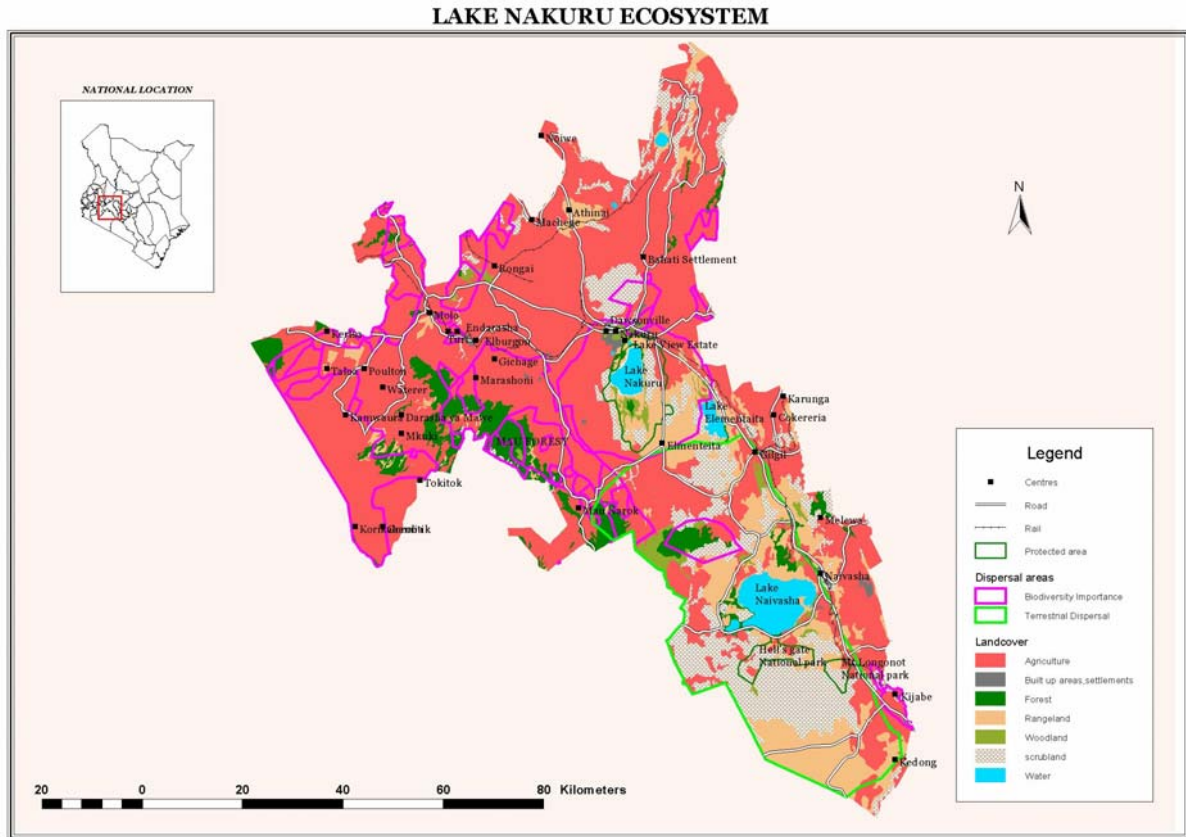
## **1.3 The Project Objectives**

The general objective is to nurture, extend and consolidate Eco-tourism development in Lake Nakuru National Park and its catchment basin within the frameworks of the KWS's Lake Nakuru Ecosystem Integrated Management Plan and the NSSP. The goal is to develop a model eco-tourism project for sustainable environmental conservation and socio-economic development. There are four specific objectives of the project: -

1. To assess eco-tourism potentials and products in Lake Nakuru National Park and its catchment through the: (a) identification of natural and cultural eco-tourism sites/localities, and their specific products including the types, numbers and spatial distribution of the products and other tourist facilities, (b) description of current management regimes of the sites and the products, and (c) assessment of the existing infrastructure within Lake Nakuru National Park and its catchment;
2. To identify the stakeholders involved (or to be involved) in eco-tourism development, highlighting their roles and responsibilities, and areas of partnership, and of conflicts, in eco-tourism development for environmental protection, sustainable socio-economic development, community participation and poverty alleviation;
3. To assess some of the major problems/constraints in management and promotion of eco-tourism in the Lake Nakuru National Park and its catchment and suggest how to overcome the constraints;



**Fig. 1.1.**  
**Lake Nakuru National Park and Its Catchment – Location and**  
**Positions of the Eco-tourism Management and Development Zones**



4. To develop eco-tourism development plan for Lake Nakuru National Park and its Catchment taking into account its carrying capacity, the vision of eco-tourism development in Kenya as stated by the Kenya Tourism Board (KTB) and the tourism development strategies as outlined in the JICA Kenya National Tourism Master Plan, and within the of KWS Lake Nakuru Ecosystem Integrated Management Plan and Nakuru Strategic Structure Plan (NSSP) frameworks. The plan should outline (a) measures for education, awareness and training of key stakeholders on eco-tourism development, (b) mechanism for diversification of the tourism products and activities, taking cognisance of the existing players, (c) proposed infrastructure development needs for eco-tourism in the region, (d) information packages to promote eco-tourism, (e) suggested strategies for the various tourism products through information centres, E-marketing and community based guided tours, all in an integrated manner.

#### **1.4 Scope and Methodology**

The study covered the whole of LNNP and its Catchment area that includes Nakuru Town, Menengai Crater, Bahati/Dondori – Lake Solai, Soy Sambu/Eburu – Lake Elmenteita, and Mau Forest – Rongai zones. The study involved collection of field data and review of the existing secondary information on the study area, with secondary data being acquired from various government and non-government sources and primary data through field inventory and observation, and informal interviews and in-depth discussions with various stakeholders of the region. The stakeholders included KWS Lake Nakuru National Park staff, Provincial administration, Municipal and County Council officials, lodge owners and/or operators, members of NGOs, CBOs and local residents of the region. Attempts were also made to informally interview a few tourists. Further, a wide range of research work undertaken in the area was reviewed that provided data on wildlife (including birdlife, especially the flamingos), human and livestock populations and other basic information.

## Section TWO

### Background Information

#### 2.1 Topography, Geology and Habitat

The main topographic features in the area are the Mau Escarpment, Bahati Escarpment, the Rift valley floor, Menengai crater and lake Nakuru and its drainage system, Lake Elementeita and the Eburu Hills. The geology of the catchment is underlain by features and activities associated with the Rift Valley formation characterised by, volcanic eruptions, faulting, subsidence and uplift. The rocks are grouped into lava flows and pyroclastics. Soils in the catchment are highly porous and are susceptible to erosion.

The vegetation comprises of grasslands and scrublands at the lower parts of the basin with Yellow acacia along the lakeshore and flood plains, riverine vegetation along the river courses. The forests are in areas where rainfall is high and most of the rivers originate from these areas. There are minor streams from the Bahati escarpment, which drain into Lake Solai. Three major rivers flow into Lake Nakuru namely, Njoro, Makalia, Nderit, The Baharini springs, believed to be the re-emergence of Ngosur river is a permanent recharge into Lake Nakuru. In the larger ecotourism area, Kariandusi and Mbaruk rivers drain into Lake Elementeita arising from the Ndundori. Some warm springs to the south in Lake Elementeita supplement the flow from the rivers

#### 2.2 The Human Environment

##### 2.2.1 Demographic and socio-economic profiles

Archaeological evidence suggests that from about 10,000 to 30,000 years ago, a hunter-gatherer people known as "Eburran" occupied the lakeshore. Subsequently, Neolithic people occupied the area and later gave way to the Maasai people who still occupy some parts of the basin. Human population grew from less than 50,000 people in the early 1960s to almost 1,000,000 in the late 1990s (GoK, 1998). In 1969, the population was 47,151, increasing to 92,851 in 1979 and 163,982 in 1989. Today, Nakuru Town is the fourth largest town in Kenya with a 1999 population of 239,000 (Foeken and Owuor, 2000). Between 1967 and the present day, the human population of the catchment has steadily increased to about a million people. About 60% of the populace reside in the rural parts of the catchment and the rest in market centres, small towns and the Municipality of Nakuru. The annual population growth rate of Nakuru District is estimated to be 4.85%.

Apart from tourism and wildlife, the district also contributes to the national economy through agriculture, livestock, forestry, fisheries, mining, industry, commerce, research and conservation activities (GOK 2002). All these activities are heavily dependent on environmental management for their long-term sustainability. In order to protect the Lake, development and human activity as well as the land and water resources within the catchment must be managed in a way that ensures sustainability and minimises adverse impacts on the Lake. Ecotourism where local residents are involved in and gain economic returns from conservation efforts offers crucial link in environmental management.

##### 2.2.2 Land use Pattern, Ethnic Mix and Institution Structures

Reports indicate that there was no human settlement in Lake Nakuru and its catchment basin prior to 1889, although the area has been an important center for human populations for tens of thousands of years, and many prehistoric sites are located in the vicinity (Horrobin, 1971 cited in Mwangi, 1994). Written records by European travellers visiting the area at the turn of the century provide descriptions of uninhabited landscapes

teeming with wildlife (Elliot, 1905; Chapman, 1908; Percival, 1928). Local oral traditions record occupation of the area by shifting cultivators and pastoral groups, who used the valley floors, grasslands and forest glades for cultivation and wet season grazing practices that continue to this day in some parts of the catchment basin. The region today comprises of communities from different ethnic group, who have co-existed peacefully for over 30 years, and a large proportion living in slum areas of Nakuru Town.

There are several land use types in the catchment, ranging from urban settlement, small and large-scale cultivation, pastoralism, ranching, and conservation. Land ownership is varied, with about one-third of the catchment being owned by the Government mainly in form of forests reserves and National Park. There are also large-scale farms for large scale ranching or commercial farming (growing wheat or maize, and flowers and/or livestock rearing). The rest the area is under individual ownership (small-scale farmers).

Landuse in the area is predominantly small-scale agriculture and livestock husbandry. Agriculture is the predominant land cover in the region where it constitutes some 85% of the landuse in the reservoir catchments. The major crops include maize (*Zea mays*), wheat (*Triticum aestivum*), barley (*Hordeum vulgare*), potatoes (*Solanum tuberosum*), onions (*Allium cepa.*), beans (*Beta vulgaris*), cabbages (*Brassica oleracea*) and peas (*Pisum sativum*) that require huge amounts of agro-chemicals. This can exacerbate pollution and eutrophication in water bodies. Both free ranging and paddock livestock are reared. Watershed landuse is increasingly causing a wide range of other environmental problems such as deforestation, soil erosion and siltation.

### 2.2.3 Anthropogenic Impacts on Natural Resources

Studies carried out at Lake Nakuru in 1982 refer to Rivers Njoro, Makalia and Enderit as permanent streams, which now show flashy, sporadic flow and during periods of high flow are heavily laden with silt. During this period, the area of the catchment under forest and natural vegetative cover declined from 47% to 26%. Small-scale subsistence farming increased from insignificant levels in 1970 to over 35% of the catchment area in 1986.

The type of farming practiced by the new settlers depleted resources available for restoring or improving soil fertility or curtailing erosion. The allocation of land for farming on steep slopes, often exceeding the 55% gradient stipulated by the Agricultural Act, further exacerbated the erosion problem. This in combination with other factors led to a progressive decline in environmental quality and crop yields over the ensuing years. The aggravating factors include: insecure land tenure, inaccessibility of extension services and technological options, low farm prices and disposable income, recurrent droughts, crop pests and in some cases, wildlife depredation (LNCDP, 1990). Large-scale farms (>100 acres), with trained managers and greater access to capital, were able to modernize their operations in the post-independence era, and emerged as the most productive farms in the country. However, these gains were achieved and maintained through heavy investments in agricultural machinery and agro-chemicals. In 1989, the remaining natural forests in the catchment were gazetted and brought under the management of the Forest Department. In 1994, the government in a highly controversial move de-gazetted over 20,000 ha of the Eastern Mau Forest on the western divide of the catchment basin, a major national watershed, and the source of feeder streams to Lake Nakuru. The decision was reportedly taken to settle the "landless" members of the Okiek tribe, a group of forest dwellers who had been marginalised and excluded from the mainstream of national development since 1946. A number of individuals took advantage of this situation to secure parcels of land and between 1994 to the present over 30,000

hectares of natural and plantation forest are estimated to have been clear felled and the land put under the plough. An influx of an estimated 30,000 people migrated into the catchment. Despite a ban on felling imposed by the government in early 1998, illegal felling continues in the Mau and Dondori forests. There is a need for serious law enforcement to safeguard the catchment.

## Section Three

# Ecotourism zones and products of the Region

### 3.1 Introduction

This region has unique resource-base (environmental profiles) upon which eco-tourism can be developed. The physical characteristics and wildlife resources with a special emphasis on bird-life, the rich culture and scenic beauty can all contribute to eco-tourism development of the area.

### 3.2 Biodiversity of the region

#### 3.2.1 Biodiversity status of the forests

The forests of the catchment basin consist of the Eastern Mau, the Eburru and the Dondori forests. The Eburru forest, composed of indigenous tree species covers an area of 8,736 hectares while the Dondori forest covers an area of 6,956 hectares. The Eastern Mau forest forms part of a national watershed (the Mau Complex) and is the largest of these forest blocks covering an area of 65,000 hectares. It is composed mainly of plantation and indigenous forests that over the last 10 years have been progressively excised to pave way for human settlement, and what remains of this forest is a small portion restricted to the crest of the escarpment. It consists of thickets of bamboo interspersed with stands of *Olea capensis*, *Prunus Africana*, *Albizia gummifera* and *Podocarpus latifolius*.

The Mau forest contains a rich bird fauna and has been accorded Important Birds Area (IBA) status. Forty-nine of Kenya's 67 Afrotropical Highland bird species are known to occur in the Mau Forest Complex. Among them are the grey throated barbet *Gymnobucco bonapartei*, Luhders bush shrike *Laniarius leuhderi*, equatorial akalat *Sheppardia aequatorialis*, the red chested owlet *Glaucidium tephronotum*, banded prinia *Prinia bairdii* and black faced rufous warbler *Bathmocercus cerviniventris* are notable. Of these, 11 are in the globally threatened (CITES I&II) category and include the Verreaux Eagle *Aquila verreauxii*, Amani Sunbird *Anthreptes pallidigaster* and Taita Thrush *Turdus helleri*. Others include regional endemics such as Hartlaub's Turacco *Turaco hartlaubi*, the restricted range Hunter's Cisticola *Cisticola hunteri* and Jackson's Francolin *Francolinus jacksoni*. There is little information available on the fauna of the other forests.

#### 3.2.2 Biodiversity status of LNNP

The park contains a variety of habitats that include an alkaline lake which is home to millions of flamingos often referred to as "the greatest ornithological spectacle on earth", the largest Euphorbia forest stand in East Africa, a wildlife rich savannah and dry upland forests. Lake Nakuru National Park has over 400 bird species. Of these there are important waterbird species that include; Greater Flamingo (*Phoenicopterus ruber roseus*), Lesser Flamingo (*Phoenicopterus minor*) Glossy Ibis (*Plegadis falcinellus*), African Spoonbill (*Platalea alba*), Afro-tropical Ducks and Geese such as White-Faced Whistling Duck (*Dendrocygna viduata*) and Fulvous Whistling Duck (*Dendrocygna bicolor*), Cape Teal (*Anas capensis*), Hammer kop (*Scopus umbretta*) Open Billed Stork (*Anastomus lamelligerus*), Palaeartic Northern Shoveler (*Anas clypeata*) and Northern Pintail (*Anas acuta*), Common Sandpiper (*Tringa hypoleucos*), Ruff (*Philomachus pugnax*), Black Winged Stilt (*Himantopus himantopus*), Avocet (*Recurvirostra avosetta*), Red Necked Phalarope (*Phalaropus lobatus*, Eurasian Marsh Harrier (*Circus*

*aeruginosus*), African Marsh Harrier (*Circus ranivorus*), African Fish Eagle (*Haliaeetus vocifer*), Osprey (*Pandion haliaetus*), Grey Crowned Crane (*Balearica regulorum*). See appendix 1 for a comprehensive list of waterfowls that are of immense attraction to both local and international tourists.

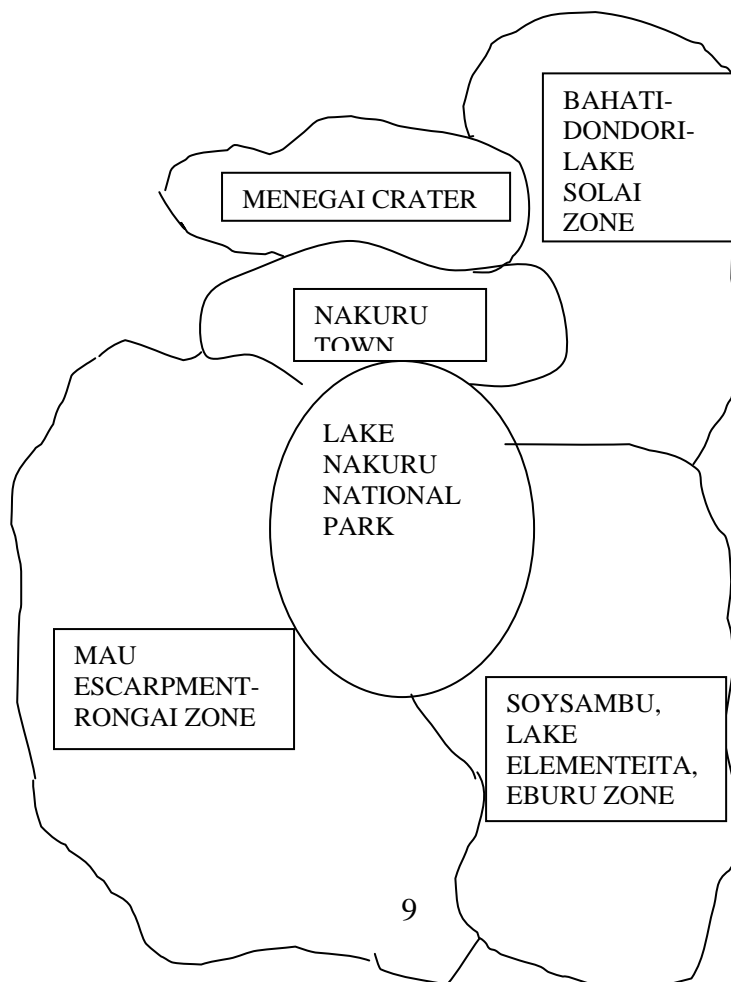
### 3.3 The Eco-tourism Zones of the region

Lake Nakuru and its catchment area is a closed basin located in Nakuru District on the floor of the Great Rift Valley, about 160 kilometers west of Nairobi. It is situated in the spectacular and picturesque Gregorian portion of the Eastern Rift Valley on latitude 0°7' – 0° 44' S longitude 35°7' – 36°51' E (See Fig. 1.1). Nakuru District is one of the seventeen districts of the Rift Valley Province, bordering eight other districts; Kericho, and Bomet to the west, Koibatek and Laikipia to the north, Nyandarua to the East, Narok to the southwest and Kajiado and Kiambu to the south. The district has an area of 7,190 km<sup>2</sup> and eleven divisions.

This report has divided the catchment into six Eco-tourism Management zones of unique attractions with regard to eco-tourism development and on the basis of the dominant bi-physiographical features, which include: -

- Lake Nakuru National Park
- Nakuru Town
- Menengai Crater
- Bahati/Dondori –Lake Solai
- Soysambu/Eburru – Lake Elementeita
- Bagaria-Mau Narok-Njoro-Rongai

**Fig. 2 Eco-tourism zones**



### 3.3 The Zones Environmental profiles

#### 3.3.1 Menengai Crater Zone

Menengai Crater, located to the North of the catchment is a high altitude (up to about 2040 metre above sea level) and scenic area from where visitors can appreciate the panoramic view of the various geographical and topographic structural beauty of the region. It is endowed with magnificent cliffs and is suitable for pare-grinding and nature trails. The local people mainly use the existing trails to the crater bottom for subsistence economical activities with infrequent visitors excursions, mainly the surrounding schools who on request are taken down the trails at a minimal fee. The natural vegetation has continued to dwindle at the summit and within the crater through charcoal burning and unplanned settlements fringing the hilly areas almost reaching the top of the hill. Vegetation is a mixer of woody species characteristic of high altitude and low altitude species with the latter mainly composed of *Tarchonanthus carmporatus*. The high altitude shrubs were not identified during this survey, but it breaks the monotony of the lowland area. Other woody species common to this area are the *Eucalyptus* species, which was introduced by the forest department as an agro-forestry species. However, the agro-forestry activities have completely been neglected and only a few patches of the previously larger forest of this species are currently available.

Menengai Crater is a potential landscape viewing point for LNNP, the Nakuru Town, crater floor, Dondori-Subukia range, Eburu-Mau escapement, Nandi and the Tungeni Hills and the pre-historic water channel through which the larger Lake Nakuru used to drain northwards. These scenic areas give a broader picture of the rift valley and all other geographic features in one glance. The rim of the crater provides an opportunity for better viewing of the crater floor, and improvement of tracks into the crater floor will encourage excursions down hill where much of the vegetation is still pristine.

#### Ecological concerns

The main concerns are the uncontrolled erosion on top of the hill and along the road that leads to the summit due to poor maintenance. The poor condition of the road is also a hindrance to visitors who may wish to visit the summit. Human settlements are increasing by day on the eastern side of the Menengai Crater resulting in clearing of the natural vegetation subsequently exacerbating erosion in these areas. Quarrying on the foothill is also another environmentally unfriendly activity interfering with the scenic value of the hill as one moves out of the Nakuru Town toward Lake Solai. The land tenure status of the crater is not clear although it was previously under the Nakuru County Council. Charcoal burning on the floor of the crater is rampant and similarly the local communities are using the crater as a grazing area. Development of nature compatible eco-tourism activities in partnership with stakeholder will certainly minimize these negative impacts on the crater floor.

#### 3.3.2 BAHATI-DONDORI-LAKE SOLAI ZONE

Bahati/Dandori –Lake Solai is located to the Northeast of the catchment. It is consist of (1) Lake Solai, (2) Dondori forest and (3) The Lake Bogoria connection.

#### Lake Solai



This 8 km<sup>2</sup> lake is located 50 Km north of Nakuru town. The Lake is fringed by extensive grasslands and marshes dominated by *Cynodon dactylon* and reeds. The marshes and shoreline grasslands are rich in bird life like African jacana, squacco herons, crowned cranes, and various species of egrets and marsh harriers and paleoarctic migrants, and can be viewed without a telescope or pair of binoculars. The Maji Tamu marsh to the north is one of the sites with an abundant and diverse birdlife. An extensive growth of *Acacia xanthophlea* woodlands is found in the south and thick growths of papyrus. This area has been found in past water bird counts to be extremely rich in both waterfowl and terrestrial bird species.

The volcanic rocky ridge to the north offers an excellent picnic site with a view of the entire lake. The area is heavily used for grazing although livestock presence does not appear to have any significant impacts on the bird life. The lake is shallow and during high water levels would offer exciting boating excursions using inflated dinghies.

#### **Dondori forest**

The Dondori Forest covers an area of 6,956 hectares, half of which is composed of indigenous tree species. In addition to the species mentioned above, the forests hold stands of *Aningeria adolfi-friedericii*, *Syzygium guineese* and *Podocarpus falcatus*. Over 200 bird species have been reported in this forest. The forest fauna has not been described. As in the other forest blocks, illegal excisions and harvesting of forest products have been occurring over the last 10 years.

#### **Ecological concerns**

Erosion is rampant in the area especially during storms that bring flash floods from the Subukia highlands. The local residents expressed concern over the increased siltation rate and the need for its control. The lake water is turbid with a Secchi transparency of less than 5 cm. The high turbidity may be a drawback to boating activities.

During the survey about 25% of the lake was under Nile cabbage that covered extensive areas to the southwest. Alongside the water cabbage, dense clumps of lemna, the bead weed was observed. The presence of invasive aquatic species may be an indicator of increased eutrophication, which needs to be studied and control measures instituted. The eutrophication is attributable to runoff from the intensely cultivated Bahati area and irrigation along some of the feeder streams.

High livestock concentration during the dry season may interfere with breeding of water-birds as the shoreline is highly valued dry season grazing resource. Some of the swamps where boreholes are located have been negatively affected by trampling and overgrazing by livestock being water neared the lake. Overall the area is relatively pristine and offers ecotourism potential that involves cultural, ornithological as well as hiking excursions and can withstand moderate human disturbance without deleterious environmental impacts.

#### **Lake Bogoria – Solai connection**

Lake Bogoria can be accessed from Lake Solai through a road network under rehabilitation, which passes through scenic areas with massive cliffs covered in *T. camphoratus* and Euphorbia trees with a wide variety of birds. The road passes along the floor of the rift and the valley through which the former Greater Lake Nakuru drained northwards towards Lake Baringo and Bogoria. Several volcanic cones dotting the landscape are encountered along the road. The level of human activities is low, offering the visitor a view of the rift valley very different from that along the Nakuru-Marigat Road. The eastern cliffs of Lake Bogoria offer a panoramic view of the lake that has aerial photography connotations. The Lake Bogoria viewpoint is located along the basaltic cliffs

and has a large variety of terrestrial birds and the lake can be accessed from the southern part from this eastern cliff through the Kituro-Emsos gate, with stoppages at scenic point along the cliffs and the shoreline.

### **3.3.3 Soysambu-Elementeita-Eburu Zone**

#### **Soysambu plains-Eburu Hills**

This area has the highest poorly documented ecotourism potential in terms of biodiversity and scenery. It is a relatively pristine area with a variety of wildlife, landforms and unique vegetation assemblages. The Plains are inhabited by game birds, large herbivores including zebras and offer views of endless plains. The area around Utut forest has unique volcanic and lava flow landforms with numerous caves and hot springs. The road follows the old Uganda railway line that branched off from Gilgil to the west skirting the western shoreline of Lake Elementeita before it was relocated to its present location, hugging the eastern Rift Valley escarpment. The route presents breathtaking scenery of the plains and the Eburu volcanics' as well as the eastern Rift Valley escarpment. Local residents have tapped the hot springs for freshwater and in the morning a soft mist hangs over the area, providing a serene environment. The volcanic hills with sparse vegetation are ideal for hiking and nature based walks and prides fantastic views of the undulating plains, dotted with volcanic plugs and cliffs.

Lake Elementeita found in this area is the smallest of a chain of alkaline saline lakes lying in the floor of the Kenyan – Tanzania Rift Valley. Depths in the lake range between 3.7 and 0.9m (Melack 1976). Water temperature in the lake manifests remarkable monthly variations generally ranging between 17<sup>0</sup>C and 22<sup>0</sup> C. Numerous islands of black lava dominate the western part of the lake making it more picturesque. The lake manifests geothermal activity in the form of warm springs at the southern end, which provide opportunities for swimming. These lakebed springs have diameters ranging between 0.2 and 0.3 m and are continually warm water at approximately 30 – 40 at high water levels. Lake Elementeita provides seasonal habitat to both the lesser and greater Flamingo, which migrate between here Lakes Nakuru and Bogoria in the north and elsewhere into several and Southern Africa. The lake is also home to several other bird species notably mars storks (*Leptoptilos crumeniferus*), Fish eagles *Curcuma vocifer* and the populations of migratory Zebras (*Equus burchell*), Thompson's Gazelles (*Gazzella thomsoni*) and Giraffes. Other animals common around the lake include hyenas and Dik dik (*hynochotrogus kirkir*). Most of these animals are concentrated around the northern woodlands where human influence is minimal.

#### **Environmental concerns**

The area is currently under no formal protection and the community needs to be sensitized on ecotourism values. Currently, charcoal burning is rampant due to poverty threatening any viable nature based livelihood alternatives. Ecotourism developments need to be planned in an unobtrusive manner involving the landowners and other stakeholders.

#### **Eburu Hills**

The Eburu hills are relatively young volcanic high highlands dotted with numerous hot springs. Some parts of the area have been cleared for human settlements but to the southeast, parts of the indigenous forest remains. The hills are strewn with lava flows and

shiny obsidian rocks. The Eburu hills offer fantastic views of the physiographic settings of Lakes Nakuru, Elementeita and Naivasha. From this vantage point the Kipipiri Hill, Kinangop plateau and the Aberdare ranges are visible in a panoramic setting. There are several old farmhouses and innovative contraptions to extract water from the numerous hot springs in the area. The possibility of nature trails within the forest for viewing the abundant forest birds, insects and trees exist.

#### **Environmental concerns**

The deforestation in the Eburu is a major concern as most of the valuable hardwood trees have been illegally logged. The largest portions of the remaining forests are largely composed of secondary growth as illegal logging for timber and charcoal burning has devastated large swathes of the forest. Surveys need to be undertaken and compared to the KIFCON surveys carried out in late 1980 and early 1990s.

#### **3.3.4 Lake Nakuru National Park Zone**

Tourism in the park is well developed, though no previous eco-tourism areas have been opened up for leisure walks to appreciate and explore the contextual uniqueness of different vegetation types and their inherent natural structural complexity. There are only a few such potential areas that have been available to tourists visiting the park that include Makalia falls, Baboon Cliff and out of Africa view point. Much of the eco-tourism potential of these areas among others has not been fully tapped, and opening such areas has an added advantage of re-distributing visitors evenly within the park to avoid the current over concentration along the existing road network. Such measures are well spelt out in the management plan of the park and its catchment. The current survey, however, re-assessed the potential of the areas and infrastructure required to uplift the value and attractiveness of these areas to tourists. The areas selected for eco-tourism development within the park are as follows.

##### **3.3.4.1. Lion Hill view point**

This viewpoint is situated on the eastern side of the lake on a hill running north south from near the Lanet Gate to Lake Nakuru lodge. Vegetation on this hill is pristine and is mainly dominated by *Tarchonanthus camphoratus*, which is the most dominant herb species. Other species of woody plants are *Acacia nilotica*, *Rhus natalensis*, *Maytenus puttrikioides* and *Tinnea ethiopica*; and the area is also interspersed with the lemon grass. There are a variety of wildlife such as buffalo, leopard, dik-dick and other herbivores. The lion hill vegetation similarly supports a variety of birdlife characteristic to this vegetation type offering an interesting addition to waterfowl viewing at the lakeshores. The circuit takes one through a stand of *Euphorbia candelabrum*, a forest stand unique in this eco-region.

From this vantage point there is a magnificent view of Lake Nakuru, especially of the flamingos fringing the lake in pink. The lesser flamingo sometimes congregate in the lake in the thousands and on occasions in millions. Mounting a telescope will enable visitors view the flamingo in detail and other waterfowl. The viewpoint provides a panoramic view of the Lake Nakuru catchment, the Nakuru Municipality and the Mau ranges, Eburu Volcanics and the Bahati escarpment.

##### **3.3.4.2 Baboon Hill view point**

The baboon cliff is currently one of the most heavily visited sites in the Park and allows visitors enjoy a virtual aerial view of the lake and the flamingos. Over years the number of visitors have since continued to increase causing congestion on the cliff. The popularity of the cliffs reinforces the need for the development of similar areas within the park to ease human traffic and diversify such popular viewing points. Other than the lake view, troops of baboon and rock hyrax provide additional attractions. The area is also rich in cliff habitat and utilizing birds such the Nyanza swifts and the Vereaux eagles. The cliff constitutes part of the main circuit from the *Olea-Teclea* dry upland forest with unique birdlife. Other physical features that are visible from the cliff are the Nakuru Municipality, Dondori hill, the Mau ranges and Eburu hills. The cliff is also an important historic site that was a favourite recreational site for the first president of Kenya. Rehabilitation of these facilities and brochures on historic perspectives of the area will be an added advantage to visitors.

#### **3.3.4.3 Out of Africa**

This site is a located on secondary circuit from the main circuit linking the *Olea-Teclea* forest a dry-upland and the Baboon cliff viewpoint. This cliff promontory is situated on the southeastern part of the park and is amongst the highest points in the park. It compliments the lion viewpoint with excellent views of southern lakeshore, the southern grasslands, Enasoit volcanic plug, Euphorbia forest and the expansive Soysambu grasslands. The shape of the lake from this point approximates the map of Africa with one standing somewhere in Spain and hence the name "Out of Africa." The viewpoint opens to the grasslands to the south of the park, Eburu hill, the Soysambu grasslands and Menengai crater. It is a magnificent picnic site for visitor and a birdlife viewing point.

#### **3.3.4.4 Olea-Teclea Forest**

The area is unique in the Lake Nakuru area as it is the only remnant of the formerly extensive dry upland *Olea* forest that has been cleared for agriculture and settlements. *Olea africana* and *Teclea simplicifolia* woody plants dominate the vegetation. A wide variety of birdlife characteristic to this vegetation type is a major attraction to bird watchers, in addition to other animals such as black rhinos, dik diks, mountain reedbucks and *Colobus* monkeys. It is a crossed canopy forest with dense undergrowth where nature trails may help in bird watching activities.

#### **3.3.4.5 The Presidential Pavilion**

This was a favourite resting and recreational site for the first President of Kenya where cultural dancers performed for him and his retinue. The site is an excellent flamingo near shore viewing point. The physical infrastructure at this site was in place until mid 1990s before they were pulled down and only the foundation slabs remain. This site is envisaged for re-construction due to its rich history, location and value as an education centre to supplement the existing ones. This education centre will deal with the history of the Park, ecology of the lake and sell brochures on eco-tourism within the proposed eco-tourism circuits within and outside the park. It also provides an ideal site for refreshment and relaxation, and can be an ideal site for a cultural centre that can include life cultural performances. The Presidential Pavilion will also continue to act as a stop point for waterfowl watching along the lakeshore.

#### **3.3.4.7 Makalia Falls**

It is the only easily accessible waterfalls in the region and inside the park. This site has an existing campsite that is popular with tourists and overlanders. The area is accessible throughout the year by all categories of vehicles. The surrounding vegetation is composed of *Acacia xanthophloea* (the yellow fever tree) and next to the Naishi grasslands with a wide variety of wildlife species. The waterfalls rock outcrop is an important sleeping site for baboon, and a good site for bird watching.

### **3.3.5 The Nakuru Town Zone**

Nakuru town was officially recognised as a town in 1904 following its foundation by the builders of the Kenya-Uganda railway. After independence, the town expanded rapidly and new neighbourhoods were added on in an ad hoc manner. Today, it is the fourth largest town in Kenya supporting a population of 400,000 people. For the last three decades, the population has been growing at a rate of 10% per annum. To accommodate this population, the town's boundaries have been progressively extended and it presently occupies an area of 290 km<sup>2</sup>. The urban sprawl has encroached into farmlands, forest and wildlife habitats at the town's periphery, and is a major threat to the future of Lake Nakuru National Park.

### **3.3.6 Mau Forest (Mau Summit/ Mau Narok)-Rongai Zone:**

In the western part of the catchment is Mau forest Escarpment (about 3000m a.s.l.). It forms part of a national watershed (the Mau Complex) and is the largest of these forest blocks covering an area of **65,000 hectares**.

## Section Four

### Ecotourism potentials-stakeholders, natural and cultural products

#### 4.0 Introduction

The Lake Nakuru region has high tremendous ecotourism potential that despite its immense local, national and international importance has not been exploited for socio-economic development. The situation has been aggravated by lack of ecotourism capacity, information and infrastructure development.

#### 4.1 The Stakeholders

Stakeholders for Lake Nakuru National Park and its catchment are defined in this report as interested parties/individual, organizations including those benefiting from tourism and natural conservation of the area, its managers, the local people, the tourists as well as investors, potential and current. Various stakeholders in Lake Nakuru and catchment (Table 3.2) were identified, and include:-

- **Policy-makers** including KWS, KTB, Ministry of Information and Tourism, Department of Forestry, Ministry of Water, Government officials, politicians, MCN and NCC, among others.
- **Tourists:** International and domestic tourists, eco-tourists, study tours, school groups, among others.
- **Local Population:** small and large scale farmers, urban and rural residents, women, youths, among others.
- **Commercial stakeholders and infesters:** Lodge and camp owners and operators, tour operators, curio dealers and handicraft sellers, hotel and restaurant owners/operators, taxi owners/operators, tour/travel agencies, among others.
- **International and National Organizations, NGOs and CBOs:** WWF, AWF, EAWS, KATO, TDC, ESOK, Friends of Lake Nakuru National Park, Forest Action Network, Friends of Mau Watershed, Eburru Community Forestry Action, Lake Solai Wetlands Conservation Association, Lake Elementeita Community group, Otutu Conservancy, among others
- **Researchers/Academics/Conservationists/Educators:** Universities (Egerton, Nairobi, Kenyatta, Moi), international researchers on flamingos, lake ecology, tropical forests, tourism and eco-tourism, amongst others.

#### 4.2 Existing Tourism Development in Lake Nakuru and Catchment

LNNP is the major tourist zone in the region, attracting about 200,000 tourists, with the tourism activities being overcrowded in only a few areas within the Park, which has developed in several stages in the last 50 years. In the 1950s, the Lake was one of the best sites for observing flamingos. The flamingos were protected by the Royal Game Ordinance 12/51 Section 4 as they faced decimation by commercial exploitation for feathers and bird shooting. In 1957 Lake Nakuru was declared a National Park. In 1960, the southern lakeshore was established as a bird sanctuary to protect the lesser Flamingos and by 1961 the southern two-thirds of the lake was put under the protection of National Parks. In 1968 the whole lake and its immediate foreshore, a total of 14,000 acres, was officially declared a National Park. It was soon realised that the small perimeter of forest shore was totally inadequate as a buffer zone if the lake and its unique life were to survive against human encroachment and threats of 'civilisation'. In 1972 following an urgent appeal from Kenya, WWF undertook to raise the money to

expand the National Park from 14,000 acres to 50,500 acres at a cost of US\$ 500,000. The legal agreements effecting the expansion were signed and LNNP was gazetted under legal notice number 137 of 12/6/86; and the boundaries are delineated in boundary plan 204/57, which delineates a total area of 18,800 ha (188 km<sup>2</sup>). Between mid-1970's and 1985, there was an alarming drop in the population of black rhinoceros (*Diceros bicornis*) from 20,000 to 450 due to poaching. The Kenya Government established Lake Nakuru Rhino Sanctuary in 1987. This was to become Kenya's first Rhino Sanctuary. The park was fenced off with a 78-km long solar powered electric fence. In 1990 LNNP was designated as a Ramsar site (RAMSAR site No. 476), based on the "Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar Convention". The land use and land treatments described thus far have serious implications for the environment of the catchment, the national park and for the lake in particular. Over the years, LNNP has become an island of nature surrounded by a sea of humanity. The potential effects of this insularization are particularly worrying. Nairobi National Park, which shares a similar predicament, is forecasted to eventually lose over 80% of its species, and similarly, the Serengeti National Park is expected to eventually lose about 70% of its species (Soule et al., 1979 cited in Mwangi, 1994).

### **4.3. Eco-tourism Potentials in Lake Nakuru and catchment**

Lake Nakuru National Park and catchment has enormous ecotourism potentials that include natural and cultural products and other tourist activities like nature walk, horse riding, discovery safaris, agro-tourism, forest eco-tourism, landscape viewing, visit of local people in cultural villages and historical sites, fishing and many others. The potentials are summarized by eco-tourism zone by zone (Table 3.1).

#### **4.3.:1 Eco-tourism potential-Lake Nakuru National Park Zone**

Tourism in the park is mainly from the comfort of the vehicles, with no eco-tourism areas opened up for leisure walks to appreciate and explore the contextual uniqueness of different vegetation types and their inherent natural structural complexity. There are only a few such potential areas like Makalia falls, Baboon Cliff and out of Africa view point that are available to tourists visiting the park. However, much of the eco-tourism potential of these areas has not been fully tapped. Opening of such areas has an added advantage of re-distributing visitors evenly within the park to avoid the current over concentration along the existing road network. Such measures are well spelt out in the management plan of the park and its catchment, and include

- Production of tourist information materials
- Opening and maintaining of the Lion Hill summit and Out of Africa road networks
- Establishment of a tourist information Office in the Park
- Establishment of a cultural park interpretation office at the presidential pavilion
- Providing telescopes for bird viewing at baboon cliff and lion hill summit
- Linking the park to the catchment through infrastructure development and advertisements

#### **4.3.2 Eco-tourism Potentials in Nakuru Town Zone**

Some of the potential identified in Nakuru Town include the market, the Town centre (CBD), Kenyatta shopping centre, railway station and restaurant, curio center, hyrax museum, historical and cultural sites, among others (Table 3.1).

#### **4.3:3 Eco-tourism Potentials in Menengai Crater Zone**

Menengai Crater is a potential landscape viewing point for instance Lake Nakuru National Park, the Nakuru Municipality, crater floor, Dondori-Subukia range of hills, Eburu-Mau escapement, Nandi Hills and the pre-historic water channel through which the larger Lake Nakuru used to drain northwards. These scenic areas give a broader picture of the rift valley and all other geographic features in one glance. The rim of the crater will provide an opportunity for better viewing of the crater floor once a foot track developed around the crater rim. Improvement of tracks into the crater floor will also encourage excursions down hill to the floor of the crater where much of the vegetation is still pristine.

#### **4.3:4 Eco-tourism Potential in Bahati/Dondori – Lake Solai Zone:**

The ecotourism potential of this zone can be harnessed by connecting it to the central Kenya and Lake Bogoria Tourist circuits. The zone eco-tourism potentials including the following.

- Fault scarp, hills and cliffs,
- Bahati/Dondori forest – various bird species-water and terrestrial birds
- Lake Solai - open waters
- Rivers – Riverine nature trails - Maji matamu stream,
- Catholic Shrine – Mama Maria Shrine
- Cultural villages, lake view,
- Pastoral economy, among others.
- Lake Bogoria view point

#### **4.3:5 Eco-tourism Potentials in Soy Samburu/Eburru - Elementaita Zone**

Existing eco-tourism groups include (1) Lake Elementaita Eco-tourism Group, (2) Otut Wildlife Conservancy Group, and some of the other major eco-tourism products identified in this zone include

- landscape,
- hills,
- volcanic cones,
- lake Elementaita ecosystem,
- bush, rivers, wildlife and birdlife,
- geysers, warm springs,
- Pleistocene lakebeds, colonial history, old railway, Lord Cole's grave' historical sites
- steam water harvesting, cultural villages, among others.

#### **4.3:6 Eco-tourism Potentials in Mau Forest (Mau Summit/ Mau Narok/Rongai) Zone**

There are various ecotourism potentials (attractions). These include Mountain landscape, hills, cliffs, valleys and Nderit riverine, mountain streams, cold springs, forests wildlife, primate (monkeys and baboons), variety of birdlife, butterflies, reptiles, water reservoir, colonial history, old church, Lord Egerton castle and university, large farms, cultural village, among others.



## Section five

### Eco-tourism development problems and constraints in the region

#### 5.0 Introduction

Promotion of eco-tourism development and nature conservation Lake Nakuru national park and its catchment face various problems and constraints that have to be effectively addressed if the model ecotourism is to work. This section outlines the main problems/constraints facing the Ecosystem and also outlines various Government policy situations regarding eco-tourism development in Kenya.. The problems/constraints are

- (1) Land-use pressure related problems,
- (2) Infrastructure,
- (3) Marketing,
- (4) Education and awareness creation,
- (5) Information and database needs, and
- (6) Environmental degradation

The key to a successful eco-tourism development in any destination is to base the development on well documented ecotourism development plan on the issues and problems, which beset the area. It is important to maintain constant liaison between the planners(s) and the groups/agency for whom the plan is being prepared—the stakeholders. It is also important that crucial stakeholders are contacted in the identification of the problems in such a way that they gain a feeling that these are their problems of which they should design appropriate solutions. Lake Nakuru National Park Ecosystem is faced with many problems (Table 4.1). These problems combine to threaten the environmental health and sustainable development in the ecosystem.

#### 5.1 Nakuru Municipal (Town) Zone

- 1) Poor political goodwill – lack of polite
- 2) Community attitude – local authority to do anything change through education
- 3) Governance – people to be involved participation, transparency, high turn over out of chief officers /heads of departments.
- 4) Public – private partnership
- 5) Manpower

#### 5.2 Menengai Crater Zone

- (1) Poor access road - Visitors who have gone to Menengai Crater have complained about poor road – accessible to 4- wheel Drive only.
- (2) Lack of proper structure to display their wares- currently, they use makeshift shades which is rendered useless when it rains,
- (3) Lack of water
- (4) Charcoal burning
- (5) The land tenure status of the crater is not clear although it was previously under the Nakuru county Council

#### 5.3 Problems/Constraints in Bahati/Dondori – Lake Solai Zone

1. Poor infrastructure- poor roads
2. Lack of promotion
3. Lack of adequate fresh water

#### **5.4 Problems/Constraints in Soy Sambu/Eburu – Lake Elementaita Zone**

1. Marketing of the site
  2. Lack of foods
  3. Tour drivers are not within to bring their clients to require trips.
  4. Lack of fresh water
  5. Land ownership
  6. Lack of infrastructure
  7. Masai continue to graze their animals
  8. Charcoal burning
  9. Pollution of Lake Elementeita Used by the locals to wash their clothes
  10. The Lake is used inappropriately – they should carry water and wash at a distance to avoid direct discharge of nutrients into the lake
  11. Lack of any eating place
  12. Water problem but technology established through cooling system from steamjets offers innovative ideas and attraction to ecotourism
  13. Wildlife destruction
- 1) Infrastructure – no public transport, no clinics, no health centre.

#### **5.5 Current Management and Planned Programmes in Lake Nakuru and catchment**

Different stakeholders are making various development efforts in Lake Nakuru and its catchment that may impact on nature conservation and ecotourism development in the area. Some of the information to be provided should include the Proposed Highway that may pass through the Park. Remember the Senior Warden talked about during our field visit. The role of WWF, the Nakuru Town Development Efforts, etc. expect a stake from the ecosystem. But, the existence of the ecosystem and the Park its natural state is also important on the national tourist circuit and water conservation. Lake Nakuru National Park is the second most visited park in Kenya. The ultimate goal for the ecosystem should be to create a "balance", a "harmonious compromise" between competing forms of interests in the area.

## Eco-tourism development plan in lake Nakuru and its catchment

### 6.0 Introduction

Lake Nakuru region has vast potential for eco-tourism development for sustainable socio-economic development and nature conservation, that can be realised through a holistic approach and genuine involvement of all stakeholders. The Central Government needs to provide the enabling working environment for effective co-ordination amongst the stakeholders and implementation of the proposed development programmes, and the different stakeholders including lodge owners/operators, NGOs, county councils, and local people must work together. This section outlines proposals that can lead to realisation of ecotourism benefits in the Lake Nakuru region in an integrated manner, within the framework of Lake Nakuru Ecosystem Integrated Management Plan and Nakuru Strategic Structure Plan (NSSP), taking into account the Ecosystem's carrying capacity. The vision of this plan is to nurture, extend and consolidate Eco-tourism development in the region for sustainable environmental conservation and management and provide a unique wildlife experience without upsetting the integrity of the ecosystem's resources, especially the birdlife, in line with the Kenya National Tourism Master Plan of 1995 and the Mission of the Kenya Tourism Board (KTB). This is to enhance the economic and social well-being of Kenya and its people through increased foreign exchange earnings, creation of jobs and consumption of Kenya goods and services while enhancing the physical and aesthetic environment and the cultures of the people of Kenya, and ensuring the conservation and the sustainable use of its unique national heritage. The plan will ensure the Tourism carrying capacity that is the level of visitor use the ecosystem can accommodate with high levels of satisfaction and few impacts on resources, the society, economy and culture of the area. Expected outputs will include; increased tourism revenue for the local community and KWS through diversification of tourism base, reduced pressure on natural resources caused by anthropogenic activities associated with mass tourism, increased community participation and involvement in conservation, promotion of nature based business plans that support development of tourism infrastructure and markets and more importantly improved management and conservation of bird-life and other natural resources. . In achieving this many factors must be considered, including the natural capacity of the area, the attitudes, perceptions and norms of the visitors using of the Ecosystem's resources, and temporal and spatial dimensions of this use. These factors may be grouped under (1) environmental, (2) social and (3) management/administrative factors: -

#### 6.0:1 Environmental factors

- (a) Size of area and usable space. The Park has 188 sq.km, but not all parts are accessible.
- (b) Fragility of environment. Some areas have very fragile soils or other features vulnerable to use (e.g. vegetation type, around the lake, riverine, etc). Such areas must be determined and zoned.
- (c) Wildlife resources. Carrying capacity is affected by numbers, diversity, and distribution of wildlife. Record of dry and wet season patterns, availability of highly attractive species e.g. Cheetah, and their concentration areas must be known.
- (d) Topography and vegetative cover.

- (e) Specific behavior sensitivity of certain animal species (including flamingos) to human visitation and activities including pollution and swimming at Lake Elementatita. This has to be determined by biologists and other experts. For example, how is flamingo being affected by pollution?

### **6.02 Social factors of carrying Capacity**

Social Factors to be considered when determining carrying capacity should include the following:

- (a) Viewing pattern is evenly distributed unlike the present situation where over 70% of use occur in 10% of the area, 50% of use between the hours 15.30 and 18.30.
- (b) Tourists' viewing choices that spread the current interests on birdlife-flamingos to other attractions to avoid crowding.
- (c) Provide for visitor opinions on use levels, crowding and satisfaction.
- (d) Availability of facilities like lodge beds, campsites, picnic sites and education facilities.

### **6.0.3 Management Controls**

A number of management/administrative procedures can be used to increase carrying capacity, that include:

- (a) Design viewing tracks and trails to distribute use widely.
- (b) Reduce conflict between competing uses (e.g. Zone area for special campsites or hotels)
- (c) Provide adequate information and interpretation services
- (d) Increase durability of heavily used resources (e.g. Surfacing materials)
- (e) Provide facilities and design policies that encourage wet or off-season use.
- (f) Diversifying tourist activities.

It is important to note that carrying capacity varies according to seasons, and time and should address factors like tourists' behaviour patterns, facility design and management systems. The model adopted for the management of the ecosystem therefore is a dynamic and integrative one which takes into account all the factors including policies, tenurial rights and responds to the situation as it develops and with accurate assessment of future trends. This approach is based on the concept of carrying capacity that employs rigid flexibility, thus changing with the ecological and socio-economic factors.

#### **6.1.1. Proposed Eco-tourism activities in Lake Nakuru National Park Zone**

- Development of observation viewpoints on the identified hills and cliffs including the baboon cliff, lion's hills, out of Africa, among others;
- Creation of picnic walking sites including Makalia Falls, among others;
- Development of nature trails for hiking and to connect the various proposed observation, caves and picnic areas;
- Creation of other game viewing, bird watching, shoreline circuits connecting other new sites;
- Reconstruction of presidential pavilion to be connected to baboon cliff equipped with historical records, telescopes etc;
- Creation of improved signage and information systems about the park,
- Promotion of partnership with local communities;
- Improvement of marketing systems,
- Training of staff of eco-tourism matters, among others.
-

#### **6.1.2. Proposed Eco-tourism activities in Nakuru Municipal (Town) Zone**

- Identification and protection of historical sites/buildings in the town eg. Hyrax hill;
- Promotion of Nakuru Town beautification and cleaning programmes,
- Establishment of tourist information office,
- Environmental law enforcement to stop sand harvesting, sewage and solid waste disposal, etc;
- Improvement of signage,
- Establishment of Maasai market on Kenyatta street,
- Improvement of the standards of railway and other restaurant and hotels;
- Creation of awareness, and
- Marketing of Nakuru town as a major tourism centre.

#### **6.1.3. Proposed Eco-tourism activities in Menengai Crater Zone**

The following is proposed for Menengai Crater Zone.

- gazettement of the crater as a conservation area to be done as soon as possible,
- development of road network,
- development of a sliding system connecting the Crater and Nakuru Town
- development of nature trail around the crater and down the crater floor,
- re-introduction of wildlife species including giraffes in the crater,
- creation of a sign at the crater rim, develop picnic area with toilet, kiosks, telescopes and other facilities,
- formation and registration eco-tourism associations by local people,
- public awareness and training of local guides to take tourists around the crater and down the crater floor;
- aggressive marketing of the crater eco-tourism potential, among others.

There a number of local people undertaking business activities on Menengai Crater rim selling Curio/Souvenir and other handicrafts. Most of them have been at the site within the last three years, are neither registered as a group of community businessmen/women nor as individuals and sell basically similar products – Kisii soapstone carvings and sodas. Occasionally they are hired as tour guides- helping tourists to descend down the escarpment. They know the land terrain of the area. This group should form a registered community group to operate the business, diversify their wares and help maintain security in the area.

#### **6.1.4. Proposed Eco-tourism activities in Bahati/Dondori – Lake Solai Zone**

- Promotion of community-based biodiversity conservation
- Development of access roads,
- Promotion of bird watching,
- Development of hiking, rock climbing, cave visits,
- Development of tourist campsite and hotel,
- Development of boating and canoeing,
- Development of tourism cultural village, festivals, etc,
- Public awareness and training of local guides,
- Aggressive marketing system including direct

#### **6.1.5. Proposed Eco-tourism activities in Soy sambu/Eburu – Lake Elementaita Zone**

- Development of the old railway line for landscape viewing and ride,
- Development of geysers and steam spring harvesting,
- Develop warm swimming system,

- Establish modern washing places to reduce pollution and improve on the standards of local activities,
- Promotion of cultural village,
- Promotion of local eco-tourism associations,
- Re-introduction of some wildlife species;
- Promotion of community awareness and training of local guides,
- Development of effective eco-tourism marketing system, among others.

#### **6.1.6. Proposed Eco-tourism activities in Mau Forest Zone**

- Promotion of community-based conservation structures to protect the catchment and forest reserve,
- Development of observation points equipped with relevant facilities,
- Development of nature trail to river valleys and bird watching area,
- Promotion of butterfly and forestry eco-tourism,
- Community awareness and training of local nature guides,
- Creation of local eco-tourism associations,
- Development of eco-tourism marketing system.

These development programmes require co-ordination amongst all stakeholders operating in Lake Nakuru and its catchment and those national and international organizations. There should be a database made available to all community-based organizations and individuals on possible national and international organizations and individuals that may be interested in Lake Nakuru and catchment to facilitate linkages and funding of the business plan.

## **6.2 Areas for further research**

Areas where additional research is needed to resolve current management problems and monitoring programs are outlined. These include: -

- (1) A detailed assessment study of tourist interests and expectation.
- (2) Assessment of local perceptions and level of understanding and capacity regarding ecotourism development.
- (3) Effects of land tenure systems and pressures on conservation and tourism
- (5) Carrying capacity studies

### **6.2.1 Expected Project outputs**

- Increased tourism revenue for KWS and the local community through diversification of tourism base.
- Reduced pressure on natural resources caused by anthropogenic activities associated with mass tourism.
- Increase community participation and involvement in conservation as well as socio economic development through community based eco-tourism organisations.
- Produce nature based business plans that support development of tourism infrastructure and markets.
- Improved management and conservation of biodiversity especially bird-life and other natural resources within lake Nakuru and its catchment.

### **6.2.2 Marketing aspects (Brochures, videos etc)**

- Develop a facility at the park gate to keep visitors attracted and come out of the vehicles and interact with park staff e.g. a small well-stocked shop, good

photographs of park resources, telephone bureau, good and clean toilets, information centre, *etc*

- Marketing and promotion activities to include: -
  - Developing interpretative materials e.g. brochures and maps indicating tourist circuits and places at Park gates
  - Marketing the catchment tourist facilities through the internet
  - Strengthening linkages with other conservation and tour agencies in the world.
  - Promoting local tourism.
  - Highlighting the history of the park in marketing literature together with important landmarks.

### **6.3 Summary -Recommendations for ecotourism development**

To realize eco-tourism in the region the following is a summary of suggested actions.

- Diversification of tourist activities, to encourage extended stay and repeat visits,
- Gazette Menengai Crater as a conservation area and develop tourist facilities like nature trails and campsites: and other potential sites like Hyrax Hill, Sirrikon cave, Mau forest and Kariandusi.
- Encourage visits and maintenance of old colonial houses e.g Lord Egerton castle built with stones shipped from Australia- *etc*.
- Support the development of effective community-based Eco-tourism groups and organisations outside the PA and incorporate existing VECs to conserve natural resources.
- Develop an Eco-tourism marketing strategy for the Lake Nakuru National Park and its catchment resources and support 5 community based activities, including basic infrastructure development
- Mobilisation and registration of community based Eco-tourism groups, Capacity building through Training, Education and awareness for local CBOs on Eco-tourism and produce Training, education and awareness materials produced and workshops conducted; set up a "Cultural Manyatta" Tourist Unit of the area. This should act as checking system for the abuse of cultural manyatta operations and also as a cooperative movement for cultural manyatta development.
- Create a credit line for local people who would like to venture into eco-tourism development and nature conservation activities in the ecosystem. Technical advice be provided to such interested parties like KWS
- Create Lake Nakuru and catchment Discovery Safari Unit (LANDSU) for promotion of safari walks and development of nature trails within the ecosystem. Many young people from the local area are trained and engaged in the nature walk activity and an increasing number of tourists are opting for nature walk. This may be a way of creating employment opportunities for local people as well as diversifying tourism development.
- Produce a Documentary Film entitle "New Vision of Lake Nakuru and its catchment" whose aim should be to promote eco-tourists products and activities e.g. discovery safaris, etc in the Lake and its Ecosystem. Production of ecotourism video production (important marketing tool).
- Provision for litter disposal and other wastes should be made available throughout the park and areas of tourists concentration in the catchment.
- A tourist information center on the entire Lake Nakuru Ecosystem be established at the gate of Lake Nakuru national Park where a huge billboard and pamphlets about various tourists activities, facilities and opportunities could be made available to the ecosystem visitors. Various brochures and posters be developed which can act as guidelines.

- There is need to widen the viewing base of the Park. Currently, game viewing is the primary attraction. Special attention should be given to interesting, but little-viewed attractions small mammals, birds (other than flamingos), plants, and general ecology- and static viewing - establishing of observation points. There are a number of such attractions in the Park and its catchment including the water falls and nature walk Mau Forests and Menengai Crater offers various opportunities of rock climbing as well as hiking. It is suggested that huge telescopes be mounted up on the escarpment at selected points for scenery viewing, where visitors can get out and spend time on the ground, as a way of diversifying viewing.
- A production of integrated land use plan including zonation for the entire ecosystem.



**Table 1 Summary of each ecotourism zone in the study area in terms of the main environmental features and key ecotourism attractions. The potential constraints to such development are also outlined.**

Ecotourism Zone	Administrative area	Environmental features	Natural attractions	Cultural attractions	Potential constraints
Lake Nakuru National Park	-	<ul style="list-style-type: none"> <li>• Open water</li> <li>• Shoreline</li> <li>• Springs</li> <li>• Hills &amp; cliffs</li> <li>• Woodland</li> <li>• Rangeland</li> <li>• Open grassland</li> </ul>	<ul style="list-style-type: none"> <li>• Waterbirds</li> <li>• Other wildlife</li> <li>• Baharini Springs</li> <li>• Baboon Viewpoint</li> <li>• Lion's Hill Viewpoint</li> <li>• Nature trails</li> <li>• Camp Sites</li> </ul>	<ul style="list-style-type: none"> <li>• Presidential Pavilion</li> </ul>	-
Nakuru Municipality	-	<ul style="list-style-type: none"> <li>• Municipal CBD</li> <li>• Residential zone</li> <li>• Industrial zone</li> </ul>	-	<ul style="list-style-type: none"> <li>• Kenyatta Shopping Street</li> <li>• Curio Market</li> <li>• Municipal Market</li> <li>• Municipal Gardens</li> <li>• Railway Station</li> <li>• Railway Resturant</li> <li>• Hyrax Hill Museum</li> <li>• Milimani Residential area</li> </ul>	<ul style="list-style-type: none"> <li>• Pedestrian crossings</li> <li>• Insecurity</li> <li>• Waste management</li> <li>• Poor signage</li> <li>• Lack of information office</li> </ul>
Menengai Crater	Menengai Hill	<ul style="list-style-type: none"> <li>• Planted forest</li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley observation points</li> </ul>	-	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Poor awareness</li> <li>• Water supply</li> </ul>
	Crater rim & floor	<ul style="list-style-type: none"> <li>• Cliffs</li> <li>• Lava flows</li> <li>• Ancient lake outflow</li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley view point</li> <li>• Rock climbing</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Curio kiosks</li> <li>• Resting &amp; refreshment facility</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Risk of accidents</li> <li>• Poor marketing</li> <li>• Land ownership</li> </ul>
Bahati-Solai	Bahati area	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Bahati fault scarp</li> <li>• Indigenous forest</li> <li>• Planted forest</li> <li>• Farms</li> </ul>	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Mountain climbing</li> <li>• Forest birdlife</li> <li>• River trail</li> <li>• Reservoir waterbirds</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Catholic Shrine</li> <li>• Cultural centres</li> <li>• Farm shops</li> </ul>	<ul style="list-style-type: none"> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Lake Solai	<ul style="list-style-type: none"> <li>• Fault scarp</li> <li>• Solai rangeland</li> <li>• Maji Matamu Stream</li> <li>• Lake Solai</li> </ul>	<ul style="list-style-type: none"> <li>• Lake waterbird</li> <li>• Other lake attractions</li> <li>• Reservoir waterbird</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Boating &amp; canoeing</li> <li>• Camping</li> <li>• Mountain climbing</li> <li>• Adventure hiking</li> <li>• Cultural villages</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Kisanana area	<ul style="list-style-type: none"> <li>• Pastoral rangelands</li> <li>• Ancient lake outflow</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Lake Bogoria view</li> </ul>	<ul style="list-style-type: none"> <li>• Adventure hiking</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>

Mwariki-Soysambu-Eburru	Mwariki area	<ul style="list-style-type: none"> <li>Savanna landscape</li> <li>Market centres</li> <li>Ranches</li> </ul>	<ul style="list-style-type: none"> <li>Adventure hiking</li> <li>Horse riding</li> <li>Rangeland birdlife</li> <li>Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Cultural villages</li> <li>Old railway</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Mwariki-Soysambu-Eburru	Soysambu Ranch	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Volcanic cones</li> <li>Ranching</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Other wildlife</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Horse rides</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Elementaita area	<ul style="list-style-type: none"> <li>Lake ecosystem</li> <li>Mabruk &amp; Kariandus rivers</li> <li>Acacia woodland</li> <li>Volcanic cones</li> <li>Ranching</li> <li>Lower Paleolithic pre-historic site</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic birdlife</li> <li>Woodland birdlife</li> <li>Landscape</li> <li>Elementaita &amp; Kariandusi Warm springs</li> <li>Pleistocene lakebeds</li> <li>Gamblian caves</li> <li>River trails</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Lord Cole's Grave</li> <li>Horse rides</li> <li>Masai cultural villages</li> <li>Adventure hiking</li> <li>Kariandusi Acheulian factory site</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Ututu area	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Volcanic cones</li> <li>Pastoralism</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Other wildlife</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Old railway</li> <li>Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Eburru area	<ul style="list-style-type: none"> <li>Eburru Mountain</li> <li>Mountain forest</li> </ul>	<ul style="list-style-type: none"> <li>Forest birdlife</li> <li>Adventure hiking</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Bagaria-Mau Narok-Njoro	Bagaria	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Nderit river</li> <li>Forest remnants</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Reservoir birdlife</li> <li>Other wildlife</li> <li>River trail</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Horse rides</li> <li>Reservoir boating</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> <li>Deforestation</li> </ul>
	Mau Narok area	<ul style="list-style-type: none"> <li>Mountain landscape</li> <li>Indigenous forest</li> <li>Mountain streams</li> <li>Farms</li> </ul>	<ul style="list-style-type: none"> <li>Forest birdlife</li> <li>Reservoir birdlife</li> <li>River trails</li> <li>Cold springs</li> <li>Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Adventure hiking</li> <li>Reservoir boating</li> <li>Old church</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> <li>Deforestation</li> </ul>
	Njoro-Rongai	<ul style="list-style-type: none"> <li>Plateau landscape</li> <li>Small &amp; large scale farms</li> <li>Njoro River</li> </ul>	<ul style="list-style-type: none"> <li>River trails</li> <li>Reservoir birdlife</li> <li>Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Reservoir boating</li> <li>Egerton University</li> <li>Colonial history</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> </ul>

**Table 2.1 Geographical and Environmental Feature of Lake Nakuru National Park and Catchment By Eco-tourism Zones**

Eco-tourism Zone/Characteristics	Geographical Areas	Altitude/Climatic factors	Environmental features	General Remarks
Lake Nakuru National Park	-The Lake and its shoreline 188 sq. km.	<ul style="list-style-type: none"> <li>• Altitude – 1,700 – 1,800 m</li> <li>• Annual Rainfall</li> <li>• Temperature average</li> </ul>	<ul style="list-style-type: none"> <li>• Diverse land forms</li> <li>• Open water</li> <li>• Shoreline</li> <li>• Springs</li> <li>• Hills &amp; cliffs</li> <li>• Woodland</li> <li>• Rangeland</li> <li>• Open grassland</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Waterbirds</li> <li>• Other wildlife</li> <li>• Baharini Springs</li> <li>• Baboon Viewpoint</li> <li>• Lion's Hill Viewpoint</li> <li>• Nature trails</li> <li>• Camp Sites Presidential Pavilion</li> <li>•</li> </ul>
	Hills and Acacia forests	•	•	•
Nakuru Municipality	290 sq. km. CBD - Town Centre-	•	<ul style="list-style-type: none"> <li>• Municipal CBD</li> <li>• Residential zone</li> <li>• Industrial zone</li> </ul>	<ul style="list-style-type: none"> <li>• - Pedestrian crossings</li> <li>• Insecurity</li> <li>• Waste management</li> <li>• Poor signage</li> <li>• Lack of information office Kenyatta Shopping Street</li> <li>• Curio Market</li> <li>• Municipal Market</li> <li>• Municipal Gardens</li> <li>• Railway Station</li> <li>• Railway Resturant</li> <li>• Hyrax Hill Museum</li> <li>• Milimani Residential area</li> </ul>
	Residential and other areas	•	•	•
Menengai Crater	Menengai Hill	•	<ul style="list-style-type: none"> <li>• Planted forest</li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley observation points Poor accessibility</li> <li>• Poor awareness</li> <li>• Water supply</li> </ul>

	Crater rim & floor	•	<ul style="list-style-type: none"> <li>• Cliffs</li> <li>• Lava flows</li> <li>• Ancient lake outflow</li> <li>• Geothermal status</li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley view point</li> <li>• Rock climbing</li> <li>• Landscape Curio kiosks Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Risk of accidents</li> <li>• Poor marketing</li> <li>• Land ownership</li> <li>• Resting &amp; refreshment facility</li> </ul>
Bahati-Solai	Bahati Area and Dondori forest	•	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Bahati fault scarp</li> <li>• Indigenous forest</li> <li>• Planted forest</li> <li>• Farms</li> </ul>	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Mountain climbing</li> <li>• Forest birdlife</li> <li>• River trail</li> <li>• Reservoir waterbirds</li> <li>• Landscape Catholic Shrine</li> <li>• Cultural centres</li> <li>• Farm shops Poor awareness</li> <li>• Marketing</li> </ul>
	Lake Solai Area	•	<ul style="list-style-type: none"> <li>• Fault scarp</li> <li>• Solai rangeland</li> <li>• Maji Matamu Stream</li> <li>• Lake Solai</li> </ul>	<ul style="list-style-type: none"> <li>• Lake waterbird</li> <li>• Other lake attractions</li> <li>• Reservoir waterbird</li> <li>• Landscape Poor accessibility</li> <li>• Water supply Boating &amp; canoeing</li> <li>• Camping</li> <li>• Mountain climbing</li> <li>• Adventure hiking</li> <li>• Cultural villages</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Kisanana area	•	<ul style="list-style-type: none"> <li>• Pastoral rangelands</li> <li>• Ancient lake outflow</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Lake Bogoria view</li> <li>• Adventure hiking</li> </ul>
Mwariki-Soysambu-Eburru – Lake Elemente.aita	Mwariki area Soysambu Ranch	•	<ul style="list-style-type: none"> <li>• Savanna landscape</li> <li>• Market centres</li> <li>• Ranches</li> <li>• Savannah landscape</li> <li>• Volcanic cones</li> <li>• Ranching</li> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape Colonial history</li> <li>• Horse rides</li> </ul>	<ul style="list-style-type: none"> <li>• Adventure hiking</li> <li>• Horse riding</li> <li>• Rangeland birdlife</li> <li>• Wildlife Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness Cultural villages</li> <li>• Old railway</li> <li>• Marketing</li> </ul>

	Elementaita area	•	<ul style="list-style-type: none"> <li>• Lake ecosystem</li> <li>• Mabruk &amp; Kariandus rivers</li> <li>• Acacia woodland</li> <li>• Volcanic cones</li> <li>• Ranching</li> <li>• Lower Paleolithic pre-historic site</li> </ul>	<ul style="list-style-type: none"> <li>• Aquatic birdlife</li> <li>• Woodland birdlife Kariandusi Acheulian factory site</li> <li>• Landscape</li> <li>• Elementaita &amp; Kariandusi Warm springs</li> <li>• Pleistocene lakebeds</li> <li>• Gamblian caves</li> <li>• River trails Colonial history</li> <li>• Lord Cole's Grave</li> <li>• Horse rides</li> <li>• Masai cultural villages</li> <li>• Adventure hiking</li> <li>•</li> </ul>
	Ututu area	•	<ul style="list-style-type: none"> <li>• Savannah landscape</li> <li>• Volcanic cones</li> <li>• Pastoralism</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape Colonial history</li> <li>• Old railway</li> <li>• Steam water harvesting</li> </ul>
	Eburru Forest Area	•	<ul style="list-style-type: none"> <li>• Eburru Mountain</li> <li>• Mountain forest</li> </ul>	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Adventure hiking</li> <li>• Landscape Colonial history</li> <li>• Steam water harvesting</li> </ul>
Bagaria-Mau Narok-Njoro	Bagaria	•	<ul style="list-style-type: none"> <li>• Savannah landscape</li> <li>• Nderit river</li> <li>• Forest remnants</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Reservoir birdlife</li> <li>• Other wildlife Farm shops</li> <li>• Horse rides</li> <li>• Reservoir boat</li> <li>• River trail</li> </ul>
	Mau Narok area	•	<ul style="list-style-type: none"> <li>• Mountain landscape</li> <li>• Indigenous forest</li> <li>• Mountain streams</li> <li>• Farms</li> </ul>	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Reservoir birdlife</li> <li>• River trails</li> <li>• Cold springs</li> <li>• Agro-ecotourism Poor accessibility</li> <li>• Poor awareness</li> <li>• Marketing Poor accessibility</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Deforestation</li> <li>• Deforestation Farm shops</li> <li>• Adventure hiking</li> <li>• Reservoir boating</li> <li>• Old church</li> </ul>
	Njoro-Rongai	•	<ul style="list-style-type: none"> <li>• Plateau landscape</li> <li>• Small &amp; large scale farms</li> <li>• Njoro River</li> </ul>	<ul style="list-style-type: none"> <li>• River trails</li> <li>• Reservoir birdlife</li> <li>• Agro-ecotourism</li> </ul>
<b>Lake Nakuru and</b>	Lake Nakuru National Park	•	<ul style="list-style-type: none"> <li>• Rift Valley Floor</li> <li>• Rift Valley lakes - Lake Nakuru, Elementeita, Lake Solai</li> </ul>	•

<b>Catchment</b>	Nakuru Town Menengai Crater	<ul style="list-style-type: none"> <li>Mau escarpment, Bahati Hills, Eburru Hills, Menengai Crater</li> </ul>
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**Table 2.2 Demographic and Socio-economic Profiles of Lake Nakuru and its Catchment by Eco-tourism Management Zones**

Eco-tourism Zone/Characteristics	Demographic Factors	Socio-economic factors	Land ownerships System	Land Use Patterns	General Remarks
Lake Nakuru National Park	-	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Government of Kenya</li> <li>Gazetted National Park</li> </ul>	<ul style="list-style-type: none"> <li>Conservation</li> <li>Tourism/Recreation</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Pavilion</li> </ul>
Nakuru Municipality	- Ethnic mix Population size Population density Rural population Urban population Total number of males Total number of females Youth population (15-25 years)	<ul style="list-style-type: none"> <li>Average income level</li> <li>Unemployment</li> <li>Labour force</li> <li>Poverty rate</li> </ul>	<ul style="list-style-type: none"> <li>Municipal CBD</li> <li>Residential zone</li> <li>Industrial zone</li> </ul>	-	<ul style="list-style-type: none"> <li>Kenyatta Shopping Street</li> <li>Curio Market</li> <li>Municipal Market</li> <li>Municipal Gardens</li> <li>Railway Station</li> <li>Railway Resturant</li> <li>Hyrax Hill Museum</li> <li>Milimani Residential area</li> </ul>
Menengai Crater	Menengai Hill	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Planted forest</li> </ul>	<ul style="list-style-type: none"> <li>Rift Valley observation points</li> </ul>	-
	Crater rim & floor	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Cliffs</li> <li>Lava flows</li> <li>Ancient lake outflow</li> <li>Geothermal status</li> </ul>	<ul style="list-style-type: none"> <li>Rift Valley view point</li> <li>Rock climbing</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Curio kiosks</li> <li>Resting &amp; refreshment facility</li> </ul>
Bahati-Solai	Bahati area	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Ancient lake-bed</li> <li>Bahati fault scarp</li> <li>Indigenous forest</li> <li>Planted forest</li> <li>Farms</li> </ul>	<ul style="list-style-type: none"> <li>Ancient lake-bed</li> <li>Mountain climbing</li> <li>Forest birdlife</li> <li>River trail</li> <li>Reservoir waterbirds</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Catholic Shrine</li> <li>Cultural centres</li> <li>Farm shops</li> </ul>
	Lake Solai	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Fault scarp</li> <li>Solai rangeland</li> <li>Maji Matamu Stream</li> <li>Lake Solai</li> </ul>	<ul style="list-style-type: none"> <li>Lake waterbird</li> <li>Other lake attractions</li> <li>Reservoir waterbird</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Boating &amp; canoeing</li> <li>Camping</li> <li>Mountain climbing</li> <li>Adventure hiking</li> <li>Cultural villages</li> </ul>

	Kisanana area	•	<ul style="list-style-type: none"> <li>• Pastoral rangelands</li> <li>• Ancient lake outflow</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Lake Bogoria view</li> </ul>	<ul style="list-style-type: none"> <li>• Adventure hiking</li> </ul>
Mwariki-Soysambu-Eburru	Mwariki area	•	<ul style="list-style-type: none"> <li>• Savanna landscape</li> <li>• Market centres</li> <li>• Ranches</li> </ul>	<ul style="list-style-type: none"> <li>• Adventure hiking</li> <li>• Horse riding</li> <li>• Rangeland birdlife</li> <li>• Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural villages</li> <li>• Old railway</li> </ul>
Mwariki-Soysambu-Eburru	Soysambu Ranch	•	<ul style="list-style-type: none"> <li>• Savannah landscape</li> <li>• Volcanic cones</li> <li>• Ranching</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Horse rides</li> </ul>
	Elementaita area	•	<ul style="list-style-type: none"> <li>• Lake ecosystem</li> <li>• Mabruk &amp; Kariandus rivers</li> <li>• Acacia woodland</li> <li>• Volcanic cones</li> <li>• Ranching</li> <li>• Lower Paleolithic pre-historic site</li> </ul>	<ul style="list-style-type: none"> <li>• Aquatic birdlife</li> <li>• Woodland birdlife</li> <li>• Landscape</li> <li>• Elementaita &amp; Kariandusi Warm springs</li> <li>• Pleistocene lakebeds</li> <li>• Gamblian caves</li> <li>• River trails</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Lord Cole's Grave</li> <li>• Horse rides</li> <li>• Masai cultural villages</li> <li>• Adventure hiking</li> <li>• Kariandusi Acheulian factory site</li> </ul>
	Ututu area	•	<ul style="list-style-type: none"> <li>• Savannah landscape</li> <li>• Volcanic cones</li> <li>• Pastoralism</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Old railway</li> <li>• Steam water harvesting</li> </ul>
	Eburru area	•	<ul style="list-style-type: none"> <li>• Eburru Mountain</li> <li>• Mountain forest</li> </ul>	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Adventure hiking</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Steam water harvesting</li> </ul>
Bagaria-Mau Narok-Njoro	Bagaria	•	<ul style="list-style-type: none"> <li>• Savannah landscape</li> <li>• Nderit river</li> <li>• Forest remnants</li> </ul>	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Reservoir birdlife</li> <li>• Other wildlife</li> <li>• River trail</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Horse rides</li> <li>• Reservoir boating</li> </ul>
	Mau Narok area	•	<ul style="list-style-type: none"> <li>• Mountain landscape</li> <li>• Indigenous forest</li> <li>• Mountain streams</li> <li>• Farms</li> </ul>	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Reservoir birdlife</li> <li>• River trails</li> <li>• Cold springs</li> <li>• Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Adventure hiking</li> <li>• Reservoir boating</li> <li>• Old church</li> </ul>
	Njoro-Rongai	•	<ul style="list-style-type: none"> <li>• Plateau landscape</li> <li>• Small &amp; large scale farms</li> <li>• Njoro River</li> </ul>	<ul style="list-style-type: none"> <li>• River trails</li> <li>• Reservoir birdlife</li> <li>• Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Reservoir boating</li> <li>• Egerton University</li> <li>• Colonial history</li> </ul>
<b>The Ecosystem Lake Nakuru &amp; Catchment</b>		•	•	•	•

**Table 3.1 Eco-tourism Potentials of Lake Nakuru and its Catchment by Eco-tourism Management Zones**

Eco-tourism Zone/Characteristics	Geographical Areas	Natural products/activities	Cultural products/activities	General Remarks
Lake Nakuru National Park	-	<ul style="list-style-type: none"> <li>Waterbirds</li> <li>Other wildlife</li> <li>Baharini Springs</li> <li>Baboon Viewpoint</li> <li>Lion's Hill Viewpoint</li> <li>Nature trails</li> <li>Camp Sites</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Pavilion</li> </ul>	-
Nakuru Municipality	-	-	<ul style="list-style-type: none"> <li>Kenyatta Shopping Street</li> <li>Curio Market</li> <li>Municipal Market</li> <li>Municipal Gardens</li> <li>Railway Station</li> <li>Railway Resturant</li> <li>Hyrax Hill Museum</li> <li>Milimani Residential area</li> </ul>	<ul style="list-style-type: none"> <li>Pedestrian crossings</li> <li>Insecurity</li> <li>Waste management</li> <li>Poor signage</li> <li>Lack of information office</li> </ul>
Menengai Crater	Menengai Hill	<ul style="list-style-type: none"> <li>Rift Valley observation points</li> </ul>	-	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Water supply</li> </ul>
	Crater rim & floor	<ul style="list-style-type: none"> <li>Rift Valley view point</li> <li>Rock climbing</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Curio kiosks</li> <li>Resting &amp; refreshment facility</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> <li>Risk of accidents</li> <li>Poor marketing</li> <li>Land ownership</li> </ul>
Bahati-Solai	Bahati area	<ul style="list-style-type: none"> <li>Ancient lake-bed</li> <li>Mountain climbing</li> <li>Forest birdlife</li> <li>River trail</li> <li>Reservoir waterbirds</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Catholic Shrine</li> <li>Cultural centres</li> <li>Farm shops</li> </ul>	<ul style="list-style-type: none"> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Lake Solai	<ul style="list-style-type: none"> <li>Lake waterbird</li> <li>Other lake attractions</li> <li>Reservoir waterbird</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Boating &amp; canoeing</li> <li>Camping</li> <li>Mountain climbing</li> <li>Adventure hiking</li> <li>Cultural villages</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Kisanana area	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Lake Bogoria view</li> </ul>	<ul style="list-style-type: none"> <li>Adventure hiking</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Mwariki-Soysambu-	Mwariki area	<ul style="list-style-type: none"> <li>Adventure hiking</li> <li>Horse riding</li> </ul>	<ul style="list-style-type: none"> <li>Cultural villages</li> <li>Old railway</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> </ul>



Eburru		<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Wildlife</li> </ul>		<ul style="list-style-type: none"> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
Mwariki-Soysambu-Eburru	Soysambu Ranch	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Horse rides</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Elementaita area	<ul style="list-style-type: none"> <li>• Aquatic birdlife</li> <li>• Woodland birdlife</li> <li>• Landscape</li> <li>• Elementaita &amp; Kariandusi</li> <li>• Warm springs</li> <li>• Pleistocene lakebeds</li> <li>• Gamblian caves</li> <li>• River trails</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Lord Cole's Grave</li> <li>• Horse rides</li> <li>• Masai cultural villages</li> <li>• Adventure hiking</li> <li>• Kariandusi Acheulian factory site</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Ututu area	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Other wildlife</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Old railway</li> <li>• Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Eburru area	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Adventure hiking</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Colonial history</li> <li>• Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
Bagaria-Mau Narok-Njoro	Bagaria	<ul style="list-style-type: none"> <li>• Rangeland birdlife</li> <li>• Reservoir birdlife</li> <li>• Other wildlife</li> <li>• River trail</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Horse rides</li> <li>• Reservoir boating</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Deforestation</li> </ul>
	Mau Narok area	<ul style="list-style-type: none"> <li>• Forest birdlife</li> <li>• Reservoir birdlife</li> <li>• River trails</li> <li>• Cold springs</li> <li>• Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Adventure hiking</li> <li>• Reservoir boating</li> <li>• Old church</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Deforestation</li> </ul>
	Njoro-Rongai	<ul style="list-style-type: none"> <li>• River trails</li> <li>• Reservoir birdlife</li> <li>• Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>• Farm shops</li> <li>• Reservoir boating</li> <li>• Egerton University</li> <li>• Colonial history</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>

**Source: Field Inventory and Observation 2004**

Table 3.2 Key Stakeholders in Eco-tourism and Related Issues in Lake Nakuru and Catchment

<b>CATEGORY/NAMES OF STAKEHOLDERS</b>	<b>REMARKS: ROLES/INTERESTS, RESPONSIBILITIES, AREAS OF CO-OPERATION AND CONFLICTS</b>
<p><u>POLICY-MAKERS/POLITICIANS (M.P.S AND COUNCILORS)</u></p> <ol style="list-style-type: none"> <li>(1) Government officials including national, provincial and District officers. Department of Forestry, Ministry of water, Soil and Water conservation, etc.</li> <li>(2) Kenya Wildlife Service including Wetland Groups, KTB, NEMA, ETC</li> <li>(3) Local Authorities including Nakuru Municipal councils and County Councils</li> </ol>	<p>General administration and management of communities, conflict resolution, facilitation of DDCs, enforcement of government policy etc.</p> <p>Working for biodiversity conservation, protection and rehabilitation of gazetted wildlife and forests, eg. Mau Escarpment. Has campaigned environmental degradation.</p>
<p><u>TOURISTS</u></p> <ul style="list-style-type: none"> <li>• Domestic tourists including school groups</li> <li>• International Tourists</li> </ul>	<p>Recreation and enjoyment. Their interests must be satisfied. Many are increasingly preferring environmentally friendly environment – “ecotourists”. A number are beginning to participate in community-based projects and preferring cultures and to work with local people.</p>
<p><u>LOCAL POPULATION</u></p> <ul style="list-style-type: none"> <li>• Small and large scale farmers</li> <li>• Urban residents</li> <li>• Women and youth groups</li> </ul>	<p>Need to participate in policy making on matters involving them. Require better livelihoods and economic development, poverty alleviation and good environment. Willing to participate.</p>
<p><u>COMMERCIAL STAKEHOLDERS</u></p> <ol style="list-style-type: none"> <li>(1) Tour operators both in Nairobi and in Nakuru Town (local and international).</li> <li>(2) Lodge/Camp owners/operators in the Park and its catchment area including Nakuru Town</li> <li>(3) Campsite, hotels, other facilities</li> <li>(4) Curio dealers, souvenir and handicrafts sellers and others</li> </ol>	<p>Economic gains – profit maximization. Many are beginning to encourage sustainable development and good environment. Need for employment opportunities and economic empowerment might be overwhelming</p>
<p><u>RESEARCHERS/CONSERVATIONIST/ACADEMIC AND EDUCATORS</u></p>	<p>Generation of information and scientific prowess. Concerned with conservation and good environmental quality</p>
<p><u>NGOS &amp; INTERNATIONAL CONSERVATION ORGANIZATIONS</u> WWF, AWF, EAWS, KATO, KTDC</p>	<p>Promoting sustainable agriculture and supporting self help groups, water supply. Access to and working with grassroots;</p>
<p><u>CBOS AND OTHER LOBBY GROUPS</u></p> <ul style="list-style-type: none"> <li>• Friends of Lake Nakuru Park</li> </ul>	<p>Working for the protection and rehabilitation of gazetted forests, particularly in the Mau Escarpment. Also campaign against recent forest excisions. Working with the local communities Supporting environmental management within lake Nakuru watershed, particularly in tree planting and nature conservation activities.</p>
<p><u>DEVELOPERS/INVESTORS IN LAKE NAKURU AND ITS CATCHMENT</u> Tourism-based investors eg.</p>	<p>Those interested in tourism-based development projects.</p>

Source: Field Observation and Inventory 2004

**TABLE 4.1: Major Problems/Constraints Facing Lake Naukuru and Catchment by Eco-tourism Management Zones – A SWOT Analysis**

Eco-tourism Zone/Characteristics	Geographical Areas	Environmental features	Natural attractions	Cultural attractions	Problems/constraints
Lake Nakuru National Park	-	<ul style="list-style-type: none"> <li>Diverse land forms</li> <li>Open water</li> <li>Shoreline</li> <li>Springs</li> <li>Hills &amp; cliffs</li> <li>Woodland</li> <li>Rangeland</li> <li>Open grassland</li> </ul>	<ul style="list-style-type: none"> <li>Waterbirds</li> <li>Other wildlife</li> <li>Baharini Springs</li> <li>Baboon Viewpoint</li> <li>Lion's Hill Viewpoint</li> <li>Nature trails</li> <li>Camp Sites</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Pavilion</li> </ul>	-
Nakuru Municipality	-	<ul style="list-style-type: none"> <li>Municipal CBD</li> <li>Residential zone</li> <li>Industrial zone</li> </ul>	-	<ul style="list-style-type: none"> <li>Kenyatta Shopping Street</li> <li>Curio Market</li> <li>Municipal Market</li> <li>Municipal Gardens</li> <li>Railway Station</li> <li>Railway Restaurant</li> <li>Hyrax Hill Museum</li> <li>Milimani Residential area</li> </ul>	<ul style="list-style-type: none"> <li>Pedestrian crossings</li> <li>Insecurity</li> <li>Waste management</li> <li>Poor signage</li> <li>Lack of information office</li> </ul>
Menengai Crater	Menengai Hill	<ul style="list-style-type: none"> <li>Planted forest</li> </ul>	<ul style="list-style-type: none"> <li>Rift Valley observation points</li> </ul>	-	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Water supply</li> </ul>
	Crater rim & floor	<ul style="list-style-type: none"> <li>Cliffs</li> <li>Lava flows</li> <li>Ancient lake outflow</li> <li><b>Geothermal status</b></li> </ul>	<ul style="list-style-type: none"> <li>Rift Valley view point</li> <li>Rock climbing</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Curio kiosks</li> <li>Resting &amp; refreshment facility</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> <li>Risk of accidents</li> <li>Poor marketing</li> <li>Land ownership</li> </ul>
Bahati-Solai	Bahati area	<ul style="list-style-type: none"> <li>Ancient lake-bed</li> <li>Bahati fault scarp</li> <li>Indigenous forest</li> <li>Planted forest</li> <li>Farms</li> </ul>	<ul style="list-style-type: none"> <li>Ancient lake-bed</li> <li>Mountain climbing</li> <li>Forest birdlife</li> <li>River trail</li> <li>Reservoir waterbirds</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Catholic Shrine</li> <li>Cultural centres</li> <li>Farm shops</li> </ul>	<ul style="list-style-type: none"> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Lake Solai	<ul style="list-style-type: none"> <li>Fault scarp</li> <li>Solai rangeland</li> <li>Maji Matamu Stream</li> <li>Lake Solai</li> </ul>	<ul style="list-style-type: none"> <li>Lake waterbird</li> <li>Other lake attractions</li> <li>Reservoir waterbird</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Boating &amp; canoeing</li> <li>Camping</li> <li>Mountain climbing</li> <li>Adventure hiking</li> <li>Cultural villages</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>

	Kisanana area	<ul style="list-style-type: none"> <li>Pastoral rangelands</li> <li>Ancient lake outflow</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Lake Bogoria view</li> </ul>	<ul style="list-style-type: none"> <li>Adventure hiking</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Mwariki-Soysambu-Eburru	Mwariki area	<ul style="list-style-type: none"> <li>Savanna landscape</li> <li>Market centres</li> <li>Ranches</li> </ul>	<ul style="list-style-type: none"> <li>Adventure hiking</li> <li>Horse riding</li> <li>Rangeland birdlife</li> <li>Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Cultural villages</li> <li>Old railway</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Mwariki-Soysambu-Eburru	Soysambu Ranch	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Volcanic cones</li> <li>Ranching</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Other wildlife</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Horse rides</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Elementaita area	<ul style="list-style-type: none"> <li>Lake ecosystem</li> <li>Mabruk &amp; Kariandusi rivers</li> <li>Acacia woodland</li> <li>Volcanic cones</li> <li>Ranching</li> <li>Lower Paleolithic pre-historic site</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic birdlife</li> <li>Woodland birdlife</li> <li>Landscape</li> <li>Elementaita &amp; Kariandusi Warm springs</li> <li>Pleistocene lakebeds</li> <li>Gamblian caves</li> <li>River trails</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Lord Cole's Grave</li> <li>Horse rides</li> <li>Masai cultural villages</li> <li>Adventure hiking</li> <li>Kariandusi Acheulian factory site</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Ututu area	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Volcanic cones</li> <li>Pastoralism</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Other wildlife</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Old railway</li> <li>Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
	Eburru area	<ul style="list-style-type: none"> <li>Eburru Mountain</li> <li>Mountain forest</li> </ul>	<ul style="list-style-type: none"> <li>Forest birdlife</li> <li>Adventure hiking</li> <li>Landscape</li> </ul>	<ul style="list-style-type: none"> <li>Colonial history</li> <li>Steam water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Water supply</li> <li>Poor awareness</li> <li>Marketing</li> </ul>
Bagaria-Mau Narok-Njoro	Bagaria	<ul style="list-style-type: none"> <li>Savannah landscape</li> <li>Nderit river</li> <li>Forest remnants</li> </ul>	<ul style="list-style-type: none"> <li>Rangeland birdlife</li> <li>Reservoir birdlife</li> <li>Other wildlife</li> <li>River trail</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Horse rides</li> <li>Reservoir boating</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> <li>Deforestation</li> </ul>
	Mau Narok area	<ul style="list-style-type: none"> <li>Mountain landscape</li> <li>Indigenous forest</li> <li>Mountain streams</li> <li>Farms</li> </ul>	<ul style="list-style-type: none"> <li>Forest birdlife</li> <li>Reservoir birdlife</li> <li>River trails</li> <li>Cold springs</li> <li>Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Adventure hiking</li> <li>Reservoir boating</li> <li>Old church</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> <li>Deforestation</li> </ul>
	Njoro-Rongai	<ul style="list-style-type: none"> <li>Plateau landscape</li> <li>Small &amp; large scale farms</li> <li>Njoro River</li> </ul>	<ul style="list-style-type: none"> <li>River trails</li> <li>Reservoir birdlife</li> <li>Agro-ecotourism</li> </ul>	<ul style="list-style-type: none"> <li>Farm shops</li> <li>Reservoir boating</li> <li>Egerton University</li> <li>Colonial history</li> </ul>	<ul style="list-style-type: none"> <li>Poor accessibility</li> <li>Poor awareness</li> <li>Marketing</li> </ul>

**TABLE 5.1: Proposed Eco-tourism Development Projects and Activities in Lake Naukuru and Catchment by Eco-tourism Management Zones**

Eco-tourism Zone/Characteristics	Geographical Areas	Altitude/Climatic factors	Environmental features	Natural attractions	Cultural attractions	Problems/constraints
Lake Nakuru National Park	-	<ul style="list-style-type: none"> <li>• <b>Altitude</b></li> <li>• <b>Annual Rainfall</b></li> <li>• <b>Temperature average</b></li> </ul>	<ul style="list-style-type: none"> <li>• Diverse land forms</li> <li>• Open water</li> <li>• Shoreline</li> <li>• Springs</li> <li>• Hills &amp; cliffs</li> <li>• Woodland</li> <li>• Rangeland</li> <li>• Open grassland</li> </ul>	<ul style="list-style-type: none"> <li>• Waterbirds</li> <li>• Other wildlife</li> <li>• Baharini Springs</li> <li>• Baboon Viewpoint</li> <li>• Lion's Hill Viewpoint</li> <li>• Nature trails</li> <li>• Camp Sites</li> </ul>	<ul style="list-style-type: none"> <li>• Presidential Pavilion</li> </ul>	-
Nakuru Municipality	-	•	<ul style="list-style-type: none"> <li>• Municipal CBD</li> <li>• Residential zone</li> <li>• Industrial zone</li> </ul>	-	<ul style="list-style-type: none"> <li>• Kenyatta Shopping Street</li> <li>• Curio Market</li> <li>• Municipal Market</li> <li>• Municipal Gardens</li> <li>• Railway Station</li> <li>• Railway Resturant</li> <li>• Hyrax Hill Museum</li> <li>• Milimani Residential area</li> </ul>	<ul style="list-style-type: none"> <li>• Pedestrian crossings</li> <li>• Insecurity</li> <li>• Waste management</li> <li>• Poor signage</li> <li>• Lack of information office</li> </ul>
Menengai Crater	Menengai Hill	•	<ul style="list-style-type: none"> <li>• Planted forest</li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley observation points</li> </ul>	-	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Poor awareness</li> <li>• Water supply</li> </ul>
	Crater rim & floor	•	<ul style="list-style-type: none"> <li>• Cliffs</li> <li>• Lava flows</li> <li>• Ancient lake outflow</li> <li>• <b>Geothermal status</b></li> </ul>	<ul style="list-style-type: none"> <li>• Rift Valley view point</li> <li>• Rock climbing</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Curio kiosks</li> <li>• Resting &amp; refreshment facility</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> <li>• Risk of accidents</li> <li>• Poor marketing</li> <li>• Land ownership</li> </ul>
Bahati-Solai	Bahati area	•	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Bahati fault scarp</li> <li>• Indigenous forest</li> <li>• Planted forest</li> <li>• Farms</li> </ul>	<ul style="list-style-type: none"> <li>• Ancient lake-bed</li> <li>• Mountain climbing</li> <li>• Forest birdlife</li> <li>• River trail</li> <li>• Reservoir waterbirds</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Catholic Shrine</li> <li>• Cultural centres</li> <li>• Farm shops</li> </ul>	<ul style="list-style-type: none"> <li>• Poor awareness</li> <li>• Marketing</li> </ul>
	Lake Solai	•	<ul style="list-style-type: none"> <li>• Fault scarp</li> <li>• Solai rangeland</li> <li>• Maji Matamu Stream</li> <li>• Lake Solai</li> </ul>	<ul style="list-style-type: none"> <li>• Lake waterbird</li> <li>• Other lake attractions</li> <li>• Reservoir waterbird</li> <li>• Landscape</li> </ul>	<ul style="list-style-type: none"> <li>• Boating &amp; canoeing</li> <li>• Camping</li> <li>• Mountain climbing</li> <li>• Adventure hiking</li> <li>• Cultural villages</li> </ul>	<ul style="list-style-type: none"> <li>• Poor accessibility</li> <li>• Water supply</li> <li>• Poor awareness</li> <li>• Marketing</li> </ul>

**Table 5.5 Budget**

Goal/Objectives	Problems/Constraints	Business plan/Activities	Feasibility/Viability & Remarks	Assumptions	Budget in USD\$
Gazettment as a Conservation Area	<ul style="list-style-type: none"> <li>Interference from interested individuals</li> <li>Conflicts of land uses</li> <li>Land tenure systems</li> </ul>	<ul style="list-style-type: none"> <li>Field mapping</li> <li>Demercation of boundaries</li> </ul>	<ul style="list-style-type: none"> <li>High There is local support from County Council and Municipal</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders willing to participate</li> </ul>	1,000 5,000 3,000
Develop eco-tourism activities in and around the crater	<ul style="list-style-type: none"> <li>Lack of resources</li> <li>Inaccessibility – a good road</li> <li>Lack of other infrastructure eg. Water, electriciricity</li> <li>Lack of effective groups</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Mountain/rock climbing</li> <li>Nature trails/hiking around the crater</li> </ul>		<ul style="list-style-type: none"> <li>Community groups application for registration will be accepted on time.</li> <li>Community willing to participate in Eco-tourism activities.</li> <li>Communities able to identify projects</li> </ul>	2,500 7,500 5,000 10,000 2,500
Develop Ecotourism businesses – sale of handicrafts, Kissi soap stones, etc sodas and snacks,	<ul style="list-style-type: none"> <li>Lack of associations</li> </ul>	<ul style="list-style-type: none"> <li>Develop selfservice bandas</li> <li>Createion of tented camps</li> <li>Improved camping and picnic sites</li> <li>Local biunisenne</li> <li>Sliding connected to Town</li> </ul>	<ul style="list-style-type: none"> <li>Local people were encouraged to initiate a group.</li> </ul>	Stakeholders capable and willing to participate in the implementation of the strategic marketing plan.	2,500 3,500 5,000
Encourage education				EIA & EA experts available to conduct studies and train communities.	3,000 3,000 3,500
Promote biodiversity conservation and water catchment	<ul style="list-style-type: none"> <li>Lack of resources</li> <li>Lack of awareness amongst locals</li> </ul>	<ul style="list-style-type: none"> <li>Tree planting</li> </ul>	<ul style="list-style-type: none"> <li>Moderate</li> <li>Existence of ther interested parties</li> </ul>	<ul style="list-style-type: none"> <li>External mission will be available.</li> </ul>	8,000
Market Menengai for eco-tourism					<b>65,000</b>

Source: Field Inventory and Interviews: 2004