## 5. Infrastructure and Tourism Facility Requirement in Priority Tourism Areas

### 5.1. Land Use

#### 5.1.1. Assessment of Location of Tourism Zones

##### (1) Nairobi Tourism Area

###### a. Tourism Potential

Nairobi has various types of tourism products, such as wildlife, culture and history and conference and convention activities. These products are located approximately in the inner city area and the Southern parts of Nairobi. The suburban area of Nairobi has a preferable scenery. In particular, the Southern parts of Nairobi have various landscapes, such as traditional farming scape and the land escarpment of the Rift Valley. At the North-Western parts of Nairobi, where the altitudes are higher than in the inner city, there are preferable panoramic view points.

###### b. Accessibility

The transport network in Nairobi is comparatively well developed. It is possible to reach most of the tourism products within an hour. Accordingly, accessibility is not critical to designate the tourism zones.

###### c. Environmental Conservation

The Southern area of the national park is important in terms of securing wildlife migration routes to maintain the Nairobi National Park.

###### d. Present Land Use and Landscape

Land use in Nairobi can be classified roughly into three zones. They are the Northern hill zone, the urban zone and the Southern semi-arid zone. The Northern hill zone has been utilised traditionally as high productive agricultural land. The Southern zone occupies grassland and bush, which is mainly utilised for livestock and small mixed farming. It is also identified as a wildlife dispersal area, which supports the Nairobi National Park. Agricultural development, however, has started recently in this zone, and is an obstacle towards maintain wildlife migration routes.

###### e. Impacts on the Local Community

The foot area of the Ngong Hills has a small Masai village. A high class quiet residential area is partly developed in Karen town and its surrounding areas. The tourism promotion zone should be designated so as not to harm the existing Masai communities.

(2) Mt. Kenya Tourism Area

a. Tourism Potential

Since the main attractions of this area are wildlife and natural beauty, the central plain area and Mt. Kenya have tourism potential according to the tourism development strategy described in the previous section. In this area, Mt. Kenya and the savannah area have a typical scenery.

b. Accessibility

Route A2, B5 and C76 are the main access roads in this area. The tourism zones should be located so as to secure the access to these routes.

c. Environmental Conservation

Mt. Kenya, the Aberdare national parks and their surrounding areas are identified as environmentally important areas. These areas have biosphere species with sensitive ecosystems. Accordingly, tourism development must be limited. The other land is wildlife dispersal area, which is important as wildlife migration route to/from the national parks. Appropriate measures must be taken into consideration in order to maintain this wildlife migration routes.

d. Present Land Use and Landscape

This area is classified into four land uses, such as semi-nomadic pastoralism land, ranching land, small mixed farming land and forest land. The forest land, semi-nomadic pastoralism land and ranching land become important areas regarding wildlife dispersal, because they contribute significantly to maintain wildlife migration routes. The small mixed farming land is spread over at the foot area of the national parks. It has been observed recently, that ranching land is partly converted to intensive agricultural land, particularly in the area along route A2 and B5. It fails to narrow the wildlife migration route.

e. Impacts on the Local Community

Small villages are settled at the foot area of Mt. Kenya and the Aberdare national parks. The tourism zones should be developed so as to keep a certain distance from the existing villages.

### 5.1.2. Designation of the Zones

Based on the above assessment, tourism zones, tourism promotion zones, tourism development control zones and local reserve zones are proposed as follows.

### (1) Nairobi Tourism Area

#### a. Tourism Zone and Tourism Promotion Zone

The following zones are proposed to be designated as the tourism promotion zone. Nairobi inner city area is to be designated for promoting city resort tourism and the others are to be designated as new tourism promotion zones in the suburban area.

- Nairobi inner city area
- South Limuru area
- Karen town area
- Ngong area, and
- Ngong Hills.

#### b. Tourism Development Control Zone

In the Nairobi Tourism Area, the tourism development control zone may not be necessary to be designated.

#### c. Local Reserve Zone

To maintain wildlife migration routes, the Southern area from Nairobi National Park is designated as the local reserve zone. These zones are indicated in Figure 2. 4.

### (2) Mt. Kenya Tourism Area

#### a. Tourism Zone and Tourism Promotion Zone

The following tourism zones are proposed. The central plain area is proposed to be designated for promoting private ranch type tourism. Naro Moru and Mt. Kenya are designated for providing the core for mountain resort tourism.

- Central plain area
- Naro Moru town, and
- Half way up to Mt. Kenya National Park, around the park gate.

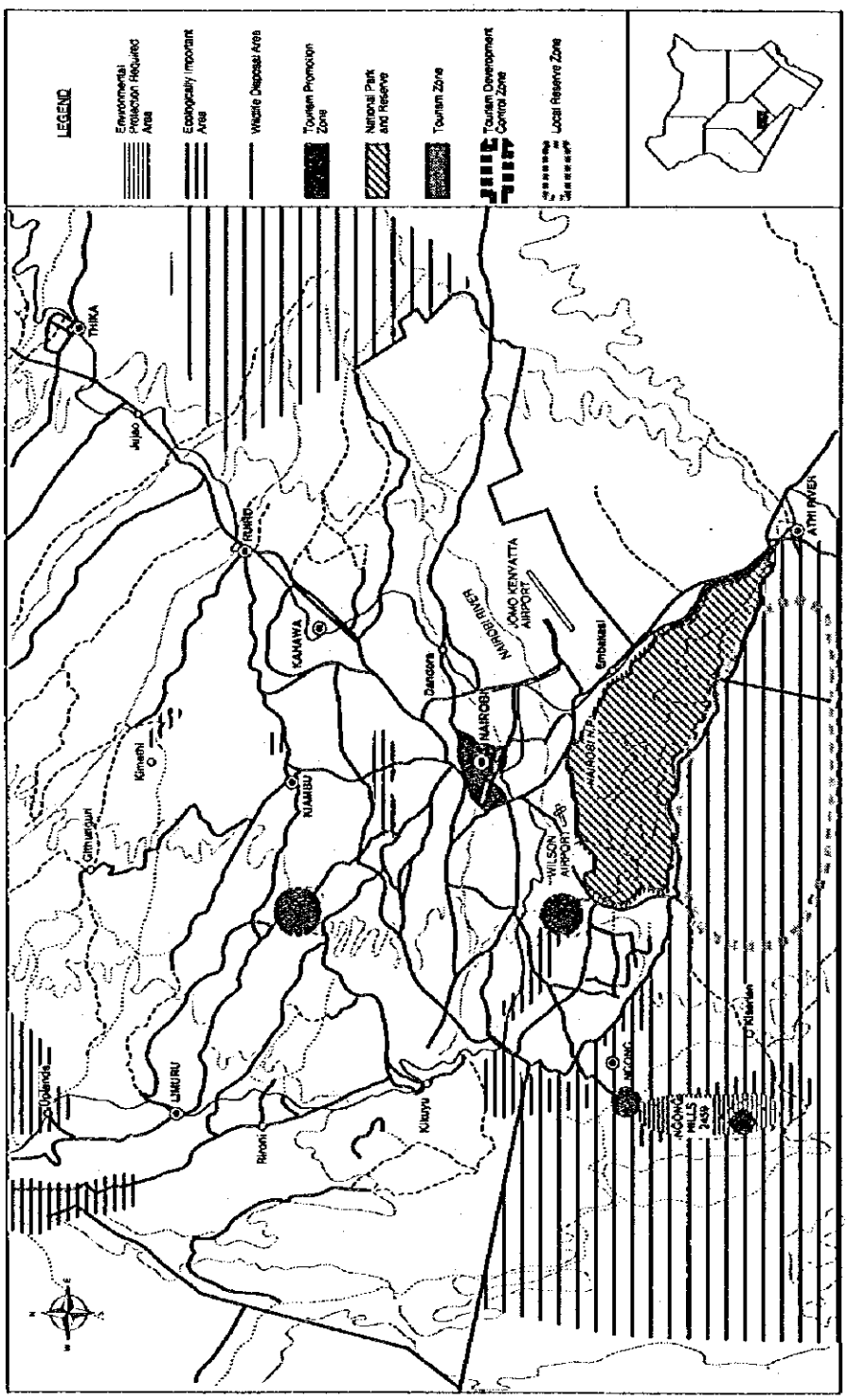
#### b. Tourism Development Control Zone

The surrounding areas of Aberdare National Park are proposed as the tourism development control zone.

#### c. Local Reserve Zone

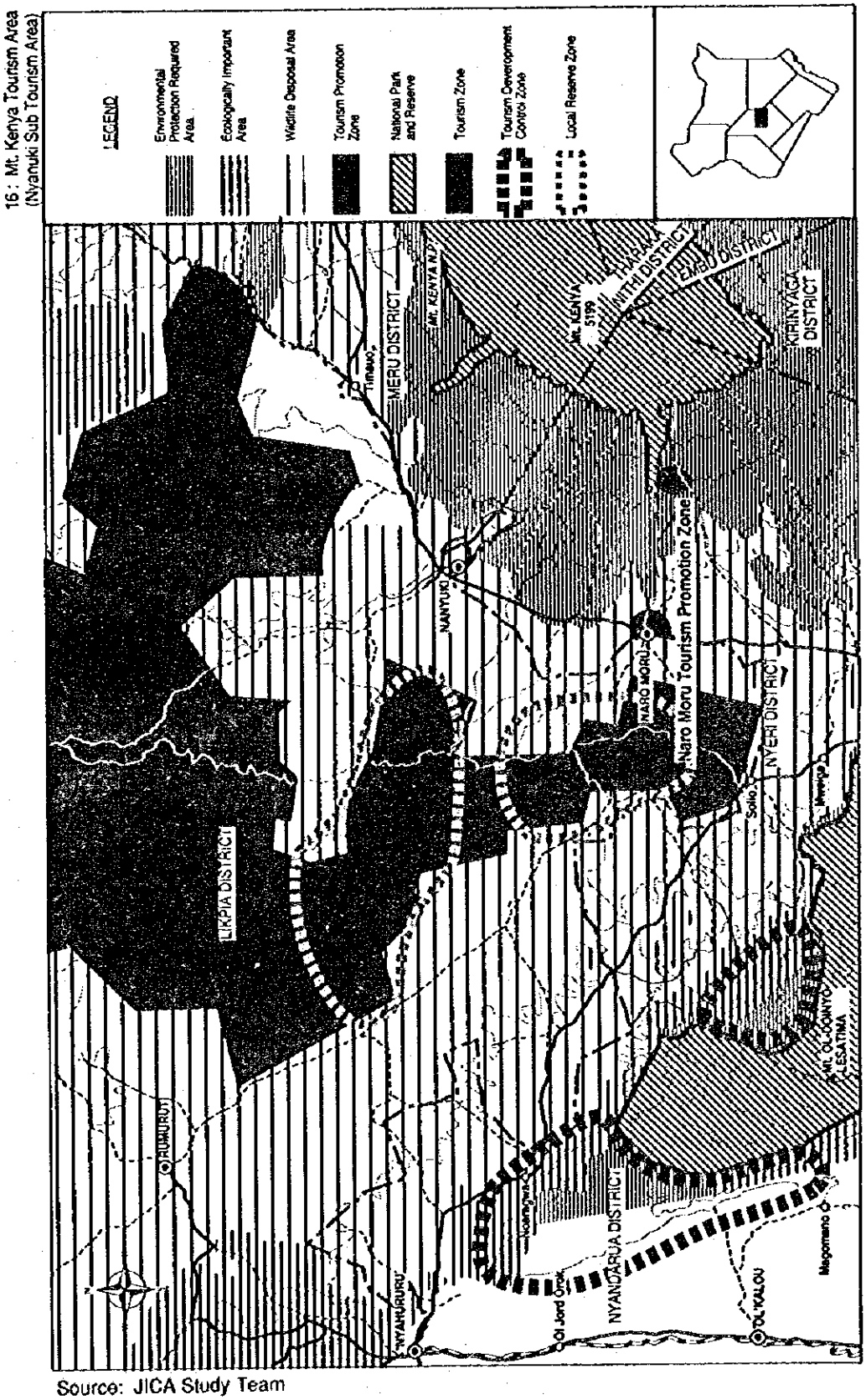
To utilise wildlife and maintain wildlife migration routes, the central plain area is proposed to be designated as the local reserve area. These zones are indicated in Figure 2. 5.

**Figure 2. 4 Tourism Zones of Nairobi Tourism Area**




Source: JICA Study Team

## Figure 2.5 Tourism Zones of Mt. Kenya Tourism Area




Source: JICA Study Team

### 5.1.3. Implications for the Development of Tourism Facilities and Infrastructure

In accordance with the environmental characteristics of the proposed tourism zones and tourism promotion zones, the following special attention should be paid for developing tourism facilities and infrastructure.

**(1) Laikipia Tourism Zone**

Since this area is an important wildlife dispersal area, special attention on maintaining wildlife migration routes should be paid. For this end, large scale encasement with a fence should not be done.

**(2) Mt. Kenya Tourism Promotion Zone**

Mt. Kenya is an important water reserve area for the surrounding areas. Maintaining forests and rivers is indispensable to save the water catchment area. The zonal development here should pay enough attention to waste water treatment and garbage disposal systems. For this end, building codes and environmental standards to be applied here should be carefully determined.

**(3) Ngong Hill Tourism Promotion Zone**

The Ngong Hills have a semi-arid vegetation with a sensitive balance of the ecosystem. For the development, the existing vegetation should be carefully protected and soil erosion measures should be taken.

**(4) Ngong Tourism Promotion Area**

Ngong town is a suburban centre in Southern Nairobi, in which Masai people are dominant. Environmental measures, such as garbage disposal and sewerage treatment will be important. Attention on the impact on the social environment should be taken into consideration.

## 5.2. Tourist Facility

### 5.2.1. Tourism Products related Facilities

#### (1) Tourism Products in Nairobi and Mt. Kenya Tourism Areas

Based on the previous Table 2. 9, the tourism products for Nairobi Tourism Area and Mt. Kenya Tourism Area are summarised in Table 2. 11.

#### (2) Tourism Products related Facilities in Nairobi and Mt. Kenya Tourism Areas

Based on the previousTable 2. 11, the tourism products related facilities to be developed for Nairobi Tourism Area and Mt. Kenya Tourism Area are summarised in Table 2. 12.

## Table 2. 11 Formation of Programmes and Projects of Tourism Products in Nairobi and Mt. Kenya Tourism Areas

| No. | Products | Description | Location | Resources to be Utilised | Necessary Programme and Project: Institutional/ Promotional Programmes | Necessary Programme and Project: Infra. & Facility Project |
|---|---|---|---|---|---|---|
| Central Tourism Region | | | | | | |
| CE-HP-1 | Conservation of Colonial Architectures | Conserving old architecture and landscape in the suburban area of Nairobi to utilise them for a tourism attraction | Nairobi | Existing Old Buildings at Suburban area of Nairobi | Building Conservation Programme | |
| CE-MU-2 | Improvement of National Museum | Improving Nairobi National Museum including attaching tourist supporting facilities | Nairobi | Nairobi national Museum | | Museum Improvement, Visitor Facilities Development |
| CE-MU-3 | Improvement of Science Museum | Improving Nairobi Science Museum including attaching tourist supporting facilities | Nairobi | Nairobi Science Museum | | Museum Improvement, Visitor Facilities Development |
| CE-MU-4 | Improvement of Nairobi Botanical Garden | Improving Nairobi botanical Garden including attaching tourist supporting facilities | Nairobi | Nairobi Botanical Garden | | Museum Improvement, Visitor Facilities Development |
| CE-MU-5 | Improvement of Railway Museum | Improving Railway Museum including attaching tourist supporting facilities | Nairobi | Railway Museum | | Museum Improvement, Visitor Facilities Development |
| CE-MU-6 | Improvement of Karen Blixen Museum | Improving Karen Blixen Museum including attaching tourist supporting facilities | Nairobi | Karen Blixen Museum | | Museum Improvement, Visitor Facilities Development |
| CE-MU-7 | Development of Kikuyu Museum | Improving Nairobi National Museum including attaching tourist supporting facilities | Mt. Kenya (Naro Moru) | Kikuyu culture and traditinal tools and equipment | | Museum Improvement, Visitor Facilities Development |
| CE-MU-9 | Improvement of Makonde Arts | Promoting new souvenir by improving variety and techniques of Makonde arts | Nairobi (Machakos) | traditional handicraft artists | Art improvement Programme, Training Programme | Kamba Carving Museum Development Project |
| CE-NP-1 | Improvement of Nairobi National Park | Providing visitor supporting facilities | Nairobi | Nairobi National Park | Pricing Programme | Visitor Amenity Facilities |
| CE-NP-12 | Improvement of Mt. Kenya National Park | Providing visitor supporting facilities | Mt. Kenya | Mt. Kenya | Pricing Programme | Visitor Amenity Facilities |
| CE-NP-14 | Promotion of Tourism Use of Private Ranches | Promoting tourism use of existing private ranches | Aberdare, West Samburu, Mt. Kenya | Private Ranch, Wildlife | Land Use Control Programme (Introduction of Local Reserve Scheme) | |
| CE-WF-6 | Improvement of View Point at Rift Valley | Creating appropriate atmosphere to tourists and providing information facilities | Nairobi | Scenery of Rift Valley | | Tourist Wayside Facility Area Development Project |
| CE-AT-1 | Introduce of Rail Safari | Promoting tourism use of railway by introducing luxurious trains and special diagram | Mombasa-Nairobi-Kisumu | Railway, Rail Station, scenery, NP & NR | Tourism Train Introduction Programme | Introduction of luxurious and special design coaches, Railway Track Improvement Project |
| CE-AT-2 | Improvement of Tinga-Tinga Art | Promoting new souvenir by improving existing Tinga Tinga Arts | Not specified | Tinga Tinga arts | Art Improvement Programme, Training Programme | |
| CE-AT-3 | Development of T Shirts | Promoting new souvenir by improving variety of size and design of T shirts | Not specified | | Art Improvement Programme, Training Programme | |
| CE-BT-1 | improvement of Kenyatta International Conference Centre | activating international conference center by improving facilities and promotion activities | Nairobi | International Conference Centre | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development prograde | KCC improvement Project |
| CE-BT-2 | improvement of Tourist Amenity at Nairobi City | Creating appropriate atmosphere to tourists and providing adequate information facilities | Nairobi | Nairobi City | | Beautification |
| CE-BT-5 | Creation of "Sense of Arrival" | Creating appropriate atmosphere to tourists by improving services' hospitality/ beautification | Nairobi | Nairobi International Airport | Hospitality improvement Programme | Tourist Sign Board Provision Project Beautification of parks |
| CE-FU-1 | Utilisation of Game Meat | promoting tourism use of wildlife's meat, especially for local use | Not specified | Wildlife | Local Government Wildlife Management Introduction Programme, New Cuisine Development Programme, Education Programme, Goods Distribution improvement Programme | Cold Storage, Training Facilities Development |
| CE-FU-2 | Utilisation of Fresh Water Fish | Improving cuisine of fresh water fish and promoting it | Not specified | fresh water fish | Farmers Group's Tourism Participation Programme, New Cuisine Development Programme, Education Programme, Goods Distribution Improvement Programme | Cold Storage Training Facilities |
| CE-IN-1 | Creation of Nairobi Urban Resort | Promoting long-term stay with sports facilities | Nairobi | Tourism Products, Scenery, Sports | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development prograde | Infrastructure Provision Projects for Tourism Promotion Zones |
| CE-IN-4 | Development of Mt. Kenya Gateway Resort | Developing a climbing and trekking base | Mt. Kenya | Mt. Kenya, trekking and climbing | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development prograde | Infrastructure Provision Projects for Tourism Promotion Zones |

Note: "Pricing Programme" means that price differentiation among the national parks and reserves. For this end, further study will be necessary.

Source: JICA Study Team

## Table 2. 12 Tourism Products related Facilities in Nairobi and Mt. Kenya Tourism Areas (1)

| No. | Products | Infra. & Facility Project | Major Facilities | Quantity | Unit Cost (,000 KS) | Cost (,000 KS) | Phasing Short (~ 2000) | Phasing Medium (2000-2005) | Phasing Long (2005-2010) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| **Central Tourism Region** | | | | | | | | | | |
| CE-MU-2 | Improvement of National Museum | Museum Improvement | Improvement of existing exibition and new exibition rooms | 1 | 77,638 | 77,638 | 77,638 | | | Museum(Large)(Improvement) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 300 | 300 | 300 | | | Visitor Facility (Large)(Construction) |
| CE-MU-3 | Improvement of Science Museum | Museum Improvement | New exibition rooms, Information centre, Library, Office, Car parking | 1 | 36,125 | 36,125 | | 36,125 | | Museum (Large)(Construction) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 300 | 300 | | 300 | | Visitor Facility (Large)(Construction) |
| CE-MU-4 | Improvement of Nairobi Botanical Garden | Museum Improvement | Visitor's information office, Cultural/Natural information centre | 1 | 3,750 | 3,750 | | | 3,750 | Museum (Small)(Construction) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 150 | 150 | | | 150 | Visitor Facility(Small) |
| CE-MU-5 | Improvement of Railway Museum | Museum Improvement | Improvement of existing exibition hall and materials, and expansion | 1 | 5,250 | 5,250 | | 5,250 | | Museum (Medium)(Improvement) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 225 | 225 | | 225 | | Visitor Facility (Medium)(Construction) |
| CE-MU-6 | Improvement of Karen Blixen Museum | Museum Improvement | Improvement of existing exibition hall and materials, and expansion | 1 | 1,875 | 1,875 | | | 1,875 | Museum (Small)(Improvement) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 150 | 150 | | | 150 | Visitor Facility(Small) |
| CE-MU-7 | Development of Kikuyu Museum | Museum Improvement | Visitor's information office, Cultural/Natural information centre | 1 | 3,750 | 3,750 | | | 3,750 | Museum (Small)(Construction) |
| | | Visitor Facilities Development | Car parking, Cafeteria, Souvenir shop, Toilet, Rest facilities | 1 | 150 | 150 | | | 150 | Visitor Facility (Small)(Construction) |
| CE-MU-9 | Improvement of Makonde Arts | Kamba Carving Museum Development Project | Visitor's information office, Cultural/Natural information centre | 1 | 3,750 | 3,750 | | 3,750 | | Museum (Small)(Construction) |
| CE-NP-1 | Improvement of Nairobi National Park | Visitor Amenity Facilities | Access road, Car parking, View house, Toilet, Rest facilities | 3 | 50 | 150 | 150 | | | Visitor Amenity Facility |
| CE-NP-12 | Improvement of Mt. Kenya National Park | Visitor Amenity Facilities | Access road, Car parking, View house, Toilet, Rest facilities | 5 | 50 | 250 | 250 | | | Visitor Amenity Facility |
| CE-AT-1 | Introduce of Rail Safari | Introduction of luxurious and special design coaches | luxurious and special design coaches | 1 | 1,100 | 1,100 | 1,100 | | | (Chapter 3.) |
| CE-BT-1 | Improvement of Kenyatta International Conference Centre | KCC Improvement Project | Car parking, Public facilities, Display & exhibits, Administration & support | 1 | 18,063 | 18,063 | | 18,063 | | Museum(Large)(Improvement) |
| CE-BT-2 | Improvement of Tourist Amenity at Nairobi City | Beautification | Sign board, Benches, Rubbish bin | 1 | 375 | 375 | 375 | | | Beautification(Big City) |
| | | Town Center Redevelopment Projects | Reception/Information, Mini Museum, Cafeteria, Souvenir shop, Toilet, First aid room, Official use | 1 | 225 | 225 | 225 | | | Tourist Centre |
| CE-FU-1 | Utilisation of Game Meat | Cold Storage | Car parking/Yard, Storage, Refrigerator | 1 | 125 | 125 | 125 | | | Cold Storage(Small) |
| | | Training Facilities Development | Education, Administration & support | 1 | 125 | 125 | 125 | | | Training Facility |

Source: JICA Study Team

**Table 2. 12 Tourism Products related Facilities in Nairobi and Mt. Kenya Tourism Areas (2)**

| No. | Products | Infra. & Facility Project | Major Facilities | Quantity | Unit Cost (,000 KS) | Cost (,000 KS) | Phasing | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Short (- 2000) | Medium (2000-2005) | Long (2005-2010) | |
| | | | Historical Park | | | 0 | 0 | 0 | 0 | |
| | | | Museum | | | 133,413 | 77,938 | 45,650 | 9,825 | |
| | | | Natural Park | | | 400 | 400 | 0 | 0 | |
| | | | Wayside Facility | | | 0 | 0 | 0 | 0 | |
| | | | Visitor Amenity Facility | | | 0 | 0 | 0 | 0 | |
| | | | Attraction | | | 1,100 | 1,100 | 0 | 0 | |
| | | | Sports | | | 0 | 0 | 0 | 0 | |
| | | | Beatification | | | 18,663 | 600 | 18,063 | 0 | |
| | | | Food Utility | | | 250 | 250 | 0 | 0 | |
| | | | Total Cost of Promotion Zone in Central Tourism Region | | | 153,825 | 80,288 | 63,713 | 9,825 | |

Source: JICA Study Team

## 5.2.2. Accommodation Facilities

### (1) Distribution of Accommodation Facilities in Nairobi and Mt. Kenya Tourism Areas

Based on the famework presented in section 3 of this chapter, the required number of rooms are determined as shown in Table 2. 13.

**Table 2. 13 Increase Number of Accommodation Unit (Hotel/ Lodge) and Estimated Cost**

| Tourism Area | Tourism Sub-Area | | 2000 Increase No of Rms | % | 2000 Estimated Cost(mil £) | 2000-2005 Increase No of Rms | % | 2000-2005 Estimated Cost(mil £) | 2000-2010 Increase No of Rms | % | 2000-2010 Estimated Cost(mil £) | Total Increase No of Rms | % | Total Estimated Cost(mil £) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nairobi | Inner City | high | 262 | 32 | 73.6 | 408 | 31 | 114.8 | 246 | 31 | 69.3 | 916 | 32 | 257.7 |
| | | med | 303 | 36 | 45.5 | 485 | 37 | 72.7 | 298 | 37 | 44.8 | 1,086 | 37 | 162.9 |
| | | low | 244 | 30 | 14.6 | 407 | 31 | 24.4 | 255 | 32 | 15.3 | 906 | 31 | 54.4 |
| | | total | 808 | | 133.7 | 1,300 | | 212.0 | 800 | | 129.4 | 2,908 | | 475.0 |
| | Other Area | high | 613 | 32 | 172.4 | 534 | 31 | 150.1 | 277 | 31 | 78.0 | 1,424 | 32 | 400.5 |
| | | med | 710 | 38 | 106.4 | 634 | 37 | 95.1 | 336 | 37 | 50.4 | 1,679 | 37 | 251.9 |
| | | low | 571 | 30 | 34.3 | 532 | 31 | 31.9 | 287 | 32 | 17.2 | 1,391 | 31 | 83.4 |
| | | total | 1,892 | | 313.1 | 1,700 | | 277.2 | 900 | | 145.5 | 4,492 | | 735.8 |
| | Total | high | 875 | 32 | 246.0 | 942 | 31 | 264.9 | 524 | 31 | 147.3 | 2,340 | 32 | 658.2 |
| | | med | 1,013 | 38 | 151.9 | 1,119 | 37 | 167.8 | 634 | 37 | 95.1 | 2,766 | 37 | 414.8 |
| | | low | 815 | 30 | 48.9 | 939 | 31 | 56.3 | 542 | 32 | 32.5 | 2,297 | 31 | 137.8 |
| | | total | 2,700 | | 446.8 | 3,000 | | 489.1 | 1,700 | | 274.9 | 7,400 | | 1,210.9 |
| Mt. Kenya | Nanyuki | high | 33 | 32 | 9.3 | 97 | 32 | 27.3 | 131 | 33 | 36.9 | 261 | 32 | 73.4 |
| | | med | 39 | 38 | 5.9 | 113 | 38 | 17.0 | 151 | 38 | 22.6 | 303 | 38 | 45.5 |
| | | low | 32 | 31 | 1.9 | 90 | 30 | 5.4 | 118 | 30 | 7.1 | 240 | 30 | 14.4 |
| | | total | 104 | | 17.1 | 300 | | 49.6 | 400 | | 66.6 | 804 | | 133.3 |

Source: JICA Study Team

### (2) Cost Estimates

Unit cost are calculated in accordance with the classification of the accommodation facilities and size of rooms including a certain portion of common space. These indicators are assumed, based on the result of the facility survey undertaken by the study team and interviews with hotels and local architects. The unit cost is assumed to include all furnishings and equipment.

**Table 2. 14 Assumptions of Size of Room by Class and Unit Cost**

| | Average Floor Area per Room (sq.m) | Unit Cost (K£/sq.m) |
|---|---|---|
| High Class | 125 | 2,250 |
| Medium Class | 100 | 1,500 |
| Low Class | 60 | 1,000 |

Source: JICA Study Team

Based on the above assumptions, total cost for accommodation facilities in Nairobi and Mt. Kenya Tourism Areas are calculated as shown in Table 2. 13. Total cost by 2010 is estimated to be in the order of magnitude of approximately 1,211 million K£ and 133.3 million K£ for Nairobi Tourism Area and Mt. Kenya Tourism Area, respectively. The increase in number of accommodation units categorised as homestay and tent is estimaed as shown in Table 2. 15.

Table 2. 15 Increase Number of Unit (Homestay/ Tent)

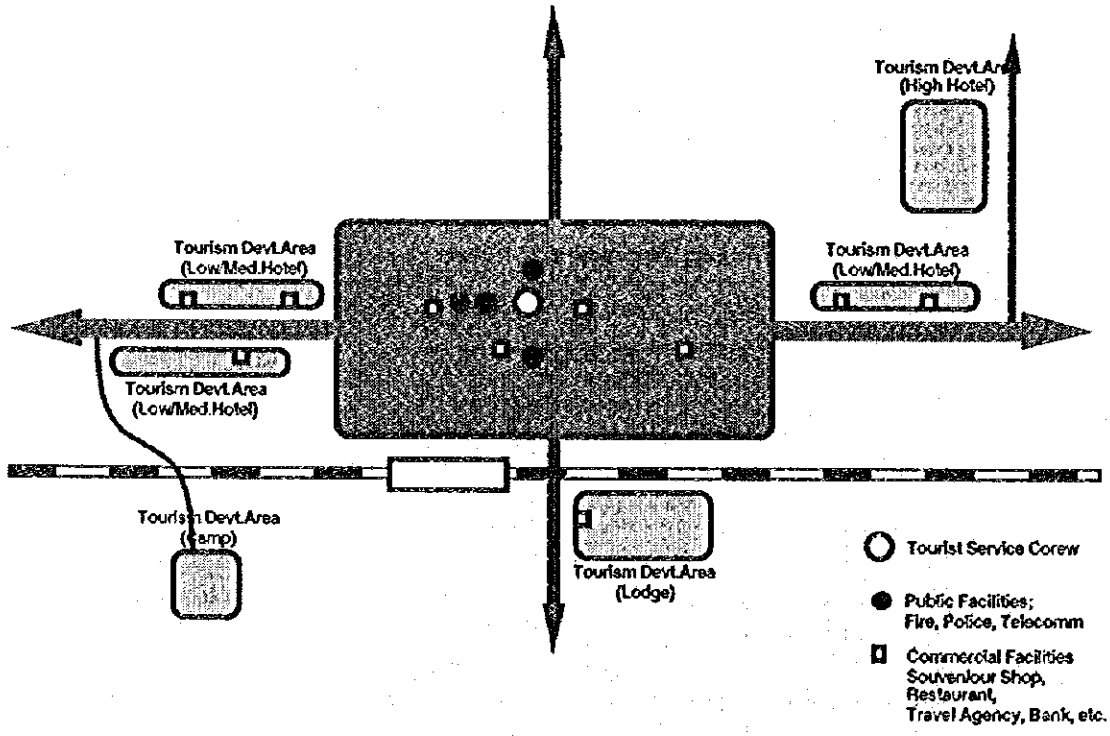
| Tourism Area | Tourism Sub-Area | -2000 Increase No. of Units | 2000-2005 Increase No. of Units | 2005-2010 Increase No. of Units | Total Increase No. of Units |
|---|---|---|---|---|---|
| Nairobi | Inner City* | — | — | 400 | 400 |
| | Other Areas | 100 | 100 | 550 | 750 |
| | Total | 0 | 200 | 950 | 1,150 |
| Mt.Kenya | Nanyuki | 50 | 100 | 0 | 150 |
| Total | | 50 | 300 | 950 | 1,300 |

Source: JICA Study Team

### (3) Development Image of Tourism Promotion Zone

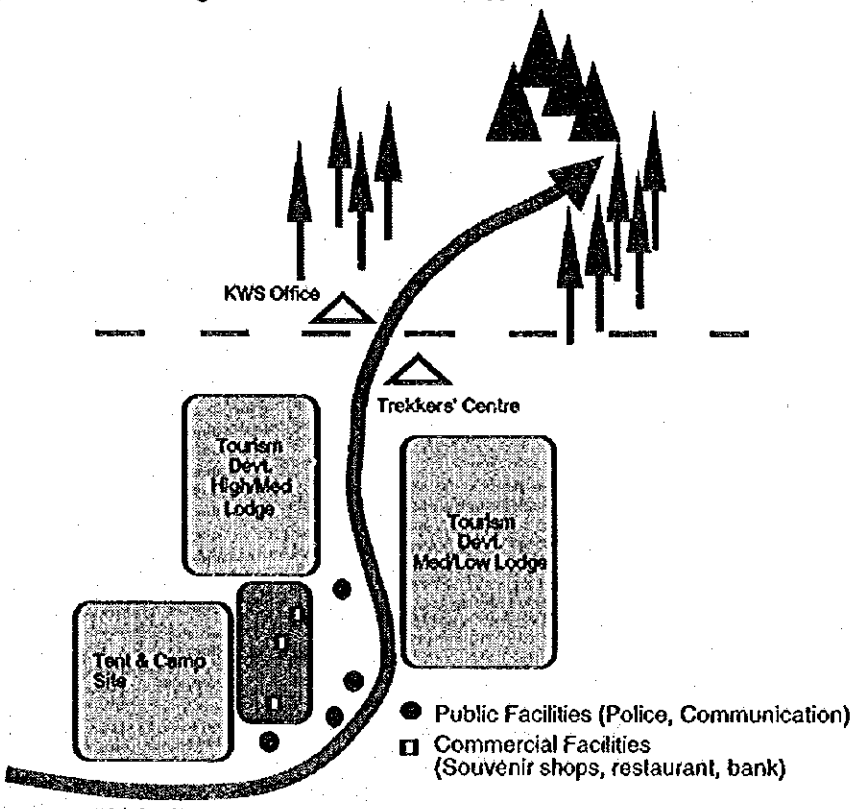
In the Nairobi and Mt. Kenya Tourism Areas, several tourism promotion zones are proposed. These zones are expected to perform as a tourism core or base of accommodation facilities. Detailed site plans for these zones should be made in the further stage of the tourism development. However, a preliminary image of the sites are elaborated on to present typical development images of town resort type and mountain resort type of the tourism promotion zones.

Figure 2. 6 Image of Town Resort Type Tourism Promotion Zone




Source: JICA Study Team

Figure 2. 7 Image of Mountain Resort Type Tourism Promotion Zone




Source: JICA Study Team

### 5.2.3. Tourist Service Facilities in Nairobi and Mt. Kenya Tourism Areas

The following tourist service facilities are proposed in the Nairobi and Mt. Kenya Tourism Areas. In the Nairobi Tourism Area, approximately 1.8 million K£ are required for developing the tourist service facilities. Approximately 0.15 million K£ are required for the Mt. Kenya Tourism Area.

Table 2. 16 Proposed Tourist Service Facilities in Nairobi Tourism Area

| | Number of Projects (places) | Location | Cost (Thousand K£) |
|---|---|---|---|
| Visitor Facilities Development Project | 5 | Nairobi National Museum<br>Science Museum<br>Nairobi Botanical Garden<br>Railway Museum<br>Karen Bulixen Museum | 1,125 |
| Visitor Amenity Facilities Project | 1 | Nairobi NP | 150 |
| Tourist Centre Project | 0 | | 0 |
| Tourist Wayside Facility Area Development Project | 0 | | 0 |
| City Beautification Project | | Nairobi | 525 |
| Total | | | 1,800 |

Note: All costs have been already included in Table 2. 11.
Visitor facilities Development Projects for new museum are excluded.

Source: JICA Study Team

Table 2. 17 Proposed Tourist Service Facilities in Mt. Kenya Tourism Area

| | Number of Projects (places) | Location | Cost (Thousand K£) |
|---|---|---|---|
| Visitor Facilities Development Project | 0 | | 0 |
| Visitor Amenity Facilities Project | 1 | Mt. Kenya NP | 150 |
| Tourist Centre Project | 0 | | 0 |
| Tourist Wayside Facility Area Development Project | 0 | | 0 |
| City Beautification Project | 0 | | 0 |
| Total | | | 150 |

Note: All costs have been already included in Table 2.11.
Visitor facilities Development Projects for new museum are excluded.
Source: JICA Study Team

## 5.3. Transport

### 5.3.1. Roads

In the Southern part of the Central Tourism Region including Nairobi, Nakuru and Thika, in which the population and industrial activities are concentrated, the road density is higher and the roads are comparatively developed in comparison with the other tourism regions. However, the deterioration of road surfaces at many sections is remarkable, because of insufficient maintenance. In the Northern area, which is a semi-arid area with low population density, the road network development is behind. In particular, the development of access roads from the arterial roads to the national parks and reserves in this region is insufficient.

Taking the existing road conditions and the above spatial tourism structure base on the planning directions in the Central Tourism Region into account, the following items have to be considered as basic policy of road development.

#### (1) Improvement of Arterial Trunk Roads

Improvement of such arterial trunk roads as A104, A109 and A2 is vital in this tourism region not only from tourism development aspects, but also from a general traffic operations point of view. This region is a pivotal administrative area in the whole country of Kenya, on the roads of which the most heavy traffic volumes can be observed. Hence, improvement of the trunk roads would not only relief traffic congestions, but would also ensure a high traffic mobility for tourism traffic.

#### (2) Strengthening Circular Routes

There is no doubt that Nairobi City has been considered as the most crucial tourism base for international tourists. This indicates that

circulating routes between Nairobi City and surrounding tourism resources become one of the key points to enhance tourism promotion. In this respect, providing alternative routes to the current A2 route connecting Nairobi City to such national reserves as Samburu National Reserve, Shaba National Reserve, and Buffalo National Reserve located at the Northern area in Nairobi, is important. Improvement of C77, C78 and C79 is desirable from these points of view.

**(3) Improving Access Routes to Tourism Resources**

The existing roads are comparatively well provided to some extent. In particular major arterial roads are mostly paved. However, it can be seen that ends of access roads to National Parks and Reserves are connected by earth roads with a rather deteriorated condition. It is sufficient to improve those conditions for tourism promotion and development in order to revive the tourism resources in this region. In this view the access road from Naro Moru city to the entrance of Mount Kenya National Park (E 606) has to be upgraded to a bitumen road with standard cross section.

**(4) Consideration for the Environmental Conservation**

In case of road improvement much attention has to be paid so as not to deteriorate the current environmental conditions, especially in the vicinity area of National Parks and Reserves.

**(5) Development of the Wayside facilities Area**

Tourism cores or major tourist spots are located along the major tour routes in this tourism region, such as Lake Elementeita (A104), Salama town (A109) Karatina town (A2) Meru city (B6) and Rimoni (B3). Accordingly, these roads are to be improved from the tourism development point of view.

Additional road development projects from the viewpoint of tourism development, that is in addition to the projects proposed in "A Road Network Development Master Plan Study" are the following routes :

- Improvement (upgrading from earth to gravel roads) of route C78, C79 and D370
- Construction (paved road between Margarit and Lake Bogoria N.R)/ Construction (paved road between Lake Bogoria N.R and Solai ) on Margarit - Lake Bogoria N.R - Solai route, and
- Construction/Improvement of access routes to national parks and reserves.

### 5.3.2. Railways

The Kenyan Railways are not fully utilised in terms of tourism, because the railway track, cars and signal system are too old. In this study, the introduction of "Train Safaris" is proposed as one of the practical uses of the Kenyan Railways in the field of tourism. For the railway development the following is proposed :

- Speed up improvement of the railway track on the Nairobi-Mombasa (540 km), Nairobi-Eldoret-Kitale (425 km) and Nairobi-Nanyuki (230 km) lines. The target of travel time improvement is :

| | |
|---|---|
| Nairobi-Mombasa line | 11 hrs (13 hrs at present) |
| Nairobi-Eldoret-Kitale line | 11 hrs (12 hrs at present) |
| Nairobi-Nanyuki line | 6 hrs (7 hrs at present) |

- Improvement of the first class coaches and buffet cars for the composition of a luxury train (5-first class coaches and 4-buffet cars)
- Daytime operations of the luxury trains as the tourists can enjoy the scenery along the railways. For example, the time schedule is as follows :

| | |
|---|---|
| Departure time at Nairobi 10:00 | Arrival time at Mombasa 21:00 (including lunch and supper) |
| Departure time at Nairobi 10:00 | Arrival time at Kitale 21:00 (including lunch and supper) |
| Departure time at Nairobi 9:00 | Arrival time at Nanyuki 15:00 (including lunch). |

### 5.3.3. Airports

The majority of international scheduled flights from and to Kenya are taking off and landing at Jomo Kenyatta International Airport (JKIA) in Nairobi. Then there are the domestic scheduled flights for Mombasa, Kisumu and Malindi from and to JKIA.

There are the scheduled flights for the major tourism destinations by small plane from and to Wilson Airport in Nairobi. The Wilson Airport is the base of the small planes for chartered flights and private aircraft.

Taking the increase of the future air passenger demand into consideration, the airports will have to be developed as follows :

- Beautification of the terminal building as the Kenyan gateway and strengthening the maintenance of other airport facilities at JKIA
- Strengthening maintenance of the runway at Wilson Airport, and
- Strengthening maintenance of the airstrips at Nyeri and Nanyuki.

### 5.3.4. Project Cost Estimations

#### (1) Estimated Unit Costs

**a. Roads**

Estimated unit costs (1994 price base) for road works are based on "A Road Network Development Master Plan Study". They are as follows :

- Reconstruction - 0.45 million K£/Km
- Upgrading from gravel to surface dressing paved roads - 0.77 million K£/Km, and
- Upgrading from earth to gravel roads - 0.12 million K£/Km.

Estimated unit cost (1994 price base) for access road improvement to national parks and reserves are based on "Policy Framework and Development Programme, 1991-96, Annex 9" (KWS). They are as follows :

- New tarmac roads 3.32 million K£/Km
- Resurfaced tarmac roads 0.31 million K£/Km
- New gravel roads 0.83 million K£/Km
- Rehabilitation gravel roads 0.51 million K£/Km
- Reconstruction gravel roads 0.37 million K£/Km
- Regrade existing roads 0.11 million K£/Km, and
- New construction earth roads 0.45 million K£/Km.

**b. Railways**

Estimated unit costs (1994 price base) for railway track improvement (screening and re-ballasting, re-railing, re-sleepering) and car improvement are based on "Kenya Railway Corporation Annual Report, 1991-1992". They are as follows :

- Railway track improvement 0.32 million K£/Km, and
- Car improvement 0.06 million K£/Car.

### (2) Project Cost

Table 2. 18 shows the project costs based on the above estimated unit costs and the expenditure schedule from the viewpoint of tourism development in the Central Tourism Region.

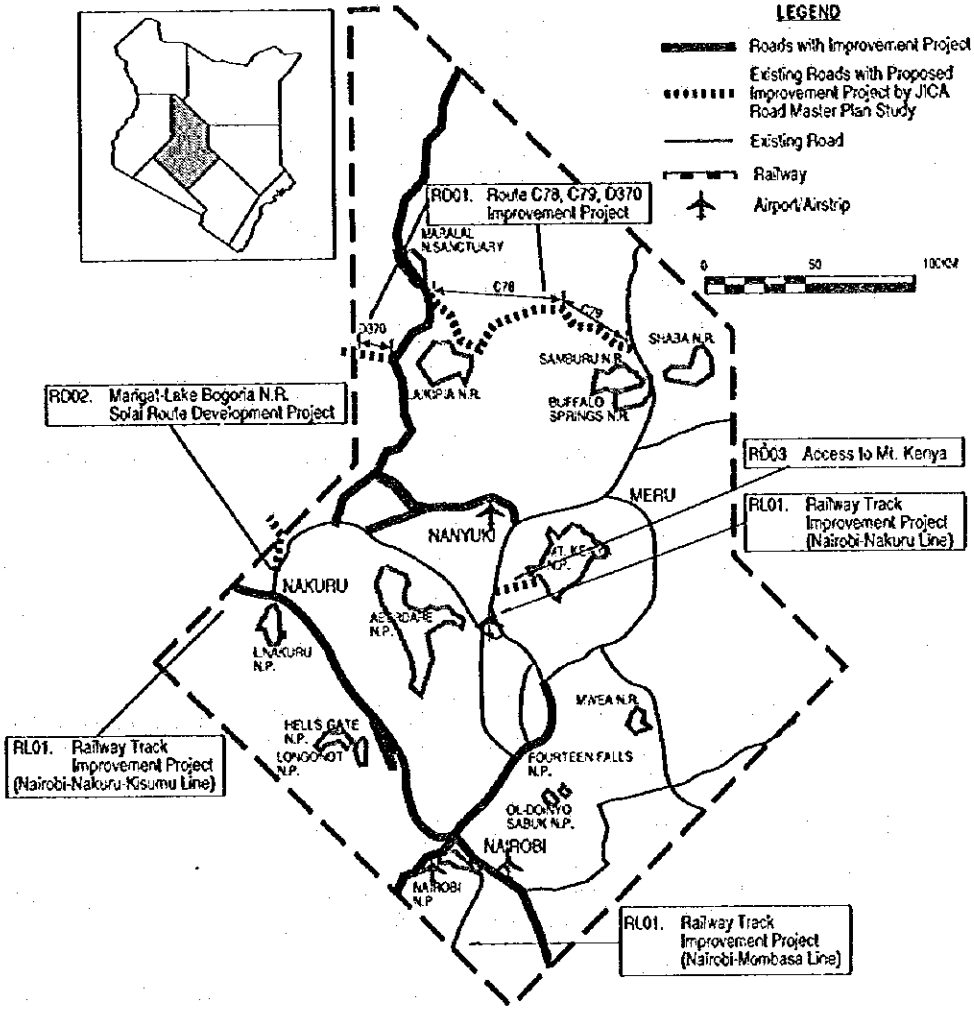
**Table 2. 18 Project Costs and Expenditure Schedule**

| | Project Name | Quality (Km) | Cost (Million K£) | Expenditure Schedule -2000 | -2005 | (milion K£) -2010 |
|---|---|---|---|---|---|---|
| RD 01 | Route C78, C79, D370 | 148.7 | 14.75 | | 14.75 | |
| RD 02 | Marigat-Lake Baringo NR-Solai Route E447 | 30 | 19.25 | | 19.25 | |
| RD 03 | Access to Mt. Elgón Tourist Promotion Zone | 15 | 1.25 | 1.25 | | |
| | Sub Total | | 35.25 | 1.25 | 34 | 0 |
| RL. 01 | Railway Track | 1,195 | 317 | 105.6 | 105.6 | 105.8 |
| RL. 02 | Car | 18 Cars | 1.0 | 1.0 | | |
| | Sub Total | | 318 | 106.6 | 105.6 | 105.8 |
| | Total | | 353.25 | 107.85 | 139.6 | 105.8 |

Note : * Nairobi-Mombasa line 540 Km, Nairobi-Nakuru-Kisumu line 405 Km, Nairobi-Nanyuki line 230 Km
** 10 first class coaches and 8 buffet cars
Source: JICA Study Team

Figure 2. 8 shows the position of projects in the Central Tourism Region.

Figure 2. 8 Position of Projects in Central Tourism Region




Source: JICA Study Team

## 5.4. Water Supply

### 5.4.1. Present Condition

Characteristics of the Central Tourism Region are summarised in Table 2. 19. The existing water supply system is provided only in Nairobi inner city, Ngong Town and Nanyuki Town. In the other zones, individual water supply system have been adopted. Surface water from rivers has been mainly utilised in the tourism region, since potentiality of groundwater is low.

**Table 2. 19 Characteristics of the Central Tourism Region**

| Tourism Area | Tourism Sub-Area | | Existing Hotel/Lodge | 2010 Hotel/Lodge | Type of Zone | Development Pattern | Existing Facilities | Urban Water Supply Scheme |
|---|---|---|---|---|---|---|---|---|
| Nairobi | Nairobi | Inner City | 3,392 | 6,300 | Urban | C | LA | P |
| | | S. Limuru | 0 | 1,200 | Rural | C | - | - |
| | | Karen Town | 0 | 700 | Urban | C | - | - |
| | | Ngong | 0 | 1,000 | Urban | C | NWCPC | P |
| | | Ngong Hill | 0 | 0 | Rural | S | - | - |
| | | Others | 608 | 2,200 | Rural | S | - | - |
| | | Total | 4,000 | 11,400 | | | | |
| Mt. Kenya | Nanyuki | Naro Moru | 0 | 100 | Rural | S | - | - |
| | | Mt. Kenya | 0 | 100 | Rural | S | - | - |
| | | Others* | 296 | 900 | Rural | S | - | - |
| | | Total | 296 | 1,100 | | | | |

Note: * Location of hotel/lodge is not identified
C Tourism development pattern is the concentrated type
S Tourism development pattern is the scattered type
LA Managed by local authority
NWCPC Managed by the National Water Conservation and Pipeline Coorporation
- Public facilities are not existing
Community Managed by community
P Under construction/planning

Source: JICA Study Team

### 5.4.2. Forecast Water Demand

Water demand for both the tourism zone and tourism accommodation is forecasted as shown in Table 2. 20.

### 5.4.3. Development Strategy for Water Supply

**(1) Water demand for tourism area can be absorbed into the existing/planned urban water supply scheme.**

Water for the target tourism zones will be served from the urban water supply scheme in the NWMP. The project cost of water supply for tourism zones is not counted in the tourism sector development cost, as the scheme is implemented by the public sector. The proportion of water demand in the tourism zone to total water demand in the whole area planned by the scheme is less than 10 %.

The Nairobi inner city and Ngong Town belong to this type.

**(2) Water demand for the tourism area cannot be fully absorbed by the existing/planned urban water supply scheme.**

The Karen Town and South Limuru zones will use the Nairobi urban water supply scheme as water source for both zones, because the pipeline of the scheme passes near by both zones. Additional water supply facilities for both zones are required and the additional cost for these facilities is estimated under the tourism development cost.

**(3) Development of a new community water supply is required.**

In the following cases, the target tourism zone will plan a new community water supply scheme, including water supply of residents surrounding the zone. The project cost of the community water supply for the tourism zones is estimated under the tourism development cost.

- A tourism zone, which is not covered by the existing or planned urban water supply scheme
- The tourism development pattern is of the concentrated type
- The potential of the water source is sufficient, and
- There are no marked differences between the project costs covering only the tourism accommodation and those for the zone, including residents.

Karen Town and the South Limuru zones belong to this type.

**(4) Individual water supply development.**

In the following cases, the target tourism zone will plan a new individual water supply scheme only for covering water demand originating from the tourism accommodation. Individual water supply schemes for tourism zones shall be provided by each developer.

- A tourism zone located out of the area of the existing or planned urban water supply scheme
- The tourism development pattern is of the scattered type
- The potential of the water source is limited, and
- It is not advantageous to plan the required facilities with integration into the public water system.

Mt. Kenya and Naro Moru zones belong to this type.

### 5.4.4. Urban Water Supply Scheme Related with Tourism Development

Planned urban water schemes and their costs related with each tourism zone are summarised in Table 2. 20. The layout plans of the urban water scheme for Nairobi inner city, Ngong and Naro Moru are shown in Figure 2. 9, Figure 2. 10 and Figure 2. 11, respectively.

## Table 2. 20 Inventory of Proposed Projects (1/2)

(Central Tourism Region : 1/2)

| | Nairobi Tourism Area | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inner City | | | | Karen Town | | | | South Limuru | | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Urban | | | | | Rural | | | | |
| Existing Water Supply System<br>- Capacity (1,000 m3/d)<br>- Management Authority | Public (Nairobi City)<br>240.00 (Rivers & Kikuyu Spring)<br>LA | | | | | Public (Nairobi City)<br>240.00 (Rivers & Kikuyu Spring)<br>LA | | | | | Individual | | | | |
| Urban Water Supply Scheme in the NWMP | Nairobi (Habitable Area : 589 km2) | | | | | Nairobi (Habitable Area : 589 km2) | | | | | Limuru(Habitable Area : 36 km2) | | | | |
| - Served Area (km2) | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | | | | | |
| - Served Population (1,000) | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | | | | | |
| - Water Demand (1,000 m3/d) | 332.830 | 551.930 | 634.190 | 802.160 | 802.160 | 332.830 | 551.930 | 634.190 | 802.160 | 802.160 | | | | | |
| - Population Density (pers./km2) | 13,457 | 13,376 | 13,013 | 13,380 | | 13,457 | 13,376 | 13,013 | 13,380 | | 924 | 1,109 | 1,231 | 1,352 | |
| - Overall per Capita (l/c/d) | 235.55 | 244.16 | 227.73 | 231.48 | | 235.55 | 244.16 | 227.73 | 231.48 | | | | | | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 3,392 | 4,200 | 5,500 | 6,300 | 6,300 | 0 | 300 | 600 | 700 | 700 | 0 | 500 | 1,000 | 1,200 | 1,200 |
| - Water Demand (1,000 m3/d) | 1.696 | 2.100 | 2.750 | 3.150 | 3.150 | 0.000 | 0.451 | 0.886 | 1.052 | 1.052 | 0.000 | 0.292 | 0.592 | 0.722 | 0.722 |
| for Tourism Accomodation | 1.696 | 2.100 | 2.750 | 3.150 | 3.150 | 0.000 | 0.150 | 0.300 | 0.350 | 0.350 | 0.000 | 0.250 | 0.500 | 0.600 | 0.600 |
| for Resident in tourism area*1 | Included in the Urban area | | | | | 0.000 | 0.301 | 0.586 | 0.702 | 0.702 | 0.000 | 0.042 | 0.092 | 0.122 | 0.122 |
| Proportion (%)*2 | 0.51 | 0.38 | 0.43 | 0.39 | 0.39 | 0.00 | 0.08 | 0.14 | 0.13 | 0.13 | | | | | |
| Proposed Project | | | | | | | | | | | | | | | |
| - Type of Water Supply System | Urban Water Supply Scheme( Public ) | | | | | Community(Public) | | | | | Community(Public) | | | | |
| - Type of Water Source | Thika Dam (On-going) | | | | | Pipeline from Urban Water Supply Scheme | | | | | Pipeline from Ruiru Dam | | | | |
| - Incremental Capacity (1,000 m3/d) | 92.830 | 219.100 | 82.260 | 167.970 | 562.160 | 0.000 | 0.451 | 0.435 | 0.167 | 1.052 | 0.000 | 0.292 | 0.301 | 0.129 | 0.722 |
| Project Cost (KC Million)*3 | 921.583 | 505.800 | | 609.000 | 2,036.383 | | 1.332 | 0.932 | 0.338 | 2.601 | | 1.130 | 1.015 | 0.419 | 2.565 |

Remarks

*1 : Residential demand is calculated by [0.05 km2/100 rooms X No.of room X Population dencity x 150 l/c/d].

*2 : Proportion of water demand in the tourism area to one in the urban area.

*3 : Cost consists of construction, contingency, detail design & supervision and land.

*4 : Not included the construction cost of dams

Source: JICA Study Team

## Table 2. 20 Inventory of Proposed Projects (2/2)

(Central Tourism Region : 2/2)

| | Nairobi Tourism Area | | | | Mt. Kenya Tourism Area | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ngong | | | | Mt. Kenya | | | | Naro Moru Tourist Spot | | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Rural | | | | | Rural | | | | |
| Existing Water Supply System | Public (Ngong Town) | | | | | Individual | | | | | Individual | | | | |
| - Capacity (1,000 m3/d) | 0.35 (Boreholes) | | | | | | | | | | | | | | |
| - Management Authority | NWCPC | | | | | - | | | | | - | | | | |
| Urban Water Supply Scheme in the NWMP | Ngong (Habitable Area : 124 km2) | | | | | | | | | | | | | | |
| - Served Area (km2) | 1.20 | 3.34 | 4.73 | 6.11 | 6.11 | | | | | | | | | | |
| - Served Population (1,000) | 16.10 | 44.70 | 63.25 | 81.80 | 81.80 | | | | | | | | | | |
| - Water Demand (1,000 m3/d) | 2.614 | 7.278 | 10.376 | 13.474 | 13.474 | | | | | | | | | | |
| - Population Density (pers./km2) | 13,417 | 13,383 | 13,372 | 13,388 | | | | | | | | | | | |
| - Overall per Capita (l/c/d) | 162.36 | 162.82 | 164.05 | 164.72 | | | | | | | | | | | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 0 | 400 | 800 | 1,000 | 1,000 | 0 | 0 | 50 | 100 | 100 | 0 | 50 | 50 | 100 | 100 |
| - Water Demand (1,000 m3/d) | 0.000 | 0.200 | 0.400 | 0.500 | 0.500 | 0.000 | 0.000 | 0.025 | 0.050 | 0.050 | 0.000 | 0.025 | 0.025 | 0.050 | 0.050 |
| for Tourism Accomodation | 0.000 | 0.200 | 0.400 | 0.500 | 0.500 | 0.000 | 0.000 | 0.025 | 0.050 | 0.050 | 0.000 | 0.025 | 0.025 | 0.050 | 0.050 |
| for Resident in tourism area*1 | Included in the Urban area | | | | | Not included | | | | | Not included | | | | |
| Proportion (%)*2 | 0.00 | 2.75 | 3.86 | 3.71 | 3.71 | | | | | | | | | | |
| Proposed Project | | | | | | | | | | | | | | | |
| - Type of Water Supply System | Urban Water Supply Scheme( Public ) | | | | | Individual | | | | | Individual | | | | |
| - Type of Water Source | Kerarapon Spring | | | | | Groundwater (Boreholes) | | | | | Groundwater (Shallow Wells) | | | | |
| - Incremental Capacity (1,000 m3/d) | 2.264 | 4.664 | 3.098 | 3.098 | 13.124 | 0.000 | 0.000 | 0.025 | 0.025 | 0.050 | 0.000 | 0.025 | 0.000 | 0.025 | 0.050 |
| Project Cost (K$ Million)*3 | 6.149 | 9.673 | 0.000 | 11.844 | 27.666 | 0.000 | 0.000 | 0.041 | 0.041 | 0.081 | | 0.254 | 0.000 | 0.028 | 0.282 |

Remarks

*1 : Residential demand is calculated by [0.05 km2/100 rooms X No.of room X Population density x 150 l/c/d].

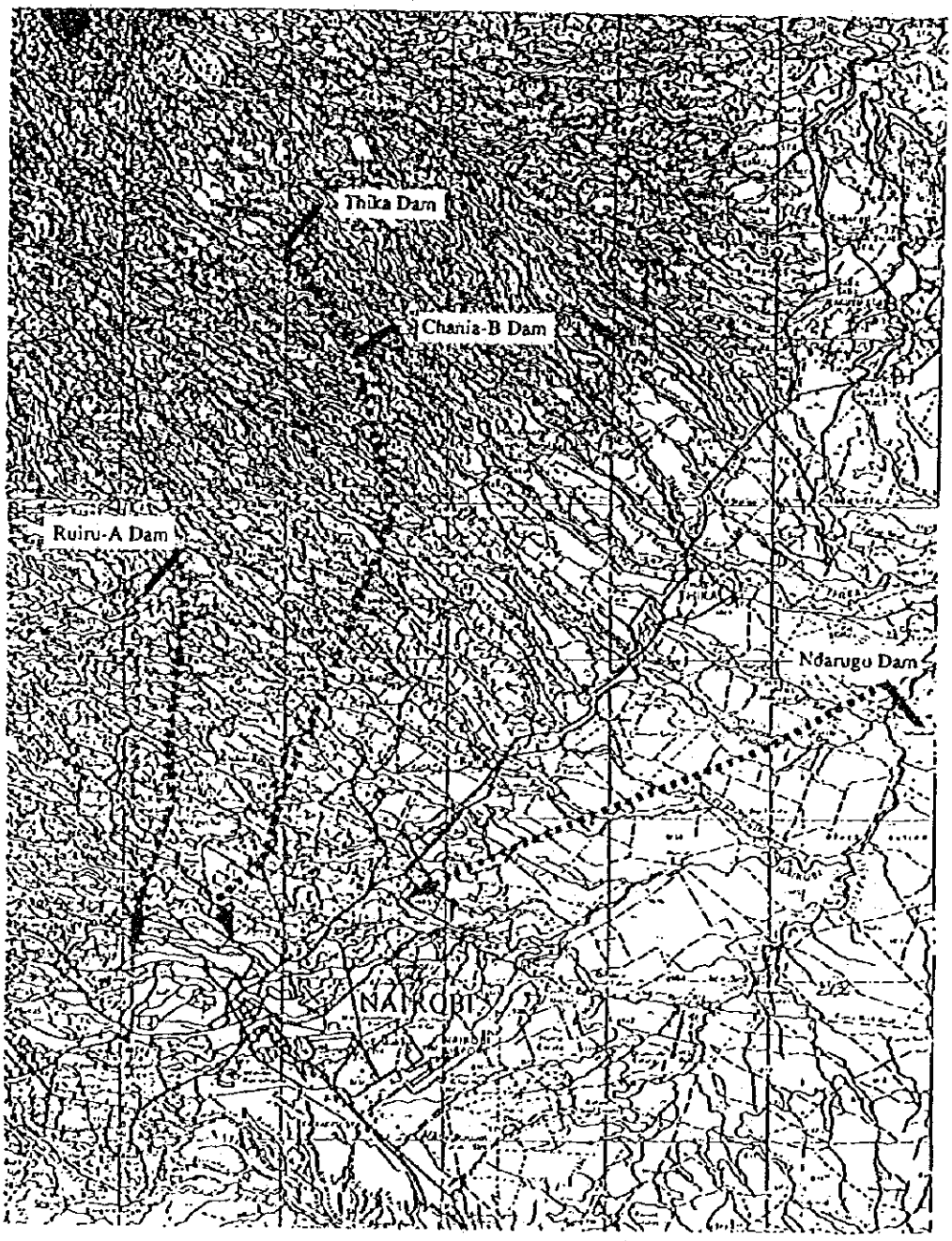
*2 : Proportion of water demand in the tourism area to one in the urban area.

*3 : Cost consists of construction, contingency, detail design & supervision and land.

*4 : Not included the construction cost of dams

Source: JICA Study Team

**Figure 2. 9 Water Supply Plan for Nairobi**

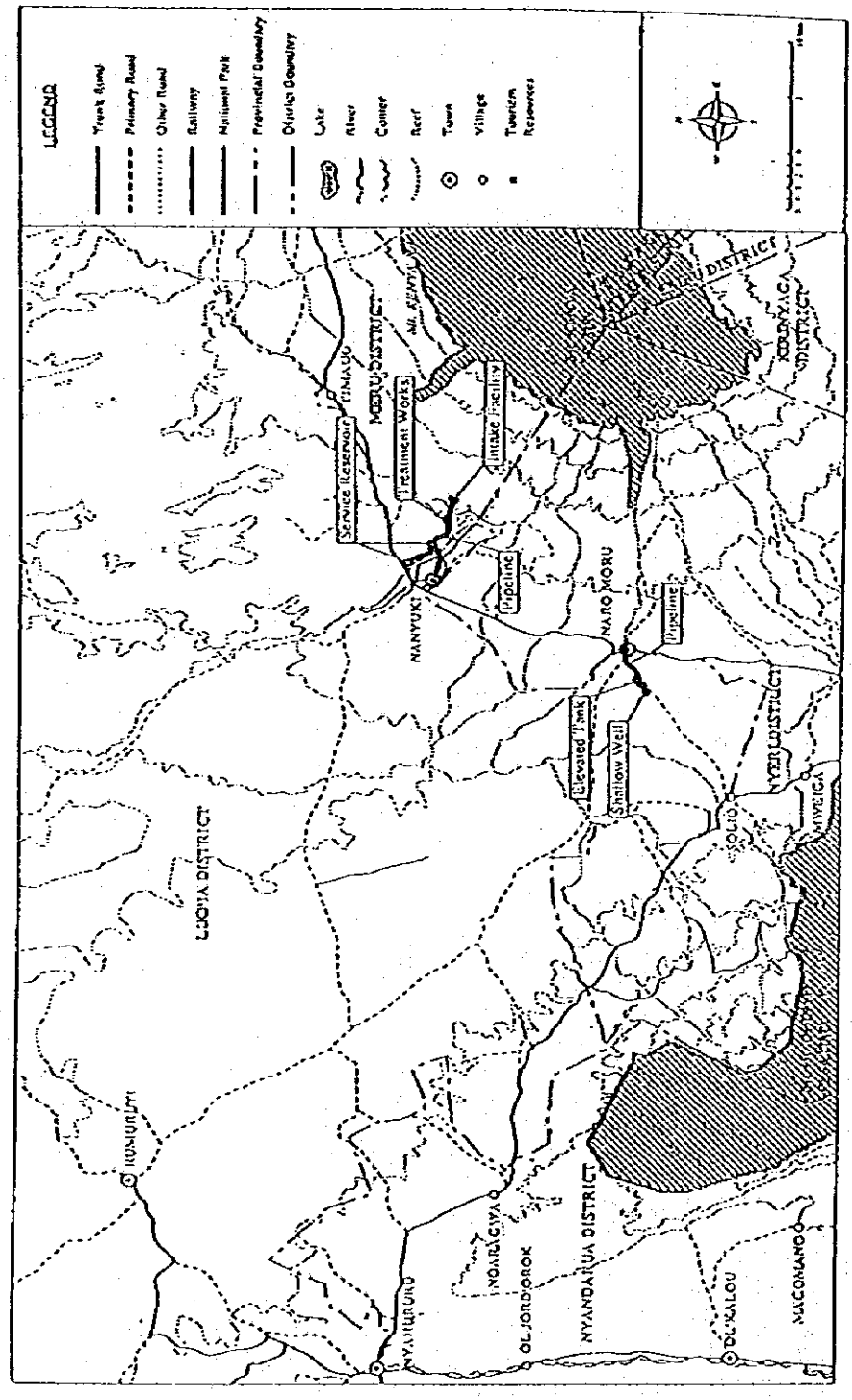



Source: JICA Study Team

Figure 2. 10 Water Supply Plan for the Ngong Area


Source: JICA Study Team

**Figure 2. 11 Water Supply Plan for Naro Moru**




Source: JICA Study Team

### 5.4.5. Proposed Project for Tourism Zone

The proposed projects for each tourism zone are summarised in Table 2. 20. The project cost and their disbursement schedule for the region are shown in Table 2. 21.

The layout plan of the Naro Moru water supply project is shown in Figure 2. 11.

**Table 2. 21 Project Cost and Disbursement Schedule**

| Project Name | Quantity (1000m3/d) | Cost (K£ million) | Urgent | Disbursement Schedule (K£ Million) 2000 | 2005 | 2010 |
|---|---|---|---|---|---|---|
| Community Water Supply Project | | | | | | |
| 1.Karen Town | 1.05 | 2.603 | 0 | 2.230 | 0.000 | 0.373 |
| 2.South Limuru | 0.72 | 2.565 | 0 | 2.138 | 0.000 | 0.428 |
| Sub Total | | 5.168 | 0 | 4.368 | 0.000 | 0.800 |
| Individual Water Supply Project | | | | | | |
| 3.Mt. Kenya | 0.05 | 0.883 | 0 | 0 | 0.043 | 0.040 |
| 4.Naro Moru | 0.05 | 0.283 | 0 | 0.255 | 0.000 | 0.028 |
| Sub Total | | 0.365 | 0 | 0.255 | 0.043 | 0.068 |
| Total | | 5.533 | 0 | 4.623 | 0.043 | 0.868 |

Source : JICA Study Team

## 5.5. Sewerage and Solid Waste Disposal

### 5.5.1. Present Condition

The existing conditions of the sewerage system and an inventory of proposed projects in the Central Tourism Region are summarised in Table 2. 22. The existing sewerage system with treatment facilities is provided only in Nairobi inner city. In the other zones, sewage has been treated individually or discharged through drainage facilities to rivers without treatment.

The existing conditions of the solid waste disposal system is as insufficient as that of the sewerage system. The existing conditions and an inventory of proposed projects is shown in Table 2. 23.

### 5.5.2. Forecast Sewage and Solid Waste Yield

Sewage yield for the tourism zone and tourism accommodation is forecasted as shown in Table 2. 22. The solid waste yield is estimated in Table 2. 23.

### 5.5.3. Development Strategy for Sewerage and Solid Waste Disposal

The sewerage system shall be planned in correspondence with the water supply plan described in the preceding sub-section and from a viewpoint of environmental conservation in the tourism development

area. The sewerage development strategy of each tourism zone, therefore, will follow the strategy of water supply for each of the tourism zones.

The solid waste disposal system in the region is classified into the following schemes according to the characteristics of each zone.

**(1) Urban Solid waste disposal scheme.**

Solid waste in the inner City, Karen Town and Ngong zones will be absorbed into the existing and planned urban schemes, since the share of solid waste yield in the zone relative to the whole area covered by the scheme is less than 10 %.

**(2) Community solid waste disposal scheme.**

In the following cases, the target zone will plan a new community solid waste disposal scheme including residential area in the outskirts of the zone.

- The tourism zone has the existing community system, or
- The number of rooms in the zone is more than 500.

South Limuru belongs to this type.

**(3) Individual solid waste disposal scheme.**

Each hotel in the Mt. Kenya and Naro Moru zones will provide individually on-site solid waste disposal facilities, such as garbage storage yard, incinerator, pit and composting facilities, as the zones have no existing solid waste facilities and the development scale of the tourism zone is small (not more than 500 rooms).

**(4) Urban Sewerage and Solid Waste Disposal Schemes Related with Tourism Development.**

The planned urban sewerage and solid waste disposal schemes related to each tourism zone are summarised in Table 2. 22 and Table 2. 23. These tables also show the project cost of each urban scheme. The project costs of urban schemes are excluded from the tourism development cost, since the urban schemes are implemented by public enterprises.

## Table 2. 22 Inventory of Proposed Projects (Sewerage System) (1/2)

| | Nairobi Tourism Area | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inner City | | | | | Karen Town | | | | South Limuru | | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Urban | | | | | Rural | | | | |
| Existing Sewerage System<br>- Capacity (1,000 m3/d)<br>- Management Authority | Public, Separate<br>150.00<br>LA(Nairobi) | | | | | Public, Separate<br>0.30<br>LA(Nairobi) | | | | | Individual | | | | |
| Urban Sewerage Scheme in the NWMP | Nairobi (Habitable Area : 589 km2) | | | | | Nairobi (Habitable Area : 589 km2) | | | | | Limuru (Habitable Area : 36 km2) | | | | |
| - Severed Area (km2) | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | | | | | |
| - Severed Population (1,000) | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | | | | | |
| - Sewage Yield (1,000 m3/d) | 266.264 | 441.544 | 507.352 | 641.728 | 641.728 | 266.264 | 441.544 | 507.352 | 641.728 | 641.728 | | | | | |
| - Population Density (pers./km2) | 13,457 | 13,376 | 13,013 | 13,380 | | 13,457 | 13,376 | 13,013 | 13,380 | | 924 | 1,109 | 1,231 | 1,352 | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 3,392 | 4,200 | 5,500 | 6,300 | 6,300 | 0 | 300 | 600 | 700 | 700 | 0 | 500 | 1,000 | 1,200 | 1,200 |
| - Sewage Yield (1,000 m3/d) | 1,357 | 1,680 | 2,200 | 2,520 | 2,520 | 0.000 | 0.361 | 0.708 | 0.842 | 0.842 | 0.000 | 0.233 | 0.474 | 0.577 | 0.577 |
| for Tourism Accomodation | 1,357 | 1,680 | 2,200 | 2,520 | 2,520 | 0.000 | 0.120 | 0.240 | 0.280 | 0.280 | 0.000 | 0.200 | 0.400 | 0.480 | 0.480 |
| for Resident in tourism area*1 | Included in the Urban area | | | | | 0.000 | 0.241 | 0.468 | 0.562 | 0.562 | 0.000 | 0.033 | 0.074 | 0.097 | 0.097 |
| Proportion (%)*2 | 0.51 | 0.38 | 0.43 | 0.39 | 0.39 | | | | | | | | | | |
| Proposed Project | | | | | | | | | | | | | | | |
| - Type of Sewerage System | Urban Sewerage Scheme (Public) | | | | | Community (Public) | | | | | Community (Public) | | | | |
| - Type of Receiving Waters | River | | | | | River | | | | | River | | | | |
| - Incremental Capacity (1,000 m3/d) | 116.264 | 175.280 | 65.808 | 134.376 | 491.728 | 0.000 | 0.361 | 0.348 | 0.133 | 0.842 | 0.000 | 0.233 | 0.241 | 0.103 | 0.577 |
| Project Cost (KS Million)*3 | 452.761 | 414.187 | 215.195 | 305.961 | 1,388.104 | | 0.691 | 0.674 | 0.248 | 1.613 | | 0.665 | 0.674 | 0.279 | 1.618 |

Remarks

*1 : Residential Yield is calculated by [0.05 km2/100 rooms X No. of room X Population dencity x 150 l/c/d x 0.8].

*2 : Proportion of sewage yield in the tourism area to one in the urban area.

*3 : Cost consists of construction, contingency, detail design & supervision and land.

Source: JICA Study Team

## Table 2. 22 Inventory of Proposed Projects (Sewerage System) (2/2)

| | Nairobi Tourism Area | | | | | Mt. Kenya Tourism Area | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ngong | | | | | Mt. Kenya | | | | | Naro Moru Tourist Spot | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Rural | | | | | Rural | | | | |
| Existing Sewerage System | Public | | | | | Individual | | | | | Individual | | | | |
| - Capacity (1,000 m3/d) | No treatment facilities | | | | | | | | | | | | | | |
| - Management Authority | LA | | | | | | | | | | | | | | |
| Urban Sewerage Scheme in the NWMP | Ngong (Habitable Area : 124 km2) | | | | | | | | | | | | | | |
| - Sewered Area (km2) | 1.20 | 3.34 | 4.73 | 6.11 | 6.11 | | | | | | | | | | |
| - Sewered Population (1,000) | 16.10 | 44.70 | 63.25 | 81.80 | 81.80 | | | | | | | | | | |
| - Sewage Yield (1,000 m3/d) | 2.091 | 5.822 | 8.301 | 10.779 | 10.779 | | | | | | | | | | |
| - Population Density (pers./km2) | 13,417 | 13,383 | 13,372 | 13,388 | | | | | | | | | | | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 0 | 400 | 800 | 1,000 | 1,000 | 0 | 0 | 50 | 100 | 100 | 0 | 50 | 50 | 100 | 100 |
| - Sewage Yield (1,000 m3/d) | 0.000 | 0.160 | 0.320 | 0.400 | 0.400 | 0.000 | 0.000 | 0.020 | 0.040 | 0.040 | 0.000 | 0.020 | 0.020 | 0.040 | 0.040 |
| for Tourism Accomodation | 0.000 | 0.160 | 0.320 | 0.400 | 0.400 | 0.000 | 0.000 | 0.020 | 0.040 | 0.040 | 0.000 | 0.020 | 0.020 | 0.040 | 0.040 |
| for Resident in tourism area*1 | Included in the Urban area | | | | | Not included | | | | | Not included | | | | |
| Proportion (%)*2 | 0.00 | 2.75 | 3.86 | 3.71 | 3.71 | | | | | | | | | | |
| Proposed Project | | | | | | | | | | | | | | | |
| - Type of Sewerage System | Urban Sewerage Scheme (Public) | | | | | Individual | | | | | Individual | | | | |
| - Type of Receiving Waters | River | | | | | River | | | | | River | | | | |
| - Incremental Capacity (1,000 m3/d) | 2.091 | 3.731 | 2.478 | 2.478 | 10.779 | 0.000 | 0.000 | 0.020 | 0.020 | 0.040 | 0.000 | 0.020 | 0.000 | 0.020 | 0.040 |
| Project Cost (KC Million)*3 | 6.184 | 11.030 | 7.237 | 7.209 | 31.660 | | | 0.050 | 0.050 | 0.100 | | 0.050 | 0.000 | 0.050 | 0.100 |

Remarks

*1 : Residential Yield is calculated by [0.05 km2/100 rooms X No. of room X Population dencity x 150 l/c/d x 0.8].

*2 : Proportion of sewage yield in the tourism area to one in the urban area.

*3 : Cost consists of construction, contingency, detail design & supervision and land.

Source: JICA Study Team

## Table 2. 23 Inventory of Proposed Projects - Solid Waste Disposal System (1/2)

| | Nairobi Tourism Area | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inner City | | | | | Karen Town | | | | | South Limuru | | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Urban | | | | | Rural | | | | |
| Existing Solid Waste System | Public (Controlled Tipping Method) | | | | | Public (Controlled Tipping Method) | | | | | Individual | | | | |
| - Management Authority | LA | | | | | LA | | | | | not existing | | | | |
| Urban Solid Waste Collection & | Nairobi (Habitable Area : 589 km2) | | | | | Nairobi (Habitable Area : 589 km2) | | | | | Limuru (Habitable Area : 36 km2) | | | | |
| Disposal Scheme (Public) | LA | | | | | LA | | | | | | | | | |
| - Served Area (km2) | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | 105.00 | 169.00 | 214.00 | 259.00 | 259.00 | | | | | |
| - Served Population (1,000) | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | 1,413.00 | 2,260.50 | 2,784.80 | 3,465.30 | 3,465.30 | | | | | |
| - Solid Waste Yield (ton/d)*1 | 423.90 | 904.20 | 1,253.16 | 1,732.65 | 1,732.65 | 423.90 | 904.20 | 1,253.16 | 1,732.65 | 1,732.65 | | | | | |
| - Population Density (pers./km2) | 13,457 | 13,376 | 13,013 | 13,380 | | 13,457 | 13,376 | 13,013 | 13,380 | | 924 | 1,109 | 1,231 | 1,352 | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 3,392 | 4,200 | 5,500 | 6,300 | 6,300 | 0 | 300 | 600 | 700 | 700 | 0 | 500 | 1,000 | 1,200 | 1,200 |
| - Solid Waste Yield (ton/d) | 4.579 | 5.670 | 7.425 | 8.505 | 8.505 | 0.000 | 1.208 | 2.567 | 3.286 | 3.286 | 0.000 | 0.786 | 1.627 | 2.026 | 2.026 |
| for Tourism Accomodation | 4.579 | 5.670 | 7.425 | 8.505 | 8.505 | 0.000 | 0.405 | 0.810 | 0.945 | 0.945 | 0.000 | 0.675 | 1.350 | 1.620 | 1.620 |
| for Resident in tourism area*2 | Included in the Urban area | | | | | 0.000 | 0.803 | 1.757 | 2.341 | 2.341 | 0.000 | 0.111 | 0.277 | 0.406 | 0.406 |
| Proportion (%)*3 | 1.08 | 0.63 | 0.59 | 0.49 | 0.49 | 0.00 | 0.13 | 0.20 | 0.19 | 0.19 | | | | | |
| Proposed Project | Urban Solid Waste Scheme (Public) | | | | | Nairobi Urban Solid Waste Scheme (Public) | | | | | Community (Public) | | | | |
| - Type of Collection System | Separation, 2 times/week | | | | | Separation, 2 times/week | | | | | Separation, 2 times/week | | | | |
| - Type of Disposal Method | Recycling + Sanitary Landfill | | | | | Recycling + Sanitary Landfill | | | | | Recycling + Sanitary Landfill | | | | |
| - Incremental Capacity (m3/d)*4 | 0.000 | 857.679 | 623.143 | 856.232 | 2,337.05 | 0.000 | 2.156 | 2.427 | 1.285 | 5.869 | 0.000 | 1.403 | 1.502 | 0.712 | 3.617 |
| - Required Area (ha)*4 | 0.000 | 52.175 | 37.908 | 52.087 | 142.171 | 0.000 | 0.131 | 0.148 | 0.078 | 0.357 | 0.000 | 0.085 | 0.091 | 0.043 | 0.220 |
| Project Cost (K$ Million) | | 61.096 | 44.389 | 60.993 | 166.479 | | | | | | | 0.100 | 0.107 | 0.051 | 0.258 |

Remarks

*1 : Industrial and hazardous wastes are not included.

*2 : Residential Yield is calculated by (0.05 km2/100 rooms X No. of room X Population density x Unit yield (0.3,0.4,0.45,0.5 kg/c/d)).

*3 : Proportion of solid waste yield in the tourism area to one in the urban area.

*4 : It was estimated by the following assumptions :

Rolled density of garbage is 560 kg/m3

Depth of landfill is 6.0 m

Project life time is 10 years.

Source: JICA Study Team

## Table 2. 23 Inventory of Proposed Projects - Solid WasteDisposal System (2/2)

| | Nairobi Tourism Area | | | | Mt. Kenya Tourism Area | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ngong | | | | Mt. Kenya | | | | Naro Moru Tourist Spot | | | | | |
| | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total | Present | 2000 | 2005 | 2010 | Total |
| Type of Area | Urban | | | | | Rural | | | | | Rural | | | | |
| Existing Solid Waste System | Public | | | | | Individual | | | | | Individual | | | | |
| - Management Authority | LA | | | | | not existing | | | | | not existing | | | | |
| Urban Solid Waste Collection & Disposal Scheme (Public) | Ngong (Habitable Area : 124 km2)<br>LA | | | | | | | | | | | | | | |
| - Served Area (km2) | 1.20 | 3.34 | 4.73 | 6.11 | 6.11 | | | | | | | | | | |
| - Served Population (1,000) | 16.10 | 44.70 | 63.25 | 81.80 | 81.80 | | | | | | | | | | |
| - Solid Waste Yield (ton/d)*1 | 4.83 | 17.88 | 28.46 | 40.90 | 40.90 | | | | | | | | | | |
| - Population Density (pers./km2) | 13,417 | 13,383 | 13,372 | 13,388 | | | | | | | | | | | |
| Tourism Development Plan | | | | | | | | | | | | | | | |
| - Number of Room | 0 | 400 | 800 | 1,000 | 1,000 | 0 | 0 | 50 | 100 | 100 | 0 | 50 | 50 | 100 | 100 |
| - Solid Waste Yield (ton/d) | 0.000 | 0.540 | 1.080 | 1.350 | 1.350 | 0.000 | 0.000 | 0.068 | 0.135 | 0.135 | 0.000 | 0.068 | 0.068 | 0.135 | 0.135 |
| for Tourism Accomodation | 0.000 | 0.540 | 1.080 | 1.350 | 1.350 | 0.000 | 0.000 | 0.068 | 0.135 | 0.135 | 0.000 | 0.068 | 0.068 | 0.135 | 0.135 |
| for Resident in tourism area*2 | Included in the Urban area | | | | | Not included | | | | | Not included | | | | |
| Proportion (%)*3 | 0.00 | 3.02 | 3.79 | 3.30 | 3.30 | | | | | | | | | | |
| Proposed Project | Urban Solid Waste Scheme (Public) | | | | | Individual | | | | | Individual | | | | |
| - Type of Collection System | Separation, 2 times/week | | | | | Separation + Recycling | | | | | Separation + Recycling | | | | |
| - Type of Disposal Method | Recycling + Sanitary Landfill | | | | | On-site Incinerator/Compost/Landfill | | | | | On-site Incinerator/Compost/Landfill | | | | |
| - Incremental Capacity (m3/d)*4 | 0.000 | 23.304 | 18.897 | 22.210 | 64.411 | 0.000 | 0.000 | 0.121 | 0.121 | 0.241 | 0.000 | 0.121 | 0.000 | 0.121 | 0.241 |
| - Required Area (ha)*4 | 0.000 | 1.418 | 1.150 | 1.351 | 3.918 | 0.000 | 0.000 | 0.007 | 0.007 | 0.015 | 0.000 | 0.007 | 0.000 | 0.007 | 0.015 |
| Project Cost (KE Million) | | 1.660 | 1.346 | 1.582 | 4.588 | | | 0.007 | 0.007 | 0.014 | | 0.007 | 0.000 | 0.007 | 0.014 |

Remarks

*1 : Industrial and harzardous wastes are not included.

*2 : Residential Yield is calculated by [0.05 km2/100 rooms X No. of room X Population dencity x Unit yeild (0.3,0.4,0.45,0.5 kg/c/d)].

*3 : Proportion of solid waste yield in the tourism area to one in the urban area.

*4 : It was estimated by the follwing assumptions ;

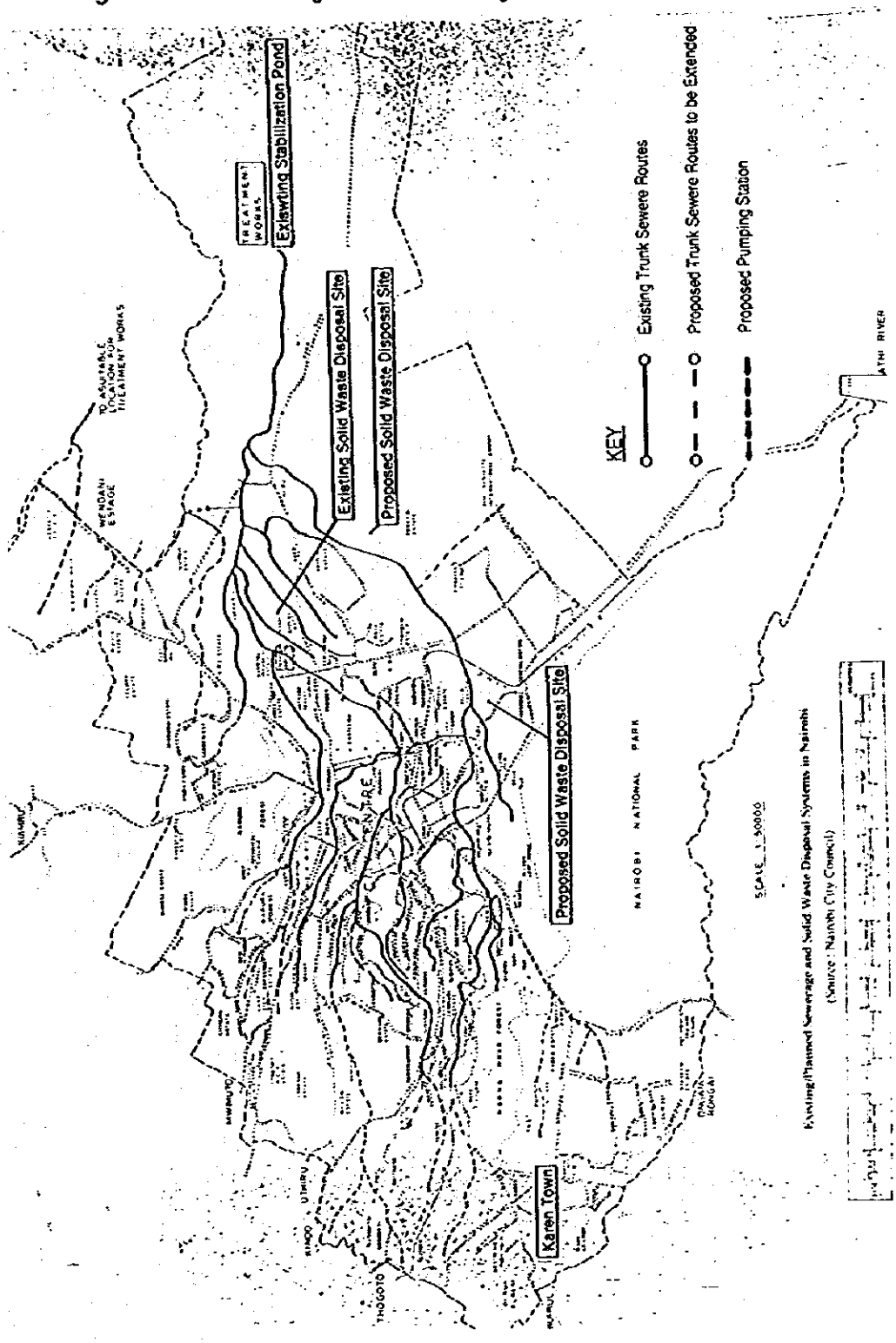
Rolled density of garbage is 560 kg/m3

Depth of landfill is 6.0 m

Project life time is 10 years.

Source: JICA Study Team

**Figure 2. 12 Existing/Planned Sewerage and Solid Waste Disposal Systems**




Source: Nairobi City Council

### 5.5.4. Proposed Project for Each Tourism Zone

The proposed projects for each tourism zone are summarised in Table 2. 22 and Table 2. 23. The project cost and their disbursement schedule for the region are shown in Table 2. 24.

The stabilization/aerated lagoon process is proposed for the urban and community sewerage systems as sewage treatment method. For individual systems, a septic tank able to treat both, night soil and gray water is proposed.

Solid waste in urban and community zones shall be disposed by means of sanitary landfilling. Individual systems consist of garbage storage yard, incinerator, pits and composting facilities.

**Table 2. 24 Project Cost and Disbursement Schedule**

(Sewerage system)

| Project Name | Quantity (1,000 m3/d) | Cost (K£ million) | Urgent | Disbursement Schedule (K£ million) 2000 | 2005 | 2010 |
|---|---|---|---|---|---|---|
| Community Sewerage Project | | | | | | |
| 1.Karen Town | 0.84 | 1.613 | 0 | 0.693 | 0.690 | 0.230 |
| 2.South Limuru | 0.58 | 1.618 | 0 | 0.675 | 0.675 | 0.268 |
| Sub Total | | 3.230 | 0 | 1.368 | 1.365 | 0.498 |
| Individual Sewerage Project | | | | | | |
| 3.Mt. Kenya | 0.04 | 0.100 | 0 | 0 | 0.050 | 0.050 |
| 4.Naro Moru | 0.04 | 0.100 | 0 | 0.050 | 0.000 | 0.050 |
| Sub Total | | 0.200 | 0 | 0.050 | 0.050 | 0.100 |
| Total | | 3.430 | 0 | 1.418 | 1.415 | 0.598 |

(Solid Waste Disposal System)

| Project Name | Quantity (m3/d) | Cost (K£ Million) | Urgent | Disbursement Schedule (K£ Million) 2000 | 2005 | 2010 |
|---|---|---|---|---|---|---|
| Community Solid Waste Disposal Project | | | | | | |
| 1.South Limuru | 3.62 | 0.258 | 0 | 0.108 | 0.108 | 0.043 |
| Sub Total | | 0.258 | 0 | 0.108 | 0.108 | 0.043 |
| Individual Solid waste Disposal Project | | | | | | |
| 2.Mt. Kenya | 0.24 | 0.015 | 0 | 0.000 | 0.008 | 0.008 |
| 3.Naro Moru | 0.24 | 0.015 | 0 | 0.008 | 0.000 | 0.008 |
| Sub Total | | 0.030 | 0 | 0.008 | 0.008 | 0.015 |
| Total | | 0.288 | 0 | 0.115 | 0.115 | 0.058 |

Source: JICA Study Team

## 5.6. Power and Communication

### 5.6.1. Electricity

#### (1) Demand of Electricity by Tourism Development and Existing Plans

##### a. Demand Projections

In the Central Tourism Region the conditions of power supply by distribution lines are well extended. Table 2. 25 shows that the share of tourism demand will increase to 2.3 % in the year 2010.

**Table 2. 25 Demand Forecast by Tourism**

| Year | Existing | 2000 | 2005 | 2010 |
|---|---|---|---|---|
| No. of Room | 4000 | 8,000 | 11,500 | 13,400 |
| Tourism Demnad (MVA) | - | 10.1 | 19.7 | 24.9 |
| Total Regional Demand (MVA) | 310 | 570 | 830 | 1,100 |
| Share of Tourism Demand to the Regional Total(%) | - | 1.8% | 2.3% | 2.3% |

Note: Figure of numbers of rooms adopted rooms of Hotel / Lodge / Permanent Camp of Room requirement

Source: JICA Study Team and National Power Development Plan

##### b. Review and Assessment of Existing Plans

Existing plans by KPLC (Kenya Power & Lighting Company) are as follows:

- North East Olkaria Geothermal Power Station (77 MW)
- 220 kV Nairobi North Substation
- 220 kV transmission lines from Olkaria to Nairobi North Substation
- Nairobi - Mombasa 220 kV transmission lines
- Kiambere - Nairobi 220 kV transmission lines
- East Olkaria Geothermal Power Station (45 MW)
- Ewaso Ngiro (South) multipurpose project (180 MW)
- Mutonga Grand Falls hydroelectric power station (120 MW)
- Munyo Dam multipurpose project (40 MW).

Almost all of the hydroelectric power stations are located in the East of Mt. Kenya, and geothermal power stations are located in the East Rift Valley, near Lake Naivasha. The generated electricity is supplied by 220 kV and 132 kV transmission lines to Nairobi and other places.

KPLC plans to extend 220 kV transmission lines and a new substation at the Northwest of Nairobi, which will receive power from the Olkaria

geothermal power station. Extension of the transmission line interconnecting to the Coastal area is also planned by the year 2004. It may be possible to supply power even during drought from the thermal power stations at the Coast Area.

In order to meet the demand in 2010, it is necessary to develop the other geothermal and hydroelectric power generation plants.

**(2) Basic Policy for Electricity Supply**

**a. Nairobi Tourism Area**

A new tourism promotion zone in Nairobi suburbs will receive power by 33 kV or 11 kV distribution lines, which will be extended from existing lines of KPLC.

**b. Mt. Kenya Tourism Area**

There is a 33 kV distribution line from Nanyuki to Naro Moru. This distribution line is stepped down at Naro Moru from 33 kV to 11 kV and electricity is distributed around Naro Moru town. Therefore, the power supply to a new tourism core may be extended from the existing 11 kV line of KPLC. In this case, it is necessary to consider to hide the power line in order to conserve the landscape.

**(3) Proposed Projects**

**a. Nairobi Tourism Area**

The development for infrastructures will cover the demand of electricity by tourism section.

**b. Mt. Kenya Tourism Area**

The 11 kV distribution line will be extended to a new tourism area. The location of the proposed distribution line is shown in Figure 2. 13.

Estimated cost for distribution line prepared by KPLC are as follows :

- Construction cost 30,000 K£/km
- Extension length 13 km
- Total cost K£ 390,000 (by the year of 2000).

### 5.6.2. Communication

#### (1) Demand on Communication by Tourism and Existing Plans

##### a. Demand Projection

The demand for telephone lines by tourism in 2010 will increase to 455 telephone line connections as shown on Table 2. 26. The numbers of telephone lines are calculated as 1 line for 20 rooms.

**Table 2. 26 Demand Forecast by Tourism**

| Year | Existing | 2000 | 2005 | 2010 |
|---|---|---|---|---|
| No. of Room | 4000 | 8000 | 11500 | 13400 |
| Increasing No. of Telephone lines by Tourism | - | 185 | 360 | 455 |

Note: Figure of number of rooms adopted rooms of Hotel / Lodge / Permanent Camp of Room requirement
Source: JICA study team

### b. Review and Assessment of Existing Plans

The KPTC (Kenya Post & Telecommunication Company) has a plan to increase the exchange capacity and service connections for improvement of existing traffic congestion in Nairobi. This plan is expected to be executed by foreign loan. These projects will improve the traffic condition in Nairobi and Mombasa. Consequently the call completion rate will increase.

## (2) Basic Policy for Communication Supply

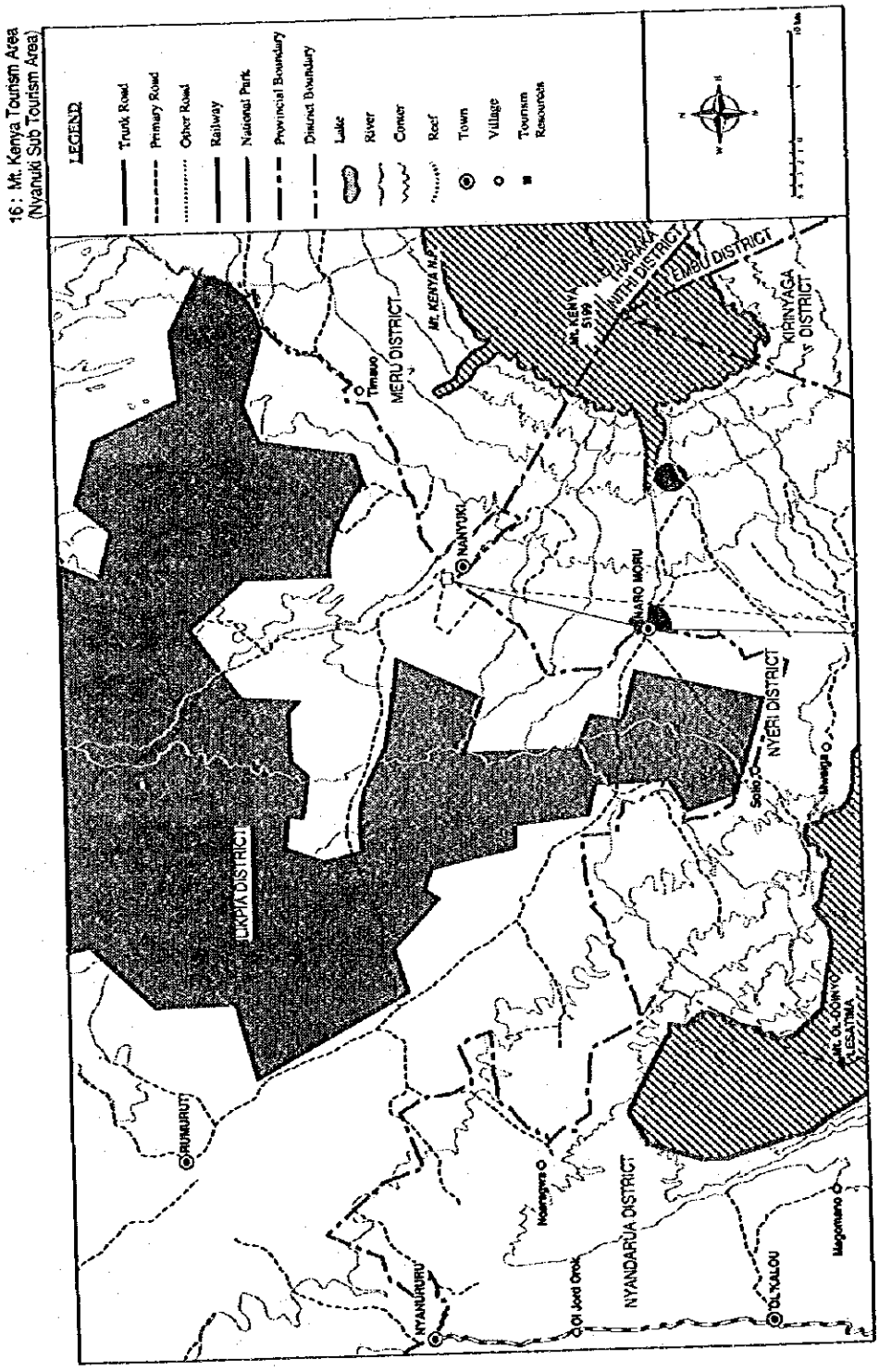
### a. Nairobi Tourism Area

The communication line will be connected by KPTC. These demand will be covered by the other industries.

### b. Mt. Kenya Tourism Area

There is an exchange station in Naro Moru. The extension of telephone line to the new tourism core will be done by overhead line by KPTC.

## Figure 2. 13 Power Supply Plan for Rumuruti - Naro Moru




Source: JICA Study Team

# CHAPTER 3 WESTERN TOURISM REGION DEVELOPMENT PLAN

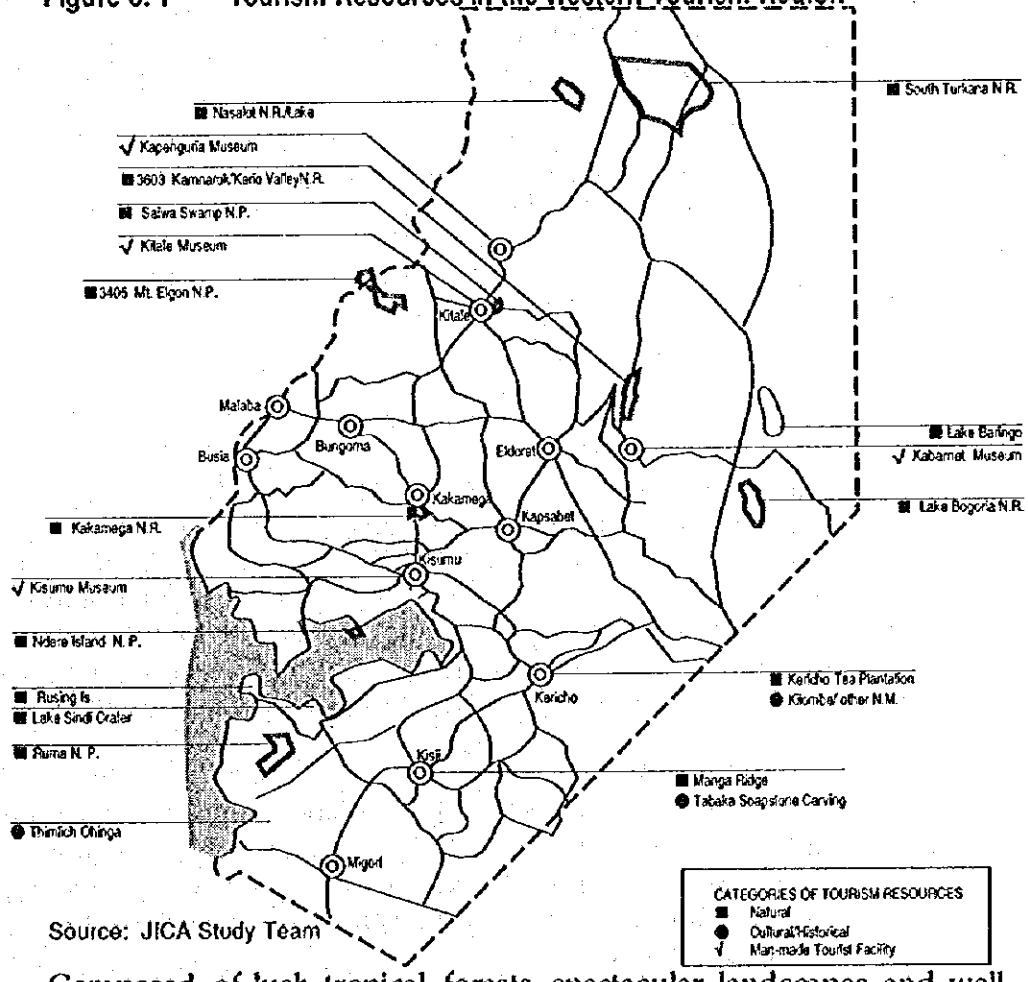
# Chapter 3 Western Tourism Region Development Plan

## 1. Analysis of Existing Conditions

### 1.1. Tourism Resources

The Western Tourism Region includes Nyanza and the Western and middle part of the Rift Valley Province. It is a highland and mountain area surrounding the Victoria Lake basin. Figure 3. 1 shows the principal tourism resources in the region.

Figure 3. 1 Tourism Resources in the Western Tourism Region




Source: JICA Study Team

Composed of lush tropical forests, spectacular landscapes and well-cultivated fields, the region has quite different characteristics from other regions, and the tourists' image of Kenya as well. It has the highest population density of the regions indicating that it is rather a human's territory than a wilderness.

The highland part of the region has an ideal climate almost all year round and is proposed as a site for highland resorts. Various ethnic groups inhabit the region with their distinctive cultures and ways of life. This constitutes a potential tourism resource, if proper arrangements and considerations are made. The region's nature and wildlife as found in Kakamega Forest and Saiwa Swamp is different from those of established wildlife safari destinations. This is a strength to differentiate the region from competitor regions.

## 1.2. Visitor Arrivals

The study team estimates the number of visitor arrivals to the region in 1993 to have been some 115,000 people, based on the questionnaire survey at the international airports. The same survey showed the average length of stay in the region to be 4.0 nights. The shorter length of stay compared to that of the coast (14 nights) indicates the region's position as stop-over point for safaris, rather than a resort destination.

National parks and reserves in the region have received only 40,000 to 50,000 visitors annually for the past several years. The cultural facilities in the region have had same 50,000 visitors.

## 1.3. Environment

### 1.3.1. Non-organic Environment

The tourism region consists of the Western Highland, the Low Plateau in the Lake Victoria basin and the Rift Valley. The elevation gap is high with an altitude ranging between 500 to 4,400 m. Major topographic features are Mt. Elgon, the Cherangani Hills and the Mau Escarpment, which are important water catchment areas. There are the Lake Victoria and two Rift Valley lakes, the Lakes Baringo and Bogoria. The geography is Tertiary volcanics in the highland and Precambrian metamorphics in the plateau. The soil has generally high to moderate fertility in the highland and plateau, but low fertility in the valley.

The temperature is relatively cool, with the annual mean temperature being between 14 to 28 °C. The rainfall is comparatively high and more than 800 mm is the annual mean in most of the region, but varying from 400 to 1,800 mm. There is no real dry season in the highland and plateau, but one long dry season from September to March in the Northern highland.

### 1.3.2. Vegetation and Wildlife

The main vegetation is semi-arid bushed and wooded grassland, arid-thorn bushland and montane and highland forests. There are also a remnant of the West African tropical rain forest in Kakamega and a

permanent swamp like in Saiwa/Yala. Agricultural land is widespread in about two-thirds of the region. This ratio is the highest among all the tourism regions.

Mammals in the region are characterised by forest species, such as small antelopes and primates. There are also elephant dispersal areas and rare large antelopes, such as roan antelope, sitatunga and greater kudu.

Birds are also abundant and rich in diversity represented by a large flock of flamingos and forest birds, some of which are threatened and endemic species. On the other hand, Lake Victoria fishes, especially cichlid species, have remarkably high diversity and endemism.

### 1.3.3. Natural Ecosystem

There are three ecological zones in the region, that is zone I, II and III-2. Most part of the region belongs to the zone I, which means that the agricultural potential is rather high. Details of the ecological zones have already been described in Chapter 2. The characteristics of the natural ecosystem are summarised as follows:

- A variety of eco-zones, that is Afro-alpine, forest, savannah and wetland
- Montane and highland forests, especially at Mt. Elgon and Cherangani Hills and tropical rain forest in Kakamega, with high biodiversity
- Permanent swamps, those around the lakes and Saiwa Swamp
- Seasonal dispersal of large mammals including elephants along the Rift Valley and important populations of roan antelope and sitatunga, and
- High diversity and endemism in Lake Victoria fishes.

## 1.4. Infrastructure

### 1.4.1. Road Transportation

The majority of tourist transport in Kenya depends on the road transport mode at present. The road conditions in the Western Region are partly satisfactory. On the whole, access from the trunk roads to the tourism destination entrances is inadequate. The development of rural roads has tended to be neglected, due to higher priority being given to trunk road development.

### 1.4.2. Railway Transportation

The existing condition of the railway in the region is the same as that in the Central Region.

### 1.4.3. Air Transportation

There are only few airstrips in the region. The air services for access to tourism destinations are limited, because of small aircraft services, small air port facilities and expensive air fares.

### 1.4.4. Water Transportation

The water transport activities in the region concentrate at Kisumu on Lake Victoria.

### 1.4.5. Water Supply

The water supply system in the region is unsatisfactory, because of a lack of water supply and the increase of population and economic activities. Ground water is utilised in many places from boreholes and shallow wells.

### 1.4.6. Waste Disposal

The condition of the sanitary system in Kenya is still very unsatisfactory. Especially the region has hardly any established sanitary system. A sewerage system is provided in only limited urban areas. Waste disposal treatment is gradually becoming a serious problem.

### 1.4.7. Power Supply

The power supply system is established in the areas along the Nairobi-Eldoret transmission and other lines. Therefore, these areas are supplied relatively well. However, other areas are not so well supplied.

## 2. Environmental Considerations

### 2.1. Environmental Problems

#### 2.1.1. General Problems

The agricultural potential is rather high in the region. The human population size is the largest among all the tourism regions and it will still increase. As a result, large animals have been already eliminated from most of the region. On the other hand, there remain natural forests and lakes with a high level of biodiversity. Therefore, environmental problems occur mainly from human activities, such as agriculture and pastoralism. Major general problems are:

- Degradation of wildlife habitat and disruption of their dispersal and migration areas by expansion of human settlements and agricultural land, increase of livestock and land sub-division with fencing
- Land use conflict between environmental conservation and large-scaled development for public use, such as hydro-electric plant (Nasalot NR) and reclamentation and irrigation schemes (Lake Victoria)
- Ecological isolation of small NPs and NRs and possible genetic deterioration of some wild animals, for example in Saiwa Swamp NP (sitatunga) and Ruma NP (roan antelope)
- Soil erosion on agricultural land and mountain slopes by unsuitable cultivation, over-grazing, road construction and mining, especially in the Baringo District (along the Rift Valley). This causes land deterioration in that area and siltation in Lakes Victoria and Baringo
- Water pollution by industrial and domestic sewage, agrochemicals and siltation , for example in Lakes Victoria and Baringo
- Illegal tree logging, grass collection, honey collection and charcoal burning, for example in Kakamega FR and Ndere Island NP
- Illegal grazing and over-grazing by livestock, for example in Nasalot NR, and South Turkana NR
- Fire invasion into montane moorland and forest and swamp, for example in Mt. Elgon NP, and Saiwa Swamp NP
- Subsistence poaching, for example in Kakamega FR
- Ecological disturbance in Lake Victoria by introduction and increase of exotic species like Nile perch and water hyacinth
- Human settlement in NRs (Nasalot NR, Kamnarok/Rimoi NRs) and land privatisation

- Drought in Rift Valley , and
- Crop damage by elephant, hippopotamus, baboon, monkeys and human injury by elephant, leopard, crocodile, for example around Mt. Elgon, Lake Baringo and Nasalot, South Turkana NRs.

### 2.1.2. Tourism Problems

There are at present few serious environmental problems in the region caused by tourism, because most of the NPs and NRs are little used by or closed to tourism. However, supposing that the region becomes popular as a tourism destination in the near future, the same problems as those mentioned in the Central Tourism Region may occur.

## 2.2. Environmental Conservation and Management

### 2.2.1. Conservation Areas

There are a total of 11 protected areas in the region, that is 4 National Parks, 6 National Reserves and 1 Local Sanctuary. Forest Reserves are mainly distributed in the Mau Escarpment and the Cherangani Hills.

### 2.2.2. Present Measures

There are various agreements and project plans for environmental conservation and management. However, primarily because of a lack of funds, most of the projects have not yet been started or are implemented unsatisfactorily. The Baringo District is exceptionally eager for NR management, namely for the Lake Bogoria NR.

Present measures and their progress for wildlife conservation and management with initiative by KWS are as follows :

**(1) Five Year Management Plans for Protected Areas (after 1990) :**

- Kakamega NR, Nasalot NR and South Turkana NR; but no progress, because of lack of funds

**(2) Agreements for NR Management between KWS and County Councils :**

- Nasalot NR (West Pokot C.C.), South Turkana NR (Turkana C.C.) and Rimoi NR (Elgeyo Marakwet C. C.)

**(3) Memorandums of Understanding for the Joint Management of Selected Forests between KWS and Forest Department :**

- For example inKakamega FR, Mt, Elgon FR, and Nandis FR

(4) **Preparation of Forest Conservation Plans by KIFCON (ODA), KWS and Forest Department:**

- Kakamega Forest and South-west Mau/Transmara Forest; but no implementation, because of the withdrawal by KIFCON

(5) **Specific Notional Parks Management:**

- Fencing programme in Saiwa Swamp NP
- Introduction and re-introduction of some animal species in Ruma NP and Ndere Island NP

(6) **Community Wildlife Programme:**

- Environmental education for alteration of life style to the sustainable use of natural resources, such as agro-forestry and fishing farm around Kakamega Forest
- Problem animal control by fencing

(7) **Community Service by the Baringo County Council:**

- Use of revenues from Lake Bogoria NR for public purposes like school and clinic construction
- Grazing permission at Lake Bogoria NR in the dry season for local communities
- Working for road maintenance in Lake Bogoria NR by local communities.

## 2.3. Environmental Considerations for Conservation and Management

### 2.3.1. General Considerations

The region is characterised by highland, mountains, forests, wetland and expanded human activities. Thus, environmental problems are summarised as deforestation, soil erosion, siltation and wildlife conflict.

In order to comprehensively pursue environmental conservation and management, the Five Year Management Plans for Protected Areas compiled by KWS must be implemented as soon as possible in co-operation with other institutes, such as MOTW, the Forest Department, the Department of Fisheries, County Councils, foreign aid organisations and NGOs.

The following areas have been processed or promoted to be gazetted to be protected areas by KWS for enforcement of further conservation : Cherangani Hills, Lake Baringo, Lake Victoria (Ndere Island NP

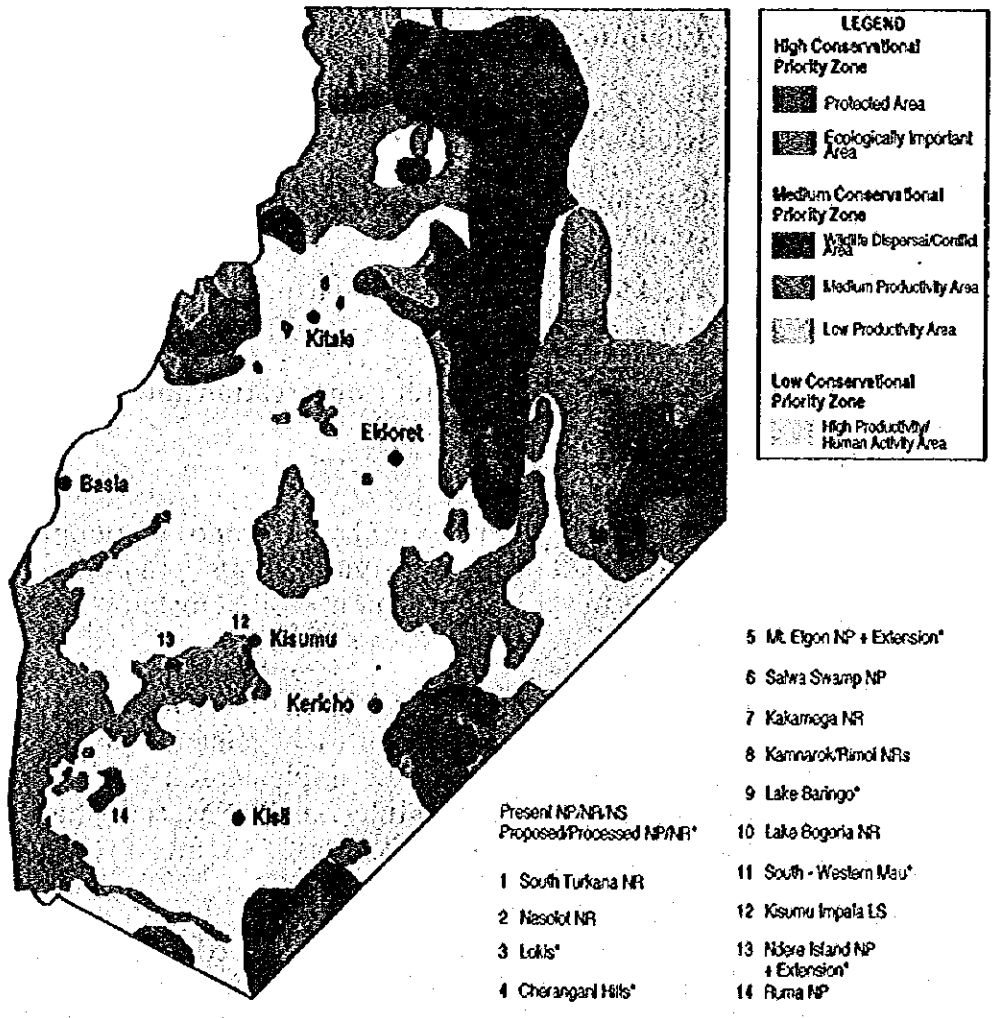
extension), Mt. Elgon NP extension, South-Western Mau, Bonjoge, Lake Simbi. They are shown in Figure 3. 2. In addition, Lake Bogoria is in process to be registered as a Ramsar Site.

Main environmental considerations are as follows:

- Forest conservation: montane/highland/tropical rain forests, especially at Mt. Elgon, Cherangani Hills and Kakamega
- Prevention of soil erosion, especially in the Baringo District
- Wetland conservation, especially in Lake Victoria, Rift Valley lakes and Saiwa Swamp, and
- Mitigation of wildlife conflict.

The proposed measures for each consideration are the same as those mentioned in the Central Tourism Region.

**Figure 3. 2 Nature Conservation Areas in the Western Tourism Region**




Source: JICA Study Team

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Main environmental considerations are as follows:

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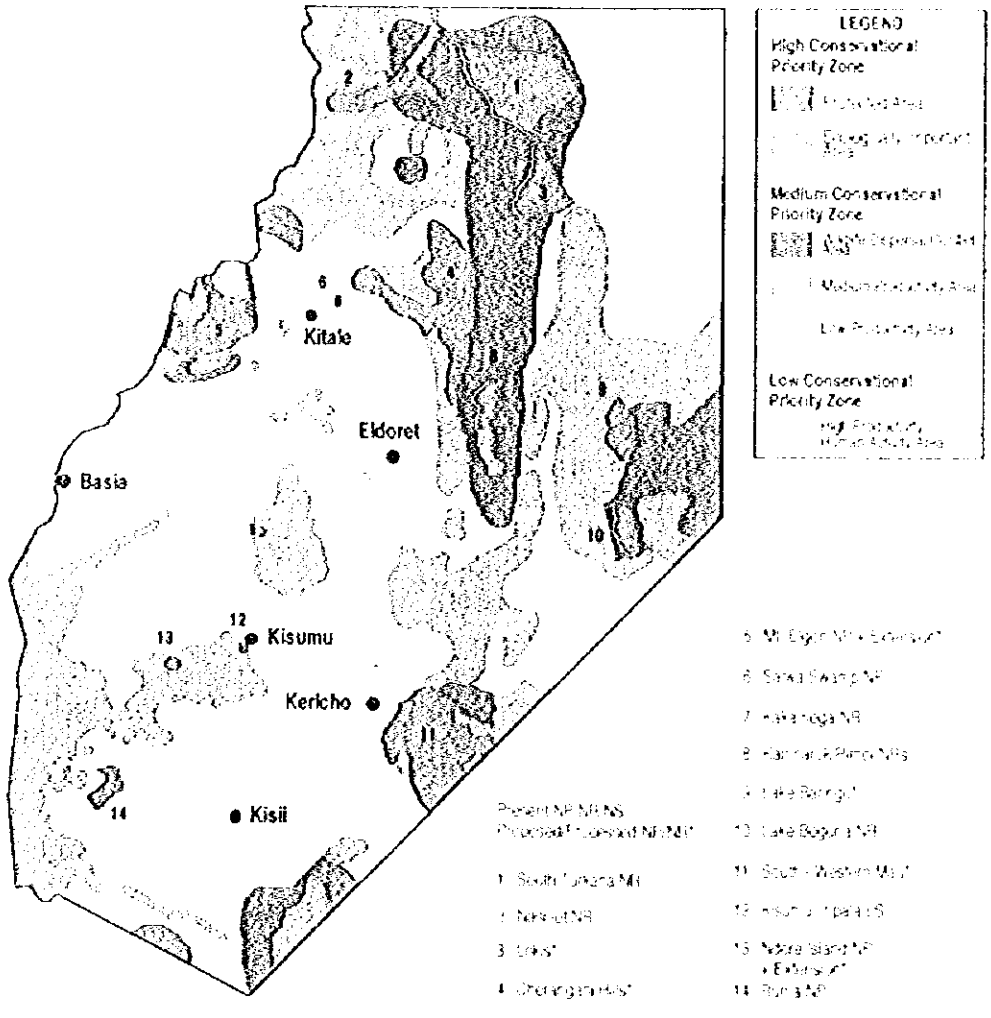
The proposed measures for each consideration are the same as those mentioned in the Central Tourism Region.

Figure 3. 2 Nature Conservation Areas in the Western Tourism Region



### 2.3.2. Tourism Considerations

In the case of tourism development in mountain or forest areas, such as Mt. Elgon, it should be avoided as much as possible to alter the natural landscape, to fell trees, to construct large-scale facilities and to pollute drainage basins; since unsuitable development may cause siltation and water pollution in Lake Victoria through the Nzoia River.

As for wetlands, such as Lake Baringo, it needs to maintain its water quality by pollution control and preventive measures for siltation, caused by soil erosion in its surrounding areas. In this case, soil erosion on the Turgen and Kamasha Hills and the Elgeyo/Mau Escarpments must be prevented. Additionally, tourism development in well-preserved or high sensitive wetland, such as Saiwa Swamp NP and Lake Bogoria NR, must be carried out with the greatest care.

Since similar problems to those in the Central Tourism Region may occur in future, the same preventive measures as in the Central Tourism Region should be taken in this region.

In order to implement these actions effectively, it is recommended to establish or improve some facilities for visitor services and undertake human resource training. Those facilities are Field Study Centre in Kakamega NR, Animal Orphanage in Kisumu Impala LS and Information Centres for all NPs and NRs.

## 3. Target Arrivals and Room Requirement

Targeted visitor arrivals to the region up to the year 2010 are set as follows. The target is based on the framework discussed in Volume 1.

**Table 3. 1 Targeted Visitor Arrivals to 2010**

| Year | 1993 | 2000 | 2005 | 2010 |
|---|---|---|---|---|
| Visitor Arrivals ('000) | 115 | 191 | 305 | 415 |
| Average Length of Stay (Nights) | 4.0 | 4.0 | 4.5 | 5.0 |

Source: JICA Study Team

**Table 3. 2 Room Requirement by Each Tourism Area**

Unit:Number of Rooms

| Tourism Region/Area | Sub-area | Hotel/Lodge/Permanent Camp | | | | Homestead/Villa/Apartment/Tent | | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Existing | 2000 | 2005 | 2010 | Existing | 2015 | 2020 | 2025 | Existing | 2030 | 2035 | 2040 |
| 30 Western | Region total | 764 | 1,950 | 3,400 | 5,010 | 5 | 240 | 200 | 280 | 769 | 2,190 | 3,600 | 5,290 |
| 31 Kericho/Kisii | Kericho | 80 | 200 | 500 | 850 | | | | | 80 | 200 | 500 | 850 |
| 32 Southern Victoria | | 84 | 80 | 120 | 140 | | | | | 84 | 80 | 120 | 140 |
| 33 Northern | Kisumu | 187 | 500 | 700 | 850 | | | | | 187 | 500 | 700 | 850 |
| | Kakamega | 77 | 100 | 200 | 300 | | | | | 77 | 100 | 200 | 300 |
| 34 Mt. Elgon | Kitale | 8 | 300 | 650 | 1,000 | 5 | 110 | 120 | 200 | 13 | 410 | 770 | 1,200 |
| | Mt. Elgon | 20 | 120 | 250 | 450 | | | 40 | 80 | 20 | 120 | 290 | 530 |
| 35 Pclot | Nasolot | | 50 | 80 | 120 | | 130 | 40 | | 0 | 180 | 120 | 120 |
| 36 Rift Valley Lakes | Baringo | 143 | 400 | 600 | 850 | | | | | 143 | 400 | 600 | 850 |
| 37 Eldoret | | 165 | 200 | 300 | 450 | | | | | 165 | 200 | 300 | 450 |

Source: JICA Study Team

## 4. Tourism Products Development Strategy

### 4.1. Development Directions

The region is less frequented by tourists than other priority tourism regions and it has no established tourism image at present. As the region's landscape contradicts the tourist' image of Kenya, invitation of tourism into the region requires a long-term strategy to introduce a lush forest image to the source markets.. The introduction of Rail Safari from the coast to Kitale will be a catalyst for tourism development in the region.

Mt. Elgon/Kitale and the Rift Valley lakes will be the primary cores of tourism in the region. Introduction of resort tourism is planned in the areas as well as in Kericho and Kisumu. Unique cultures of various ethnic groups could be new tourist attractions when proper arrangements are made. Planning directions are summarised as follows.

- Introduction of resort tourism
- Promotion of alternative wildlife tourism
- Utilisation of local industry, and
- Introduction of village tourism.

### 4.2. Target Markets

In the short-term, target markets will be special interest tourists in omithology, entomology (or, more specifically, butterfly) and various wildlife as well as anthropology. The region, however, should strive to open its markets to a wider range of people and establish its name as a resort destination in the long-term perspective to appeal to:

- General and experienced safari tourists
- Culturally motivated tourists, who are interested in Kenya's colourful tribal cultures, and
- Special interest tourists in wildlife, omithology, entomology and anthropology.

### 4.3. Regional Development Concept

The above planning directions specify a regional concept for planning as follows :

- Mountain resort
- An advanced safari destination, and
- African village life.

## 4.4. Potential Tourism Products and Their Development Plans

### 4.4.1. Village Tourism

#### (1) Directions for Development

The study team defines "village tourism" as a type of tourism, in which tourists enjoy a stay in a rural community with local and intimate atmosphere combined with cultural and natural experiences. Some regard this type of tourism as a sub-category of ecotourism. This should not be mass-tourism, as excessive tourist inflow could easily destroy indigenous culture and cause social problems. Village tourism, however, feeds back directly economic benefits to the local community with little outside leakage, and serves to promote the revaluation of traditional culture.

The study team proposes a pilot project to introduce village tourism in the Kisii area as it has famous soapstone handicrafts as a catalyst for tourism development. This does not mean that only this area has tourism potential for village tourism, but almost any part of Kenya has possibility to develop this type of low-impact tourism, if they make proper arrangements.

The target market should be culturally motivated tourists, who are properly fit, intellectual and environmentally conscious.

#### (2) Measures

##### a. Setting up of a Local Tourism Organisation

Arrangement and promotion of village tourism requires a local tourism organisation. The organisation should plan and co-ordinate tourism development in the area with the assistance of MOTW.

##### b. Introduction of New Local Tourist Attractions

Introduce tourist attractions based on the locality of the area. Possible attractions are:

- Visit to soapstone carvers' and painters' workshops
- Kisii hill trekking, and
- Tourists' participation in local festivals and events.

##### c. Development of a Soapstone Museum

A museum that displays masterpieces of soapstone carvings would be a tourist attraction and would also serve to sophisticate the skill and sense of local carvers and painters. It could be attached to the Kisii Museum that is proposed later in this section.

**d. Development of Accommodations Based on Local Architectural Style**

Develop tourist accommodations based on local architectural style. Amenity of the accommodation, however, should satisfy the international standard.

**e. Utilisation of Local Cuisine**

Efforts should be made to find out local food that is accepted and appreciated by international tourists.

### 4.4.2. Inland Resorts

**(1) Directions for Development**

Although some wildlife safari tours visit the region at present, they stay only one night or two at a site and resort tourism is almost non-existent in the region. Mt. Elgon/Kitale is identified as the core of resort tourism in the region. Other resort areas include Lake Baringo, Kericho, and Kisumu.

**(2) Measures**

**a. Transition from Stop-overs to Resorts**

Since the area has not established its name as a resort destination, it should target to attract safari tours during the first stage. Resort areas should make efforts to extend the length of stay by introducing various attractions, and by improving amenity in and around resort areas.

**b. Development of Mt. Elgon Highland Resort**

Mt. Elgon/Kitale is the primary core of tourism in the Western Tourism Region. Elephant caves in Mt. Elgon National Park have been the primary attraction of the area, but future attractions should include trekking and climbing of Mt. Elgon, walking safaris in Kakamega forest and Saiwa swamp, excursions to the scenic Kerio Valley, and some cultural attractions visited from the resort area.

**c. Development of Baringo Lake Resorts**

Baringo resort is the base for wildlife tourism in Baringo and Bogoria lakes. Primary attraction will be wildlife tourism centred on ornithology.

**d. Other Resort Areas**

Scenic views of tea plantations and tea factory tours are the principal attractions for the Kericho highland resort. The future road development plan will make the Kericho/Kisii area an entrance to the Western Tourism Region from Masai Mara.

Kisumu could be the base for boat safaris on Victoria Lake to archaeological sites on Rusinga Islands.

### 4.4.3. Nature and Wildlife Tourism

#### (1) Directions for Development

Soapstone carving in Kisii and tea plantations in Kericho are the principal local products and industries that have tourism potential.

#### (2) Measures

##### a. Promotion of Alternative Wildlife Tourism

The region provides different types of wildlife tourism from that of major national parks and reserves. They are bird/butterfly watching at Lake Baringo and Bogoria and in Kakamega Forest, walking safaris in Saiwa swamp and mountain climbing on Mt. Elgon. The region should publicise the differences to potential tourists, who need a change in their safari itinerary.

##### b. Promotion of "Forest" Image

The "forest" image needs more promotion in the international market in the long-term perspective in order to diversify Kenyan tourism. This strategy would also apply to the Central Tourism Region that also abounds in lush forest areas.

### 4.4.4. Archaeological Sites and Local Museums

#### (1) Outline and Objectives

Develop and improve museums and archaeological sites in the region.

#### (2) Measures

##### a. Development and/or Improvement of Local Museums

Improve and/or develop museums in Kisumu, Kitale, Baringo and Kisii not only to display ethnic cultures to tourists, but also to promote local people's awareness of their own cultural heritage and tradition.

##### b. Conservation and Tourist Facility Improvement of Archaeological Sites

Develop "museum parks" at Fort Ternan and Songhor in Kericho, Thimlich Ohinga and wall painting on Rusinga Island.

### 4.4.5. Local Products and Industry

#### (1) Directions for Development

Utilise local industries to motivate tourists to visit the region as well as to maximise tourists spending. Observation of the production process accompanied by shopping of products at the sites, where they are produced, makes a great attraction for tourists.

Sophistication of local foods and/or introduction of dishes and/or sweets made from local products could be tools to direct localities for tourists.

#### (2) Measures

**a. Utilisation of Tea**

Kenyan tea is world famous and has, therefore, potential to attract tourists to the Kericho/Kisii area. Tea plantation tours are currently conducted to a limited extent, but these should target more tourists. This should link up with highland resort development in the Kericho area.

Give tourists more opportunities to buy locally grown tea of high quality. Provide tourists with more places to taste locally grown tea with good amenity and enjoying the scenic view of Kericho hills. Introduce cakes for afternoon tea made of local products. There are examples of tea-flavoured ice creams and tea-flavoured cakes outside of Kenya.

**b. Promotion of "Fish Dishes"**

Victoria Lake and Rift Valley lakes abounds in lake foods, such as Nile Perch. These lake foods could be a gourmet attraction like seafood at the coast by sophisticating cooking methods.

**c. Utilisation of Kisii Soapstone Carving**

This has already been discussed in the section on village tourism.

## 4.5. Tourism Facilities Development Plan

### 4.5.1. Tourism Products related Facilities

To facilitate the tourism products identified in the preceding section, several programmes for improving or upgrading of existing promotional activities, institutional set-up and organisations, infrastructure and facilities projects for supporting tourism products are necessary. Table 3. 3 shows the proposed programmes and projects for each of the tourism product in the Western Tourism Region.

## Table 3. 3 Formulation of Programmes and Projects of Tourism Products for the Western Tourism Region (1)

| No. | Products | Description | Location | Resources to be Utilised | Necessary Programme and Project | |
|---|---|---|---|---|---|---|
| | | | | | Institutional/ Promotional Programmes | Infra. & Facility Project |
| Western Tourism Region | | | | | | |
| WE-MU-1 | Fort Teman Park Development | Promoting visitors by improving archaeological site and attaching tourist facilities | Kericho & Kisii | Fort Temaim archaeological site | | Museum improvement, Excavation Field Conservation, Visitor Facilities Development |
| WE-MU-2 | Songhor Park Development | Promoting visitors by improving archaeological site and attaching tourist facilities | Kericho & Kisii | Songhor archaeological site | | Museum improvement, Excavation Field Conservation, Visitor Facilities Development |
| WE-MU-3 | Thimlich Ohinga Museum Park Development | Promoting visitors by improving archaeological site and attaching field museum and tourist facilities | Kisumu & Victoria Lake Shore | Thimlich Ohinga historical monument | | Museum improvement, Excavation Field Conservation, Visitor Facilities Development |
| WE-MU-4 | Conservation of Rusinga Wall Painting | Conserving wall painting and developing tourist facilities | Kisumu & Victoria Lake Shore | Wall Painting at Rusinga Island | | Wall Painting Conservation Project, Excavation Field Conservation, Visitor Facilities Development |
| WE-MU-5 | Kericho Museum Development | Developing new museum | Kericho & Kisii | Kipsigis culture and traditional tools and equipment<br>History of Tea Plantation at Kericho | | Museum improvement, Visitor Facilities Development |
| WE-MU-6 | Kisii Soapstone Museum Development | Developing new museum | Kericho & Kisii | Soapstone, Kisii culture and traditional tools and equipment | | Museum improvement, Visitor Facilities Development |
| WE-MU-7 | Improvement of Kisumu Museum | Improving Kisumu Museum with Tourist supporting facilities | Kisumu & Victoria Lake Shore | Kisumu Museum | | Museum improvement, Visitor Facilities Development |
| WE-MU-8 | Improvement of Kitale Museum | Improving Kisumu Museum with Tourist supporting facilities | Mt. Elgon/ Kitale | Kitale Museum | | Museum improvement, Visitor Facilities Development |
| WE-MU-9 | Kabarnet Museum Development | Developing new museum | Rift Valley Lakes | Old architecture at colonial era, kanenjin culture and traditional tools and equipment | | Museum improvement, Visitor Facilities Development |
| WE-MU-10 | Baringo District Museum Development | Developing new museum | Baringo | Baringo District Museum | | Museum improvement, Visitor Facilities Development |
| WE-NP-1 | Improvement of Ruma National Park | providing visitor supporting facilities | Kisumu & Victoria Lake Shore | Ruma National Park | | Visitor Amenity Facilities |
| WE-NP-2 | Development of Lake Simbi Crater | Developing tourist facilities in Lake Simbi Crater | Kisumu & Victoria Lake Shore | Lake Simbi Crater | | Visitor Amenity Facilities |
| WE-NP-3 | Improvement of Kakamega National Reserve | Developing walking safari facilities at Kakamega National Reserve | Kisumu & Victoria Lake Shore | Kakamega National Reserve | | Visitor Amenity Facilities |
| WE-NP-4 | Improvement of Mt. Elgon Safari | Promoting mountain safari with providing tourist facilities | Mt. Elgon/ Kitale | Mt. Elgon National Park | | Visitor Amenity Facilities |
| WE-NP-5 | Improvement of Saiwa Swamp National Park | Providing visitor supporting facilities | Mt. Elgon/ Kitale | Saiwa Swamp National Park | | Visitor Amenity Facilities |
| WE-NP-6 | Improvement of Nasolot National Reserve | Providing visitor supporting facilities | Pokot | Nasolot National Reserve | | Visitor Amenity Facilities |
| WE-NP-7 | Improvement of South Turkana National Reserve | Providing visitor supporting facilities | Pokot | South Turkana National Reserve | | Visitor Amenity Facilities |
| WE-NP-8 | Improvement of Lake Bogoria National Park | Providing visitor supporting facilities | Rift Valley Lakes | Lake Bogoria National Park | | Visitor Amenity Facilities |

Source: JICA Study Team

## Table 3. 3 Formulation of Programmes and Projects of Tourism Products for the Western Tourism Region (2)

| No. | Products | Description | Location | Resources to be Utilised | Necessary Programme and Project | |
|---|---|---|---|---|---|---|
| | | | | | Institutional/ Promotional Programmes | Infra. & Facility Project |
| WE-NP-9 | Improvement of Kamnarok National Reserve | Providing visitor supporting facilities | Rift Valley Lakes | Kamnarok National Reserve | Pricing Programme | Visitor Amenity Facilities |
| WE-WF-1 | Improvement of View Point at Kosup | Creating appropriate atmosphere to tourists and providing information facilities | Kosup | Wayside Facility | | Tourist Wayside Facility Area Development |
| WE-WF-2 | Improvement of View Point at Timboroa | Creating appropriate atmosphere to tourists and providing information facilities | Timboroa | Wayside Facility | | Tourist Wayside Facility Area Development |
| WE-WF-3 | Improvement of View Point at Kericho | Creating appropriate atmosphere to tourists and providing information facilities | Kericho | Wayside Facility | | Tourist Wayside Facility Area Development |
| WE-VA-1 | Promotion of Tourism at Kerio Valley | Promoting bird watching and butterfly watching with providing tourist supporting facilities | Rift Valley Lakes | Kerio Valley | | Visitor Amenity Facilities |
| WE-VA-2 | Promotion of Village Tourism at Kisii | Promoting village tourism as a pilot project by providing tourist facilities and setting up local organisation | Kericho & Kisii | Traditional culture such as cuisine, dance, habitation, etc. | Local Tourism Organisation Programme, Local Cuisine Sophistication Programme, Education Programme | Tourist Amenity Facilities development Project |
| WE-VA-3 | Development of Resting Facilities along northern Lake Victoria | Increasing visitors by providing tourist facilities | Kisumu & Victoria Lake Shore | Lake Victoria | | Tourist Resting and Amenity Facilities Development Project |
| WE-AT-1 | Introduction of Rail Safari | Promoting tourism use of railway by introducing luxurious trains and special diagram | Mt. Elgon/ Kitale | Railway, rail stations, scenery, NP & NR | Tourism Train introduction Programme | Introduction of luxurious and special design coaches, Railway Track Improvement Project |
| WE-AT-2 | Formulation of Kericho Tea Plantation Tour | formulating new tour route by utilising tea plantation | Kericho & Kisii | Tea plantation | Formulation of new tour route | |
| WE-AT-3 | Formulation of Kisii Soapstone Factory Tour | formulating new tour route by utilising soapstone processing factories | Kericho & Kisii | Soapstone factories | Formulation of new tour route | |
| WE-SP-1 | Introduction of Lake Victoria Cruise | Introducing cruising tour by providing marina facilities | Kisumu & Victoria Lake Shore | Lake Victoria, islands in Lake Victoria | Formulation of Cruising route | Marina Development Project |
| WE-SP-2 | Promotion of Kisii Hill Trekking | Developing trekking facilities | Kericho & Kisii | Kisii hill | | Trekking course and Facilities Development Project |
| WE-ST-1 | Improvement of Tourist Amenity at Kisumu | Creating appropriate atmosphere to tourists and providing information facilities | Kisumu & Victoria Lake Shore | Kisumu city | | Beautification |
| WE-ST-2 | Improvement of Tourist Amenity at Kakamega City | Creating appropriate atmosphere to tourists and providing information facilities | Kisumu & Victoria Lake Shore | Kakamega city | | Beautification |
| WE-ST-3 | Improvement of Tourist Amenity at Kitale | Creating appropriate atmosphere to tourists and providing information facilities | Mt. Elgon/ Kitale | Kitale city | | Beautification |
| WE-FU-1 | Utilisation of Fresh Water Fish of Lake Victoria | Promoting tourism use of fresh water fish of Lake Victoria | Kisumu & Victoria Lake Shore | Fresh water fish | Farmers Group's Tourism Participation Programme<br>New Cuisine Development Programme<br>Education Programme<br>Goods Distribution Improvement Programme | Cold Storage<br>Training Facilities |
| WE-IN-1 | Development of Lake Victoria Resort | Developing tourist base for long-term stay with various attractions | Kisumu & Victoria Lake Shore | Scenery, attractions of Lake Victoria | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development programde | Infrastructure Provision Projects for Tourism Promotion Zones |
| WE-IN-2 | Development of Kakamega Highland Resort | Developing tourist base for long-term stay | Kisumu & Victoria Lake Shore | Kakamega National Reserve and forest | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development programde | Infrastructure Provision Projects for Tourism Promotion Zones |
| WE-IN-3 | Development of Mt. Elgon Resort | Developing tourist base for long-term stay | Mt. Elgon/ Kitale | Mt. Elgon National Park | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development programde | Infrastructure Provision Projects for Tourism Promotion Zones |
| WE-IN-4 | Development of Lake Baringo Resort | Developing tourist base for long-term stay with water sports facilities | Rift Valley Lakes | Scenery of Lake Baringo, birds, wild animals | Land Use Control Programme (introduction of Tourism Promotion Zone), Commercial and Public facilities Development programde | Infrastructure Provision Projects for Tourism Promotion Zones |

Source: JICA Study Team

### 4.5.2. Accommodation Facilities

In accordance with the framework presented in Table 3. 2, the required number of rooms have been determined. The accommodation facilities are roughly classified into three classes, which are high class, medium class and low class.

**Table 3. 4 Number of Rooms Required in the Western Tourism Region**

| Tourism Region | Class | -2000 Increase No of Rms | -2005 Increase No of Rms | -2010 Increase No of Rms | Total Increase No of Rms | % |
|---|---|---|---|---|---|---|
| Western | High | 375 | 457 | 518 | 1,350 | 32 |
| | Medium | 447 | 550 | 605 | 1,602 | 38 |
| | Low | 364 | 445 | 486 | 1,295 | 31 |
| | Total | 1,186 | 1,450 | 1,610 | 4,246 | |

Source: JICA Study Team

### 4.5.3. Tourist Service Facilities

The following tourist service facilities are proposed in the Western Tourism Region. The detailed development concept and proposed facility to be provided have been discussed in Volume 1.

- Visitor Facilities Development Project
- Visitor Amenity Facilities Project
- Tourist Centre Project
- Tourist Wayside Facility Area Development Project, and
- City Beautification Project.

**Table 3. 5 Tourist Service Facilities in the Western Tourism Region**

| | Number of Projects |
|---|---|
| Visitor Facilities Development Project | 10 |
| Visitor Amenity Facilities Project | 11 |
| Tourist Centre Project | 0 |
| Tourist Wayside Facility Area Development Project | 3 |
| City Beautification Project | 3 |

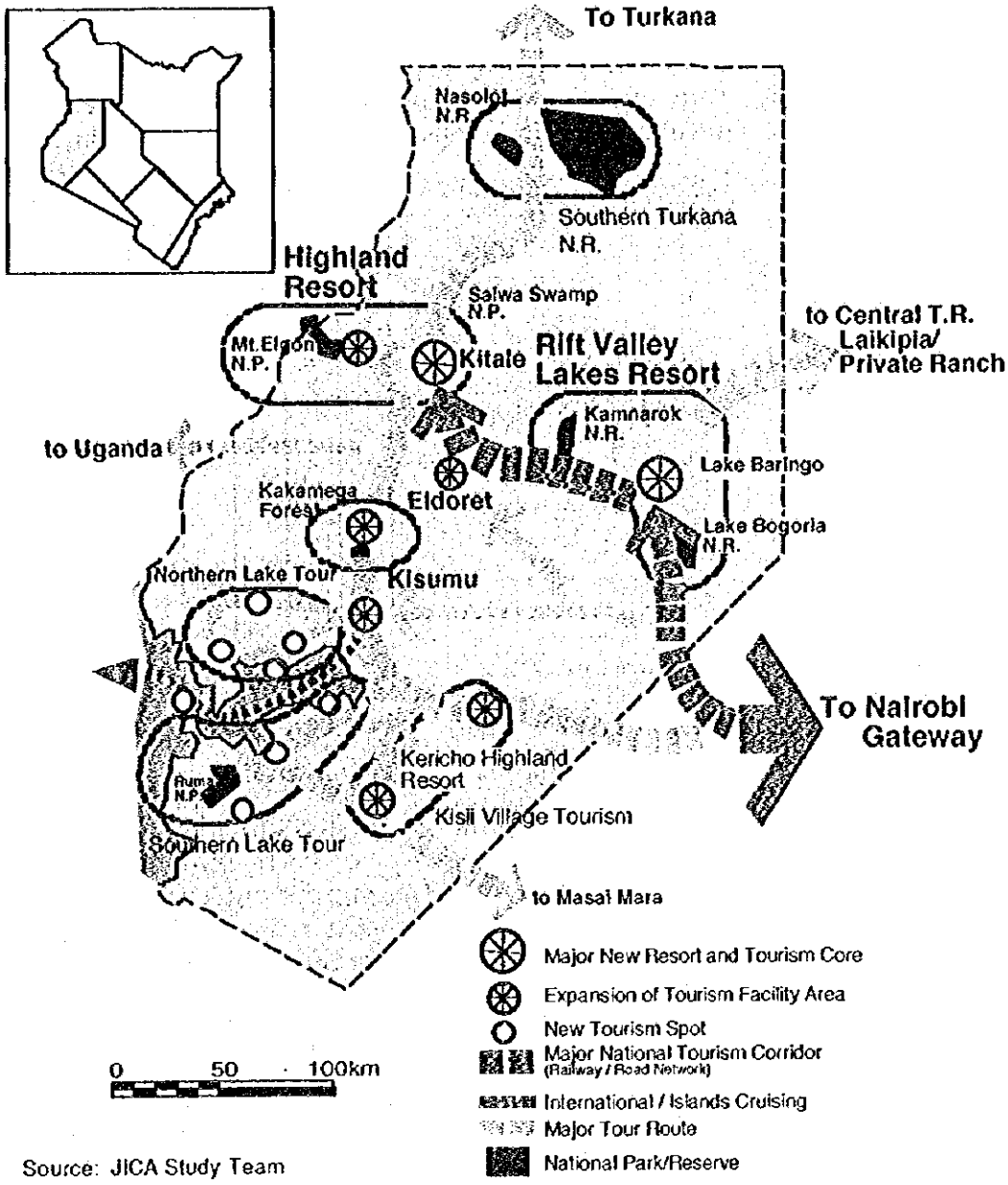
Source: JICA Study Team

## 4.6. Spatial Structure and Priority Tourism Areas

### 4.6.1. Spatial Tourism Structure and Development Scenario

A spatial structure of the Western Tourism Region has been formulated on basis of the tourism resources, environmental conditions, transport network and utilities' availability. It consists of major tour routs, tourism cores and spheres of tourism activities. The scale and location of tourism cores are also examined. The spatial structure of the Western Tourism Region is shown in Figure 3. 3.

Figure 3. 3 Spatial Structure of the Western Tourism Region




Source: JICA Study Team

Formation and improvement of tourism cores are significant for the realisation of the target tourist arrivals and stay in the tourism region.

The transportation network improvement plan, that is mainly access road improvements, is formulated based on the proposed spatial structure.

Other infrastructure development plans, such as water supply, sewerage and power supply to support the tourism cores are also considered.

### 4.6.2. Tourism Areas in the Western Tourism Region

#### (1) Characteristics of the Tourism Areas

Based on the tourism product development strategy for the Western Tourism Region, suitability of tourism areas for respective development directions are identified as shown in Table 3. 6.

**Table 3. 6 Tourism Areas in the Western Tourism Region**

| NO. | Development Direction / Tourism Area name | Kericho/Kisii | Southern Victoria | Northern Victoria | Mt. Elgon | Pokot | Rift Valley Lakes | Eldoret |
|---|---|---|---|---|---|---|---|---|
| 1 | Introduction of resort tourism | | | ● | ● | | ● | |
| 2 | Promotion of alternative wildlife tourism | | ● | ● | ● | | ● | |
| 3 | Utilisation of local industry | ● | | | | | | |
| 4 | Introduction of village tourism | ● | | | | | | |
| 5 | Wildlife & nature tourism | | | | ● | ● | ● | ● |

Source : JICA Study Team

#### (2) Accommodation Concentration Level

Appropriate percentages of accommodation facilities to be located within the tourism core(s) of each tourism area are determined as shown in Table 3. 7. The supporting infrastructure for the tourism cores are planed based on the scale of the tourism cores calculated from the accommodation concentration levels.

**Table 3. 7 Accommodations Concentration Level**

| Tourism Area | Accomodation facilities | | Utilities in Tourism Core | | |
|---|---|---|---|---|---|
| | * Accommodation concentration level | **Number of rooms located inside the core(s) | Water supply | Sewerage | Power supply |
| Kericho/Kisii | 0.3 | 300-400 | P/I | I | P |
| Southern Victoria | 0.3 | NA | I | I | P |
| Northern Victoria | 0.5 | 500-600 | P/I | P/I | P |
| Mt. Elgon | 0.4 | 600-700 | P/I | I | P/I |
| Pokot | 0 | NA | I | I | I |
| Rift Valley Lakes | 0.9 | 800-1000 | P | P | P |
| Eldoret | 0.3 | 100-200 | P/I | I | P |

Note: P - Connect to public line, P/I - Provide individually
* Type of accommodations are Hotels and Lodges only
** Number of rooms in year 2010
NA - Not available
JICA Study Team

### 4.6.3. Priority Development Tourism Area

Seven (7) tourism areas are designated in the Western Tourism Region. Tourism Areas are evaluated considering the potential development of the tourism core(s). Formation of tourism core(s) in the designated tourism area is quite important for tourism development. The evaluation result of the designated tourism areas are summarised in Table 3. 8.

**Table 3. 8 Tourism Areas in the Western Tourism Region**

| NO. | Evaluation Items / Tourism Area name | Kericho/Kisii | Southern Victoria | Northern Victoria | Mt. Elgon | Pokot | Rift Valley Lakes | Eldoret |
|---|---|---|---|---|---|---|---|---|
| 1 | Suitability for resort accomodation | 2 | 1 | 1 | 3 | 1 | 2 | 1 |
| 2 | Environmental stability | 3 | 2 | 3 | 2 | 1 | 1 | 3 |
| 3 | Accessibility to major tourism products | 2 | 2 | 2 | 3 | 2 | 3 | 1 |
| 4 | Contribution to up-market shift | 2 | 2 | 1 | 3 | 2 | 3 | 1 |
| 5 | Contribution to rural employment | 2 | 3 | 1 | 2 | 1 | 3 | 1 |
| | Total score | 11 | 10 | 8 | 13 | 7 | 12 | 7 |

Source: JICA Study Team

The results of the evaluation indicate that Mt. Elgon and the Rift Valley Lakes have high development potential. In this Master Plan Mt. Elgon and the Rift Valley Lakes are selected as priority development tourism areas.

Tourism core development in Mt. Elgon will be promotion of highland resort development. Integration of existing tourism resources and formation of new accommodation bases will be required. At the Rift Valley Lakes, promotion of alternative wildlife tourism by using unique tourism resources will be the most successful direction. Environmentally sound development is the most significant issue for both of the priority tourism areas.