In Chapter 6

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LIST OF MAPS

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WHAT THIS CHAPTER SHOWS

To demonstrate that Kenya's tourism economy depends on a foundation of healthy ecosystems, this chapter highlights key ecosystem components and their uses. The first section presents ecosystem assets important for nature-based tourism: maps show the system of protected areas, areas rich in birdlife and bird biodiversity, the locations where wildlife with high 'viewing value' concentrate, and a more detailed view of ecosystem assets along the Indian Ocean coast. The second section looks at the patterns of use of these ecosystem assets. A brief overview of tourism infrastructure is followed by a series of graphs summarizing recent trends in numbers, revenue, and distribution of visitors among the main tourist attractions. The chapter concludes with a more detailed examination of visitor and revenue patterns for Kenya's protected areas.

Tourism

Regarded by many as the "jewel of East Africa," Kenya is one of the world's foremost tourist destinations. Tourism in Kenya is based primarily on the country's stunning natural attractions, including magnificent wildlife in their native habitat as well as some of Africa's finest beaches. This unique natural endowment has turned Kenya's tourism industry into a leading economic sector, generating revenues of almost Ksh 49 billion (US$ 700 million) in 2005 and directly employing 176,000 people—about 10 percent of all jobs in the formal sector (CBS 2006).

LINKS BETWEEN ECOSYSTEM SERVICES AND TOURISM IN KENYA

About 70 percent of visitors to Kenya come to enjoy the country's natural beauty and engage in nature-based activities, such as wildlife viewing; hiking; and enjoying sun, sand, and surf on its beautiful beaches (see Figure 6.1). A common factor linking these activities and places is their dependence on healthy ecosystems and the services they provide, including clean air and water, scenic landscapes and vistas, and diverse assemblages of animal and plant species.

One of the paradoxes of such nature-based tourism is that, in the absence of thoughtful, forward-looking management, the relentless pressure of human visitors can degrade the very ecosystem assets that attract tourists in the first place. Over-concentration of tourist activities and infrastructure, notably along some of Kenya's coastal beaches as well as in certain national parks and game reserves, has led to environmental damage as well as a decline in the quality of the tourism experience. Along the coast, beaches have been seriously degraded and polluted, coral reefs and mangrove forests have been substantially damaged or destroyed, and marine species have been harmed. In some game parks, vegetation has been degraded, wildlife behavior has been disrupted, and resources have been overused (Ikiara and Okech 2002).

These troubling trends have helped to erode Kenya's tourist appeal and contributed to the challenges facing the country's tourism industry. In the late 1990s, Kenya experienced steep declines in the tourism sector, with revenues falling about 20 percent annually between 1996 and 1998 (Ikiara and Okech 2002). Domestic instability, combined with widespread fear of global terrorism, depressed tourism activity and earnings well into the first decade of the 21st Century (Ikiara 2001; Belau 2003).

Building a Sustainable Tourism Industry

More recently, the downward slide of the tourism industry has been at least partially reversed, with international arrivals rising by about 40 percent from 2002 to 2005 (see Figure 6.1), and annual tourism earnings more than doubling during the same period (CBS 2004; CBS 2006). However, the industry's future is far from assured, as it confronts strong competition from other wildlife tourism destinations (such as Botswana, South Africa, and Tanzania), as well as ongoing domestic challenges, including electricity and water shortages, environmental degradation, and declining wildlife populations (Ikiara 2001).

It is incumbent upon decision-makers in Kenya's public and private sectors to find the right mix of policies and investments that can foster the growth of sustainable tourism. Tourism marketing continues to focus on traditional attractions thereby perpetuating over-concentration at some sites (Ikiara and Okech 2002). New approaches that can help attract and allocate investment in underutilized areas are needed, while simultaneously protecting the unique landscapes, wildlife, and other ecosystem assets that draw higher-spending tourists. Finding ways to direct a larger share of tourism proceeds to benefit local people and communities is also critically important.

This chapter highlights the role of Kenya's ecosystems in supporting a vibrant tourism sector. It takes a look at the range of ecosystem assets that are important for the industry, including Kenya's network of parks and protected areas, as well as the spatial distribution of selected wildlife species with high 'viewing value.' Later sections focus on patterns of human use, investment, and revenue generation.

KEY ECOSYSTEM ASSETS FOR THE TOURISM SECTOR

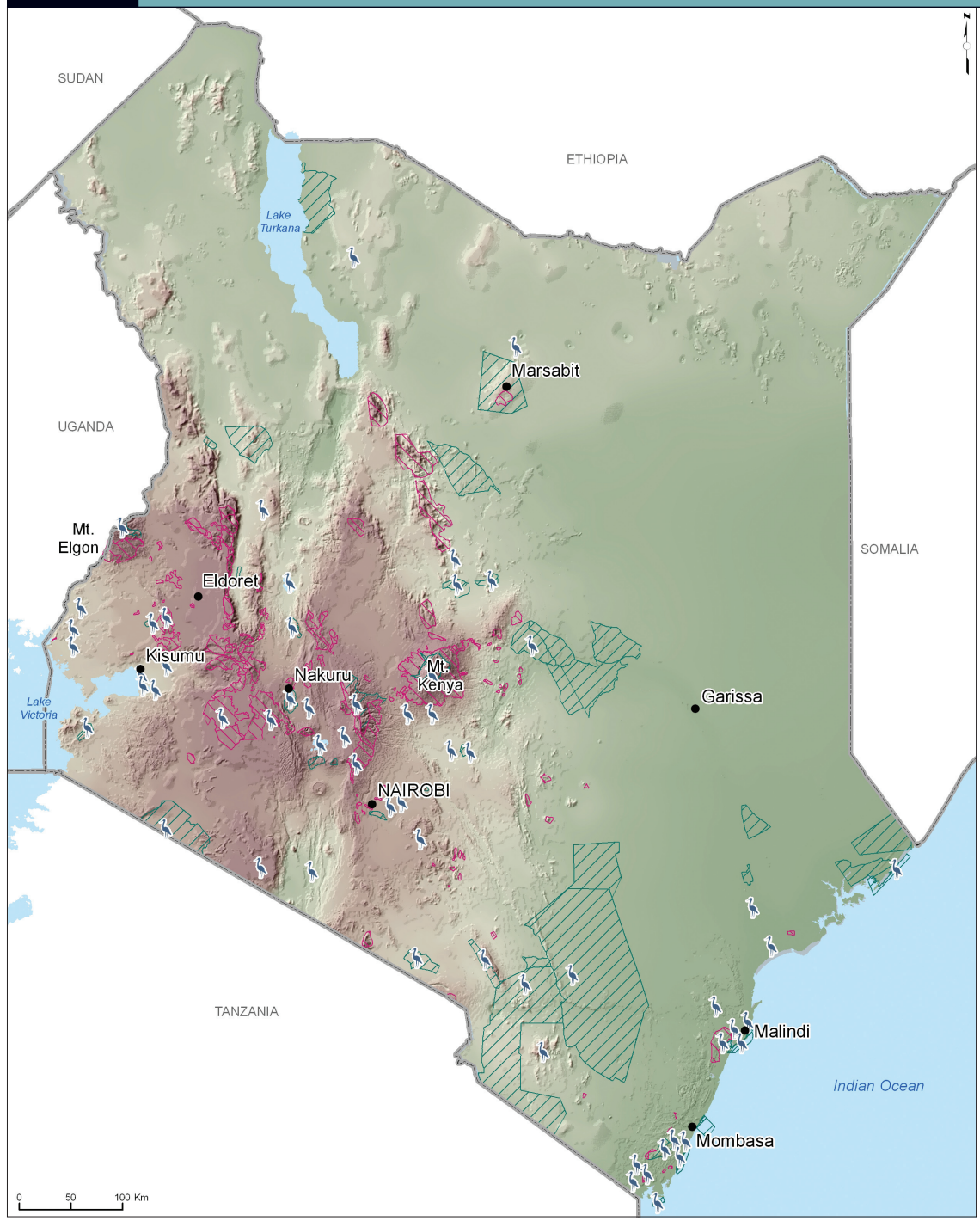
Tourism has a long and notable history in Kenya, pre-dating independence. As early as the 1930s, large numbers of overseas visitors had begun traveling to Kenya on big-game hunting expeditions (United Nations 2002). Today, the typical international visitor still comes to Kenya in search of big game—this time, armed with binoculars and a digital camera. Most overseas tourists spend a night in Nairobi on arrival, embark on a two-day or so safari to view wildlife, and devote the rest of their holiday to a longer stay on the coastal beaches (Ikiara and Okech 2002).

Thus, Kenya's tourism potential is inextricably linked to its natural assets. From the white sand beaches and teeming coral reefs of the Indian Ocean coast to the summits of its majestic mountains, Kenya has been endowed with diverse landscapes of dramatic natural beauty. Running through the country is the most spectacular stretch of the Great Rift Valley, with its stunning geology and its alkaline and freshwater lakes alive with birdlife. The savannas of southern Kenya are home to national parks and game reserves, such as Amboseli, Masai Mara, and Tsavo, that provide unparalleled opportunities for viewing wildlife.

More than 80 of Kenya's top 120 tourist destinations are national parks and wildlife reserves, which encompass some 45,000 square kilometers, or about 8 percent of Kenya's total land area (GoK 1995). Most parks and wildlife reserves are located in rangeland ecosystems (see Map 6.1), which tend to be the least modified, wildest places in Kenya. Dotting the mountain slopes and foothills of Kenya's highland landscapes are several forest reserves, mostly surrounded by more densely settled agricultural lands.

Kenya also contains colorful, diverse birdlife, and bird watching is a small but growing segment of the tourist industry. Some 60 Important Bird Areas (IBAs), covering 5.7 million hectares (10 percent of the country's land area), have been designated,

Map 6.1 Topography, Protected Areas, and Important Bird Areas



Sources: Cities (SoK and ILRI 2000), water bodies (FAO 2000), parks and reserves (IUCN and UNEP/WCMC 2006), 250-meter Digital Elevation Model (SoK, JICA, and ILRI 1996), and centroid of Important Bird Areas (Fishpool and Evans 2001).

The topography of Kenya encompasses dramatic landscapes and magnificent scenery, from the Great Rift Valley to Mount Kenya and the central highlands to the wide, flat vistas of the southern savannas. To safeguard these landscapes and other natural assets, Kenya has invested in a network of protected areas, including national parks and game reserves throughout the country (green hatched areas), as well as forest reserves, located mostly in the central highlands (red hatched areas). Concentrated along the southern coast and in the highlands are Kenya's 60 Important Bird Areas (indicated by blue bird symbols), which are prime spots for bird watching and are globally important for bird conservation.

Note: The map depicts each Important Bird Area by a point in the center of its associated area. Some IBAs are much smaller than the point shown in this national map and others cover a much larger area, such as IBAs associated with the large protected areas of Masai Mara or the two Tsavo National Parks. IBAs range from 1 hectare to more than 1 million hectares in size (Bennun and Njoroge 1999).

indicating sites of international significance for the presence of threatened species, irreplaceable bird populations, or exceptionally large numbers of migratory birds (Bennun and Njoroge 1999).

Some kinds of tourism are more closely linked to ecosystem services than others. Different kinds of tourism place different demands on different types of services. On one end of the spectrum is the tourist who is specifically seeking a 'wilderness experience;' at the other is, for example, the tourist who enjoys being part of a crowd at the beach. Thus, the type of tourism determines the demand for ecosystem services. It also determines the number and density of tourists who can enjoy the recreational, spiritual, and aesthetic services provided by a given ecosystem without compromising these services (Scholes and Biggs 2004).

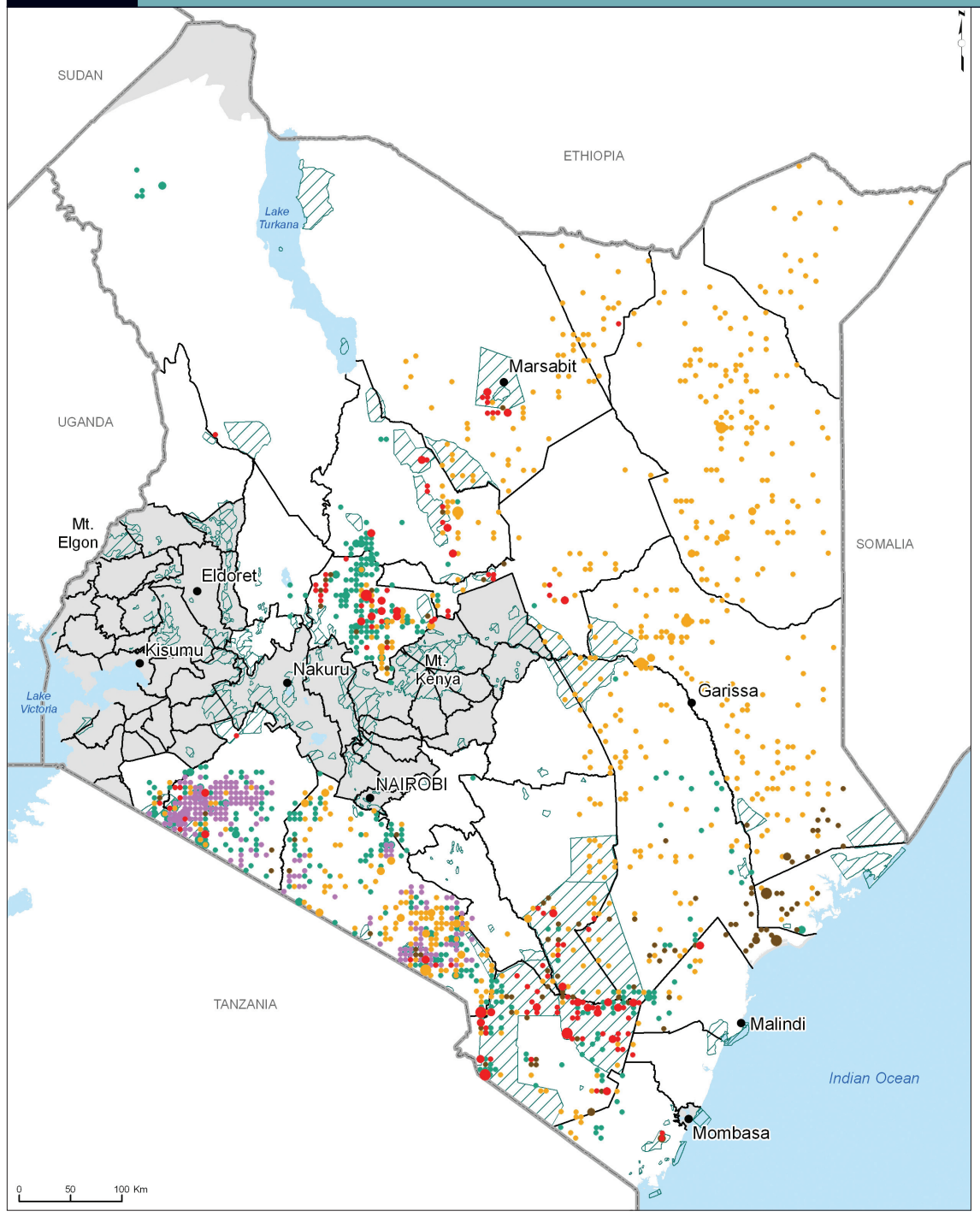
Spatial Distribution of Wildlife with High Tourism Value

Viewing wildlife in its natural habitat is the primary motivation for about 80 percent of international visitors to Kenya (Filion et al. 1994; Ikiara and Okech 2002). Different ecosystems support different wildlife species (see Map 6.2), and well-informed tourists can choose their destinations accordingly.

For instance, the open savanna and bush woodland of Tsavo National Park support elephants, buffaloes, lions, antelopes, gazelles, giraffes, zebras, and a few rhinos; crocodiles, hippos, and a wealth of birdlife also make their homes there. Visitors to densely wooded mountain slopes can see forest-dwelling species, including the black leopards and the black and white colobus monkeys that inhabit the lower slopes of Mount Kenya. Still other species are found near Kenya's mountain lakes, such as the giant flocks of flamingoes at Lake Nakuru or Lake Bogoria, and the egrets, herons, and fish eagles of Lake Baringo (iExplore 2006).

To a large extent, wildlife tourism in Kenya is driven by the 'big five' species: lions, leopards, elephants, rhinoceros, and buffalo. The emphasis on this small group of highly 'charismatic' species originated in the days of big game hunting, when they were considered especially dangerous and

Map 6.2 Spatial Distribution of Selected Species with High 'Viewing Value,' 1994-96



Sources: Administrative boundaries (CBS 2003), cities (SoK and ILRI 2000), water bodies (FAO 2000), parks and reserves (IUCN and UNEP/WCMC 2006), and 1994-96 wildlife numbers (ILRI calculation based on DRSRS 2003, Grunblatt et al. 1995, 1996).

Wildlife is broadly distributed across Kenya, but particular species often exhibit a specific pattern of spatial distribution. For instance, giraffe populations (indicated by golden dots) are found throughout Kenya's rangeland Districts, while elephants are found in the rangelands of Laikipia District as well as Amboseli, Marsabit, and Tsavo National Parks (indicated by red dots). Note that the distribution of some highly charismatic species is not shown, as data on animals that are nocturnal (e.g., lions and leopards) or extremely rare (e.g., rhinos) are not easily collected by aerial survey.

Note: The wildlife counts came from a rangeland census using low-altitude flights. Animals are aggregated to squares of 5 kilometers by 5 kilometers.

ELEPHANT (number)
- > 2,000
- 700 - 2,000
- 90 - 700

BUFFALO (number)
- > 5,000
- 2,000 - 5,000
- 40 - 2,000

GIRAFFE (number)
- > 1,000
- 600 - 1,000
- 50 - 600

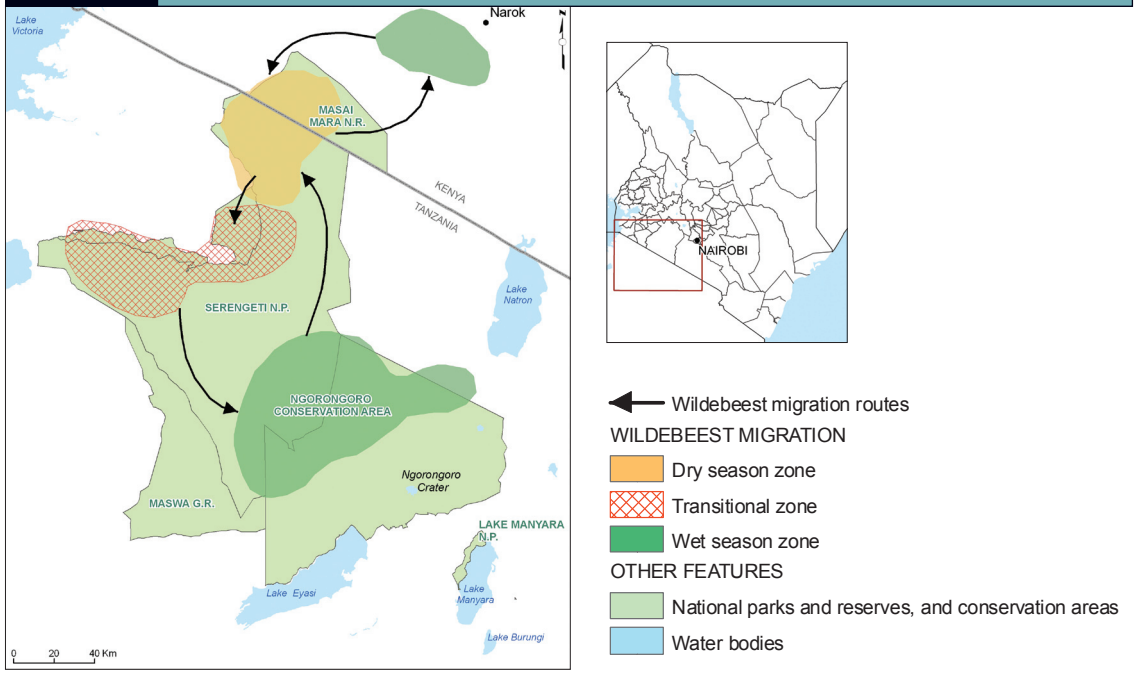
WILDEBEEST (number)
- > 20,000
- 10,000 - 20,000
- 14 - 10,000

ZEBRA (number)
- > 3,000
- 800 - 3,000
- 15 - 800

No observation of any of these species
Not sampled

OTHER FEATURES
District boundaries
National parks and reserves, forest reserves
Water bodies

Map 6.3 Migration of Wildebeest and Zebra in the Mara-Serengeti Ecosystem



Sources: Water bodies (FAO 2000), parks and reserves (IUCN and UNEP/WCMC 2006), and wildebeest migration areas and routes (ILRI digitization based on Serneels and Lambin 2001).

Wildebeest and zebra follow seasonal rainfall patterns as they migrate between the Serengeti plains of Tanzania and the rangelands of Kenya's Narok District. Masai Mara National Reserve provides a source of forage and water for these animals during the dry season (gold-shaded area), while rangelands north of the reserve (dark green-shaded area), near Narok Town, serve as a wet-season grazing area. However, conversion of these rangelands to cropland is disrupting migration patterns, leading to declining wildlife populations.

thus highly prized as the hunter's quarry (Scholes and Biggs 2004). Today, their popularity is perpetuated by marketing. However, promoting a select group of Kenya's wildlife contributes to over-concentration of tourists in a few locations, leading to an erosion in the quality of the tourism experience as well as endangering wildlife and ecosystem integrity (Ikiara and Okech 2002). Meanwhile, other parks and protected areas, richly endowed with different but equally fascinating species, remain underutilized.

A second major wildlife attraction for tourists is the annual migration of wildebeest and zebra in the Mara-Serengeti ecosystem, when thousands of animals risk their lives crossing the Mara River in search of lush green grass. Unfortunately, land conversion north of Masai Mara National Reserve, from open range to wheat farms, is interfering with the northern loop of this migration (see Map 6.3). As a result, wildlife numbers are on the decline, with wildebeest populations in the Masai Mara ecosystem falling from 120,000 in 1977 to 31,000 in 2002 (Ottichilo et al. 2001; Ojwang et al. 2006). While Kenya has gained in food production, changing land use patterns have come at a price: undermining one of the area's principal tourist attractions.

Coastal Ecosystems that Support Tourism

Soon after independence, Kenya shifted the focus of its investments in hotels and tourist infrastructure from big game hunting to beach tourism. Along Kenya's 530 kilometers of Indian Ocean coastline are ecosystems containing a diverse array of assets that are important for tourism, such as sandy beaches and coral reefs—all rich in marine life and supporting a large population of seabirds (Maps 6.4 and 6.5).

Traditionally, Kenya has targeted high-density, mass-market beach tourism that relies on a relatively limited set of ecosystem services—primarily sand, sea, and sun (Ikiara and Okech 2002). Although the range of required ecosystem services may be small, the magnitude of the environmental pressures resulting from high-volume, low-yield coastal tourism can be great.

To date, development of coastal tourism in Kenya has proceeded without much regard for environmental limits or the carrying capacity of coastal ecosystems. Tourism-related impacts have been aggravated by over-concentration of tourism infrastructure and activities in particular areas, notably the beaches of the North Coast (i.e., from Mombasa to Kilifi) and Diani Beach on the South Coast (NEMA 2003).

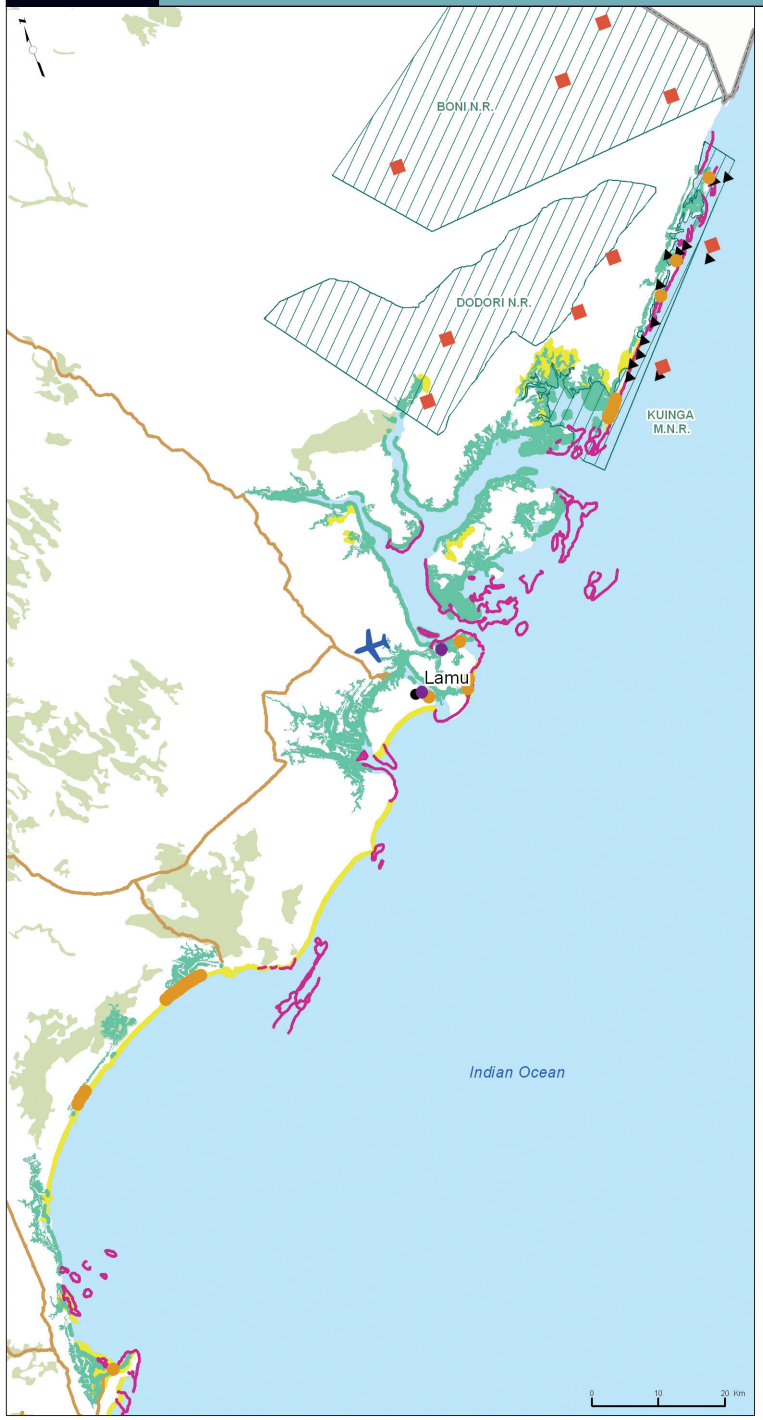
However, some types of coastal tourism require lower visitor densities and a broader, more diverse set of ecosystem services. For instance, dive tourism, a lucrative segment of the global tourism industry, requires clean water, intact reefs, and diverse, colorful species of fish and marine invertebrates.

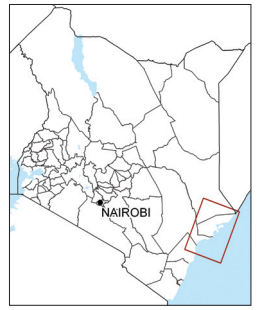
Visitors to Kenya's coast can enjoy a wide range of lower-density activities, such as snorkeling, scuba diving, deep sea fishing, and dhow trips for watching dolphins and dugongs (an herbivorous marine mammal related to the manatee). To protect the ecological integrity of Kenya's coral reefs, the government has designated six marine reserves—Kisite, Kiunga, Malindi, Mombasa, Mpunguti, and Watamu—encompassing a significant portion of the reef and its surrounding waters.

Kenya's coastal ecosystems also contain sites offering fine opportunities for wildlife viewing, such as the remnants of coastal forests that once covered much of East Africa's Indian Ocean shoreline. These areas are extremely important ecologically, and some have untapped potential for development of low-density, ecologically sensitive tourism. For example, in the Arabuko-Sokoke Forest, less than 10 kilometers inland from Malindi, over 260 species of birds have been recorded, including 6 globally threatened species (Arabuko-Sokoke Forest Management Team 2002).

Also a short distance inland from the coast are areas that provide habitat for species with high viewing value. For instance, the Shimba Hills Reserve, about 15–20 kilometers inland from the coast, is famous for its sable antelope, the last remaining breeding population of these animals in the country. The reserve also contains a sizeable leopard population (Kenya.com 2006; iExplore 2006).

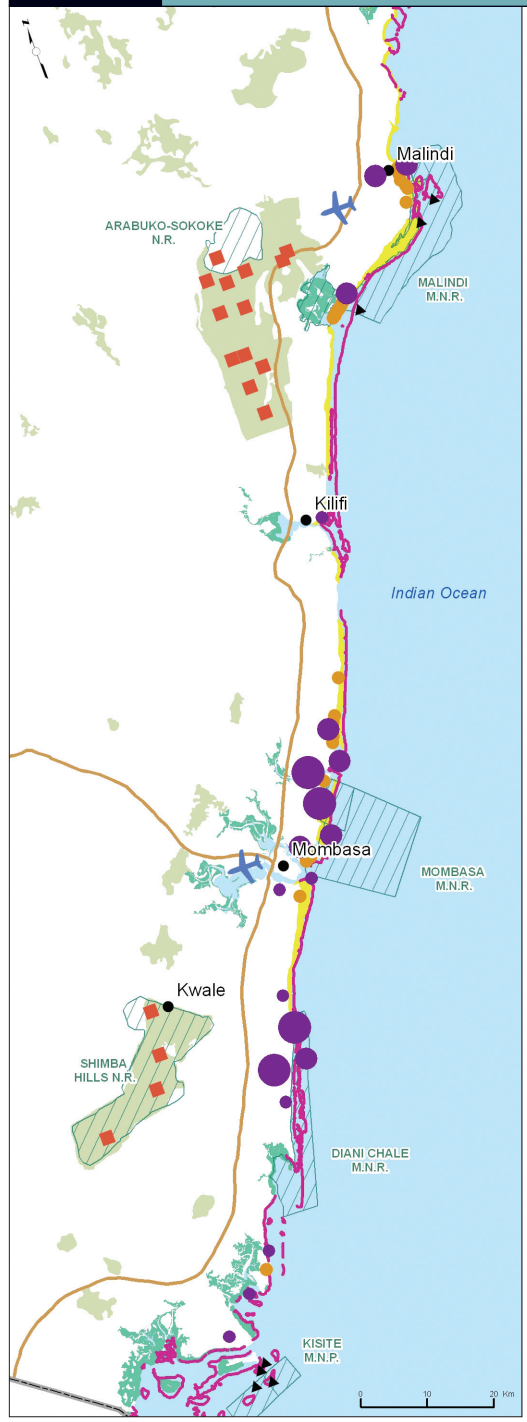
Map 6.4 Northern Coast: Ecosystem Assets and Infrastructure Important for Tourism

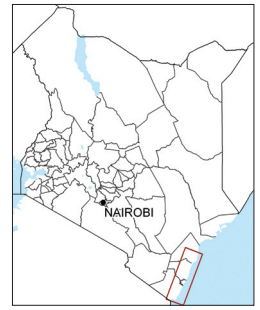




Sources: Cities (SoK and ILRI 2000); water bodies, closed forests, and sand beaches (FAO 2000); parks and reserves (IUCN and UNEP/WCMC 2006); major airfields (NIMA 1997); sable antelope sites, marine mammal sites, and location of hotels (UNEP 1998); major roads, coral reefs, mangroves, and turtle nesting sites (UNDP et al. 2006); and number of hotel beds (ILRI/WRI calculation based on RoK 2003, UNEP 1998).

Map 6.5 Southern Coast: Ecosystem Assets and Infrastructure Important for Tourism





Sources: Cities (SoK and ILRI 2000); water bodies, closed forests, and sand beaches (FAO 2000); parks and reserves (IUCN and UNEP/WCMC 2006); major airfields (NIMA 1997); sable antelope sites, marine mammal sites, and location of hotels (UNEP 1998); major roads, coral reefs, mangroves, and turtle nesting sites (UNDP et al. 2006); and number of hotel beds (ILRI/WRI calculation based on RoK 2003, UNEP 1998).

Kenya's coast contains numerous ecosystem assets that attract tourists, including sandy beaches (yellow-shaded areas) and coral reefs (in purple). The coast also offers opportunities for wildlife viewing, including trips to visit turtle nesting sites (gold dots) and watch dolphins (black triangles), as well as inland visits to nearby forested areas (light green areas) that are home to the rare sable antelope (orange squares). Infrastructure for tourist accommodation (purple dots) is concentrated in and around Mombasa, the Diani Beach area, and Malindi.

TOURIST ATTRACTIONS
- Turtle nesting sites
- Sable antelope sites
- Dugong sites and dolphin schools
- Sand beaches
- Coral reefs

HOTEL ACCOMMODATION
(number of beds)
- > 1,500
- 500 - 1,500
- 20 - 500

FORESTED AREAS
- Closed forests
- Mangroves

OTHER FEATURES
- Major airfields
- Major roads
- National parks and reserves

NATURE-BASED TOURISM: INFRASTRUCTURE, VISITOR AND REVENUE TRENDS, AND SPATIAL DIVERSIFICATION

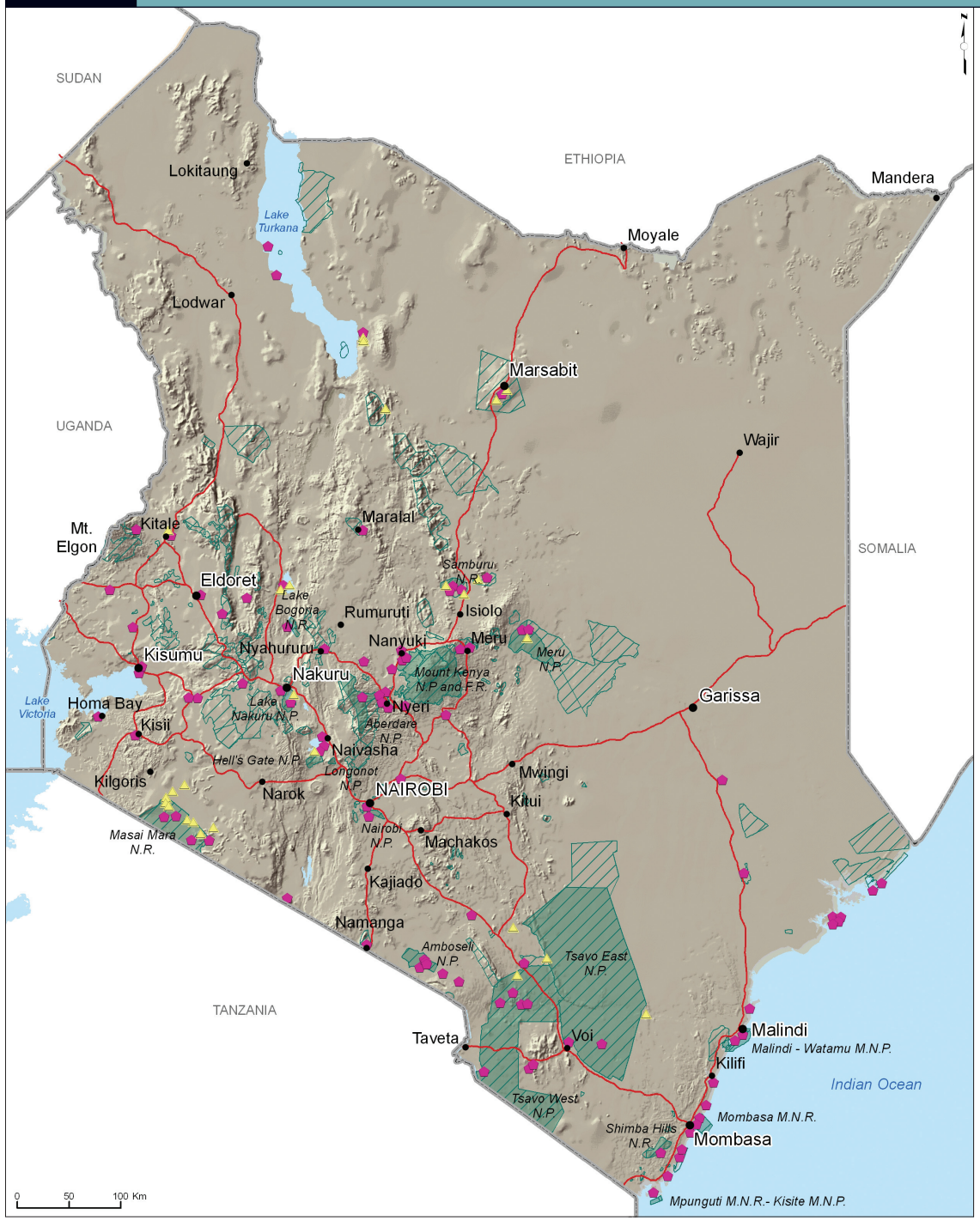
Abundant wildlife, spectacular landscapes, and beautiful beaches are not enough to sustain a vibrant tourism sector. Tourism infrastructure is crucial as well. Investments are needed to develop and maintain a wide variety of services, including transport systems; water treatment and distribution facilities; communications services; tourist accommodations; and a system of parks, game reserves, and other protected areas.

Fortunately, many of Kenya's parks and reserves have well-developed infrastructure, including the roads leading to the park as well as roads and accommodations located inside the park. Several popular parks are within a day's drive of Nairobi, including Lake Nakuru, Hell's Gate, Lake Naivasha, the Aberdare, and Mount Kenya National Park (Map 6.6). The highlands, where most of Kenya's population resides, has a good network of roads and airstrips serving most major tourist destinations. More distant attractions, such as Masai Mara National Reserve, Amboseli and Tsavo National Parks, and coastal destinations near Mombasa or Malindi are also quite accessible by air or road.

On the other hand, parks requiring significant travel time by car and with a less developed tourism infrastructure capture only a small share of Kenya's visitors (see Table 6.1). This includes Marsabit National Park and Reserve in the northern rangelands, Central Island National Park in Lake Turkana, and Mount Elgon National Park close to Uganda.

The type and location of tourism infrastructure is to a large extent a legacy of Kenya's past investment decisions. To date, these investments have resulted in over-concentration of tourists in certain areas of the country (Ikiara and Okech 2002). Unfortunately, crowding tourists into a few parks and reserves diminishes the quality of the tourism experience and lessens Kenya's appeal for international visitors. It also concentrates the costs and benefits of

Map 6.6 National Parks, Reserves, and Other Tourism Infrastructure



Sources: Cities (SoK and ILRI 2000), water bodies (FAO 2000), parks and reserves (IUCN and UNEP/WCMC 2006), major roads (SoK and ILRI 1997), and campsites, tented camps, hotels, and lodges (approximately placed by ILRI/WRI based on MacMillan Education 1993, UNEP 1998, RoK 2003).

Key components of tourism infrastructure, such as roads, airstrips, and lodging, are well developed in certain parts of Kenya, including the highlands, sections of the Indian Ocean coast, and near popular parks and reserves.

Note: The sites showing tourist accommodations are a rough approximation based on readily available publications. The paucity of spatially referenced data may have resulted in omission of sites. In addition, a single symbol underrepresents the greater number of hotels and bed capacity in certain areas such as Nairobi and the coastal region, which together captured about 75 percent of total hotel occupancy in 2005 (CBS 2006).

TOURIST ACCOMMODATION
- Camp sites and tented camps
- Hotels and lodges

OTHER FEATURES
- Major roads
- National parks and reserves, forest reserves
- National parks and reserves with visitor data
- Water bodies

tourism development in limited areas of the country, which can entrench existing social and economic inequities. Spatial diversification of infrastructure investment can help to protect wildlife and ecosystems from damage by too many visitors, while at the same time helping to strengthen the economic performance of the tourism sector.

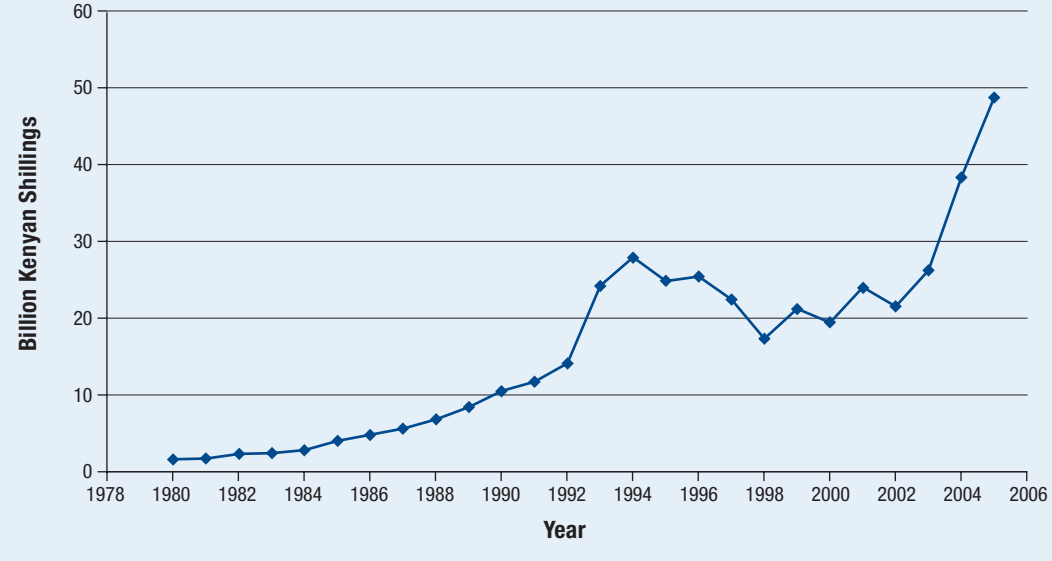
Trends in the Tourism Economy and Visitor Distribution

Travel and tourism are leading economic activities in Kenya. Tourism contributes to the economy not only through direct earnings (hotel revenues, park entrance fees, etc.) but also through indirect economic effects, such as increased demand for goods and services in other economic sectors, such as agriculture, transport, entertainment, and textiles. These indirect contributions greatly magnify tourism's economic impact. Overall, the tourism sector accounted for 8.7 percent of Kenya's gross domestic product (GDP) and ranked as the third largest foreign exchange earner in 2002 (Ikiara and Okech 2002). Moreover, tourism is identified in Kenya's *Economic Recovery Strategy* (GoK 2003) as a potentially important contributor to poverty reduction (see Box 6.2).

However, Kenya's tourism earnings have been somewhat volatile in recent years. Since 1980, the number of international visitors has increased dramatically, from about 400,000 in 1980 to almost 1.5 million in 2005 (Figure 6.1). However, the growth curve has not always been smooth. Tourism earnings grew rapidly in the early 1990s, but fell steeply in the latter half of the decade (Figure 6.2). Particularly in the late 1990s, Kenya's tourism industry faced downward trends in per capita spending, average length of stay, hotel occupancy rates, and quality of service (Ikiara 2001; Ikiara and Okech 2002). Another downturn hit the industry in the early years of the current decade, when concerns about global terrorism depressed worldwide demand for international travel (Belau 2003).

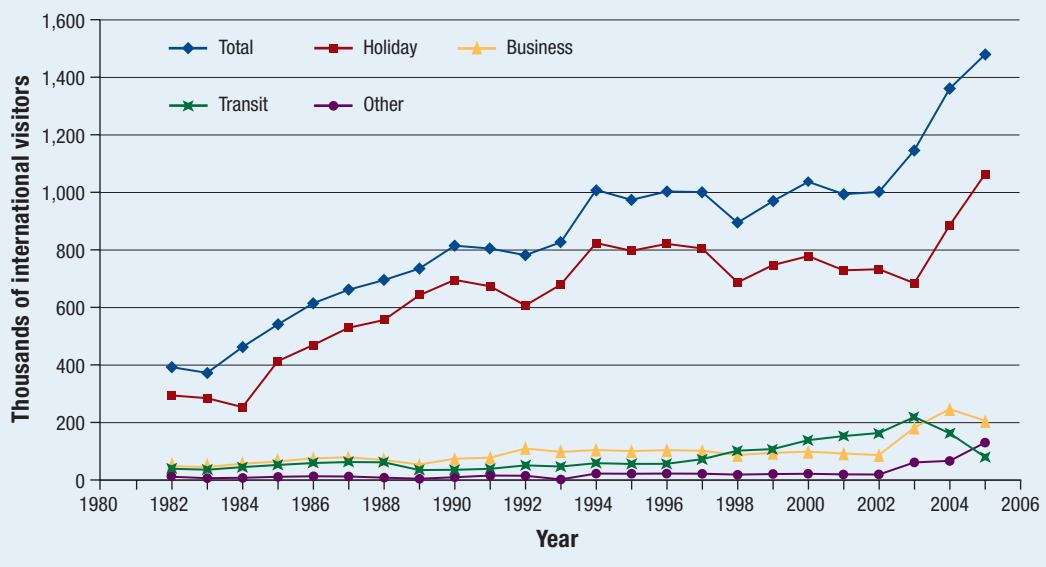
In more recent years, the tourism economy has improved significantly, with a growing number

Figure 6.2 **Tourism Earnings, 1980–2005**



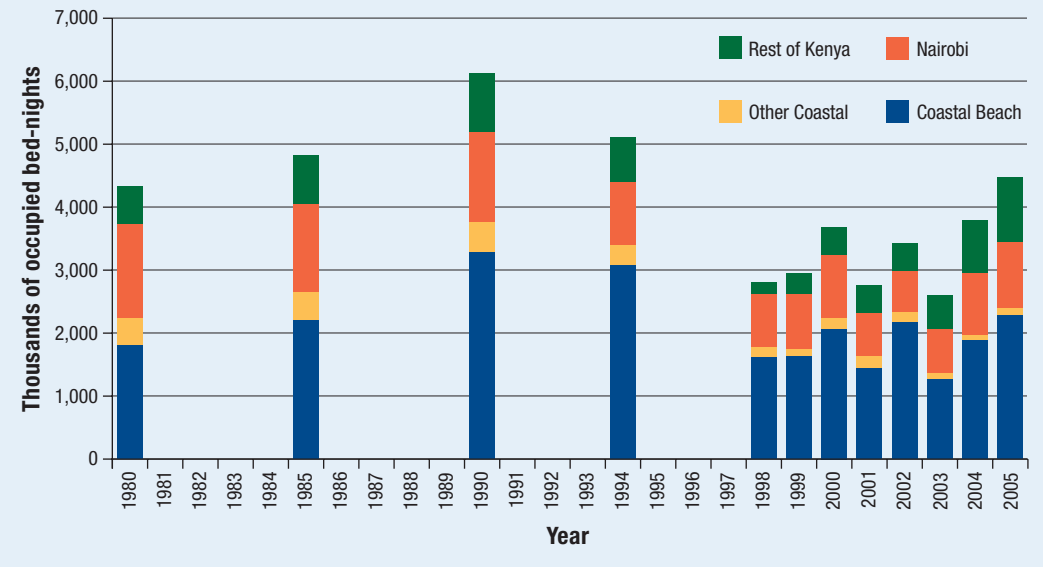
Sources: Ikiara 2001, Ikiara and Okech 2002, CBS 2004, 2006.

Figure 6.1 **International Arrivals by Purpose, 1980–2005**



Sources: Ikiara 2001, Ikiara and Okech 2002, CBS 2004, 2006.

Figure 6.3 **Distribution of Occupied Bed-Nights Among Tourist Attractions, 1980–2005**



Sources: Ikiara 2001, Ikiara and Okech 2002, CBS 2004, 2006.

of international visitors and higher earnings. For instance, 2005 tourism revenues totaled almost Ksh 50 billion, up 125 percent relative to 2002 (CBS 2004; CBS 2006). This reversal can be attributed in large part to Kenya's increased political stability and stronger marketing efforts, both of which have helped to create a more positive international image (Ikiara and Okech 2002).

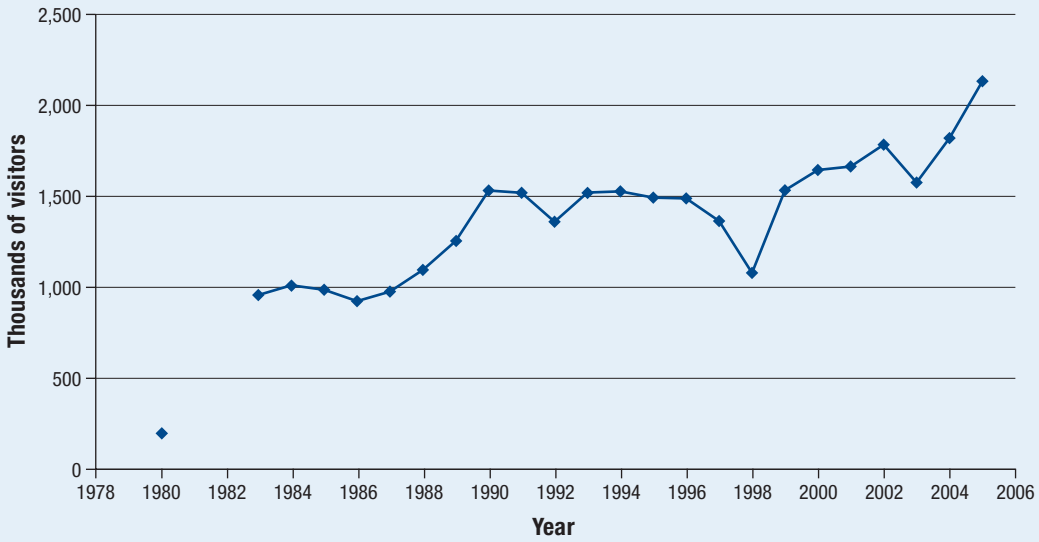
Beaches and coastal ecosystems continue to account for a large share of tourism earnings, including more than half of all nights spent by tourists in hotel accommodations (Figure 6.3). However, an emphasis on mass tourism has led to environmental deterioration of Kenya's beaches and coastal ecosystems, lowering the country's appeal to international travelers (Ikiara and Okech 2002). Stronger efforts to protect ecosystem assets as well as increased investment in new, high-quality, less concentrated tourism development will likely be needed in order to sustain strong earnings along Kenya's coast.

Use of Protected Areas: Visitor Trends and Revenue Generation

In 2005, Kenya's parks and reserves welcomed 2.1 million visitors, the highest number registered since records have been kept (Figure 6.4). This number has almost doubled since the early 1980s, when the figure stood at around 1 million visitors per year. Over time, trends in the number of visitors to Kenya's parks have roughly paralleled trends in the number of international arrivals.

However, a small handful of Kenya's 84 parks and reserves get the most visits. Just three areas—Nairobi National Park (including Animal Orphanage and Safari Walk), Lake Nakuru National Park, and Masai Mara National Reserve—account for more than half of all visitors (see Table 6.1). If Tsavo East National Park, Amboseli National Park, and Tsavo West National Park are also considered, then six parks are responsible for close to 72 percent of all visits.

Figure 6.4 **Visitors to National Parks and Game Reserves, 1980–2005**



Sources: Ikiara 2001, Kahata and Imbanga 2002, Ikiara and Okech 2002, CBS 2004, 2006.

Table 6.1 **Number of Visitors to Parks and Game Reserves, 2001-05**

	VISITORS (000)					
	2001	2002	2003	2004	2005[1]	2005 (PERCENT)
Nairobi TOTAL	366.2	459.3	342.9	419.9	485.2	22.7
Nairobi Animal Orphanage	*151.1*	*254.5*	*205.3*	*239.4*	*257.8*	*12.1*
Nairobi Safari Walk	*113.5*	*114.4*	*66.3*	*88.0*	*127.5*	*6.0*
Nairobi National Park	*101.6*	*90.4*	*71.3*	*92.5*	*99.9*	*4.7*
Lake Nakuru National Park	209.4	229.8	216.7	257.0	344.6	16.2
Masai Mara National Reserve	207.2	231.1	233.0	240.0	285.2	13.4
Tsavo East National Park	132.7	152.8	119.2	158.5	180.1	8.4
Amboseli National Park	91.5	92.0	54.7	101.6	126.2	5.9
Tsavo West National Park	78.7	76.3	62.6	92.7	105.7	5.0
Haller Park	87.2	87.0	99.9	101.2	100.8	4.7
Kisumu Impala Sanctuary	96.9	117.7	69.6	63.3	87.9	4.1
Lake Bogoria National Reserve	59.6	18.7	64.7	64.7	65.7	3.1
Kisite Marine N.P./Mpunguti Marine N.R.	45.7	47.1	35.9	51.7	59.2	2.8
Aberdare National Park	40.5	41.5	30.3	44.0	48.3	2.3
Mount Kenya National Park	26.3	27.9	25.5	27.7	39.5	1.9
Mombasa Marine National Park	29.1	30.5	31.4	32.3	36.2	1.7
Hell's Gate National Park	73.0	60.9	75.1	38.9	35.6	1.7
Malindi Marine National Park	26.5	29.8	22.8	27.5	32.8	1.5
Watamu Marine National Park	30.0	29.3	21.1	28.4	32.4	1.5
Shimba Hills National Reserve	18.3	14.4	16.2	18.7	17.3	0.8
Mount Longonot National Park	13.8	12.8	12.2	9.5	11.5	0.5
Meru National Park	7.8	8.2	5.7	6.4	8.9	0.4
Samburu National Reserve	6.3	6.0	6.0	6.2	7.3	0.3
Other[2]	17.4	11.0	30.5	30.3	22.5	1.1
TOTAL	**1,664.1**	**1,784.1**	**1,575.9**	**1,820.5**	**2,132.9**	**100.0**

Source: CBS 2006.

Note: [1] Provisional
[2] Others include Arabuko Sokoke, Ol-Donyo Sabuk, Marsabit, Saiwa Swamp, Ruma National Park, Mwea National Reserve, Central Island National Park, Kiunga, Mount Elgon, Nasolot, Ndere, and Kakamega National Reserve.

Table 6.2 Annual Average Visitors and Revenues for Selected Protected Areas, 2000-04

	NUMBER (000)	SHARE OF TOTAL VISITORS TO PARK (PERCENT)	REVENUES		SHARE OF TOTAL REVENUES FOR PARK (PERCENT)
			KSH (MILLION)	US$ (000)	
Kenyans					
Nairobi TOTAL	365.4	85	32.1	421	34
Nairobi National Park	*49.2*	*52*	*4.9*	*65*	*8*
Nairobi Animal Orphanage	*224.4*	*96*	*18.0*	*236*	*78*
Nairobi Safari Walk	*91.7*	*93*	*9.2*	*121*	*71*
Lake Nakuru National Park	113.0	53	11.3	149	5
Tsavo East National Park	38.0	27	3.8	50	2
Amboseli National Park	21.6	25	2.2	28	1
Tsavo West National Park	27.1	34	2.7	36	3
Aberdare National Park	7.9	19	0.8	10	1
International Residents					
Nairobi TOTAL	25.6	6	12.1	159	13
Nairobi National Park	*21.1*	*22*	*10.5*	*139*	*18*
Nairobi Animal Orphanage	*2.4*	*1*	*0.5*	*6*	*2*
Nairobi Safari Walk	*2.1*	*2*	*1.1*	*14*	*8*
Lake Nakuru National Park	12.9	6	6.4	85	3
Tsavo East National Park	4.2	3	2.1	28	1
Amboseli National Park	4.6	5	2.3	31	2
Tsavo West National Park	4.6	6	2.3	30	2
Aberdare National Park	4.5	11	2.2	29	3
International Visitors					
Nairobi TOTAL	36.8	9	50.8	667	53
Nairobi National Park	*24.9*	*26*	*43.5*	*572*	*74*
Nairobi Animal Orphanage	*7.6*	*3*	*4.7*	*61*	*20*
Nairobi Safari Walk	*4.3*	*4*	*2.6*	*35*	*20*
Lake Nakuru National Park	87.5	41	199.6	2,624	92
Tsavo East National Park	97.5	70	200.3	2,633	97
Amboseli National Park	61.5	70	140.3	1,845	97
Tsavo West National Park	46.9	60	96.4	1,267	95
Aberdare National Park	28.1	69	64.0	842	95

	NUMBER (000)	SHARE OF TOTAL VISITORS TO PARK (PERCENT)	REVENUES		SHARE OF TOTAL REVENUES FOR PARK (PERCENT)
			KSH (MILLION)	US$ (000)	
TOTAL					
Nairobi TOTAL	427.7	100	94.9	1,247	100
Nairobi National Park	*95.2*	*100*	*59.0*	*775*	*100*
Nairobi Animal Orphanage	*234.4*	*100*	*23.1*	*303*	*100*
Nairobi Safari Walk	*98.2*	*100*	*12.9*	*169*	*100*
Lake Nakuru National Park	213.4	100	217.4	2,857	100
Tsavo East National Park	139.7	100	206.2	2,710	100
Amboseli National Park	87.7	100	144.8	1,903	100
Tsavo West National Park	78.6	100	101.4	1,333	100
Aberdare National Park	40.4	100	67.0	881	100

Source: KWS 2005.

Note: Visitor data from the KWS Tourism Section on citizens, residents, and nonresidents was averaged for the years 2000 to 2004. The average number of visitors per year was multiplied with the respective entry fees, using adult rates (http://www.kws.org/tariffs.html) and the average exchange rate of 17 February 2005 (http://www.oanda.com/convert/classic). Data are rounded to nearest thousand, million, or percent.

The most popular parks generally get between 100,000 and 350,000 visits per year. Meanwhile, other sites with rich wildlife resources and striking scenery, such as Meru and Samburu National Parks, receive fewer than 10,000 visits annually.

The distribution of visitors varies among Kenya's parks and reserves. For parks near urban centers, Kenyans typically make up the majority of visitors. For instance, more than 90 percent of visitors to the Nairobi Animal Orphanage and Safari Walk are Kenyans (see Table 6.2). At greater distances from urban centers, most park visitors are international tourists. About 70 percent of visitors to the Aberdare, Amboseli, and Tsavo East National Parks are overseas tourists.

The distribution of park revenues follows a different pattern. Because entrance fees are higher for nonresidents, international tourists are responsible for most of the revenues generated at Kenya's parks and reserves. For example, overseas visitors account for more than 90 percent of revenues to all national parks listed in Table 6.2, with the exception of Nairobi area parks. At the Nairobi Animal Orphanage and Safari Walk, Kenyans account for more than 70 percent of all revenues collected.

Box 6.1 Mapping the Role of Ecosystems in Tourism: Links to National Decision-Making

Kenya's *Economic Recovery Strategy for Wealth and Employment Creation, 2003–2007* (GoK 2003) identifies tourism as a key sector for poverty reduction and employment creation. Besides the direct contribution of tourism to GDP, foreign exchange earnings, and employment creation, the sector also exerts strong multiplier effects by encouraging economic activity and expansion in additional sectors—transport, agriculture, and entertainment, among others.

Another key dimension of Kenya's national decision-making on tourism is spatial diversification. Over-concentration of tourists in a handful of parks, reserves, and coastal beaches encourages ecosystem degradation through intensive use. Spatial diversification of tourism could help protect ecosystems, while also promoting more equitable distribution of tourism's benefits and costs among local communities.

Below are examples of how mapping and analysis of ecosystem services and related indicators could contribute to national decision-making on tourism, sustainable development, and poverty reduction.

Spreading tourism impacts and benefits. Various maps presented in this atlas—such as the distribution of wildlife species and wildlife density, as well as the location of threatened or endangered species—could help policymakers identify new areas that have the potential to attract significant tourist interest. These maps could be combined with maps of existing infrastructure to pinpoint additional investments needed to expand tourism in underutilized areas. Some areas where such investment might be targeted are:

- *Lamu hinterlands.* The area surrounding Lamu is rich in potential tourist attractions, such as beautiful beaches, coral reefs, mangrove forests, and wildlife viewing (including the endangered sable antelope). Investment in transport and other tourism-related infrastructure could help this area capture a greater share of the tourism market.
- *Samburu National Park and surrounding Laikipia ecosystem, including the northern slopes of Mount Kenya.* Samburu is among the least visited of Kenya's national parks in spite of the fact that the area contains a great diversity of wildlife viewing opportunities (see wildlife maps in this and the biodiversity chapter). For example, visitors can encounter the largest elephant population outside of the Tsavo National Parks; half of Kenya's rhino population; and the only herd of Jackson's hartebeest, a threatened antelope (Laikipia Wildlife Forum 2006). Tour operators, private ranches, community-owned lodges, and wildlife conservancies have begun to market the Samburu-Laikipia ecosystem as an alternative destination and a leader in ecotourism in Kenya.

In all cases, great care should be taken to ensure that development of tourism infrastructure does not undermine the integrity of ecosystems, and that stakeholders in each area are consulted and potential resource conflicts are avoided.

Tourism marketing and promotion. Maps of ecosystem assets could be used to promote tourism by showing the accessibility and spatial distribution of popular tourist destinations.

Increasing community involvement in tourism development. Maps can be used to display data from spatial analysis aimed at understanding which tourist destinations actually benefit local communities. Mapping can also play a role in efforts to minimize human-wildlife conflicts in the areas surrounding parks and protected areas—an increasingly important part of tourism strategies in the area.

Expanding the role of ecotourism. Mapping can be an important part of efforts to make ecotourism a larger component of the Kenyan tourism sector. Detailed studies are needed to assess the impacts of ecotourism, including surveys of how many visitors choose ecotourism as well as evaluations of how much ecotourism is benefiting local communities. Information from the recent National Inventory of Ecotourism Projects in Kenya (ESOK 2005) could be combined with map information to help identify areas with high ecotourism potential.

Assessing the impact of infrastructure quality. Maps can help to examine the relationships between declining tourism and problems with the quality of local accommodations. Random spot checks of hotel quality could be carried out and the results mapped to reveal areas with systematic problems. This map could then be overlaid with mapped areas of declining tourism to determine if there is any spatial correlation.

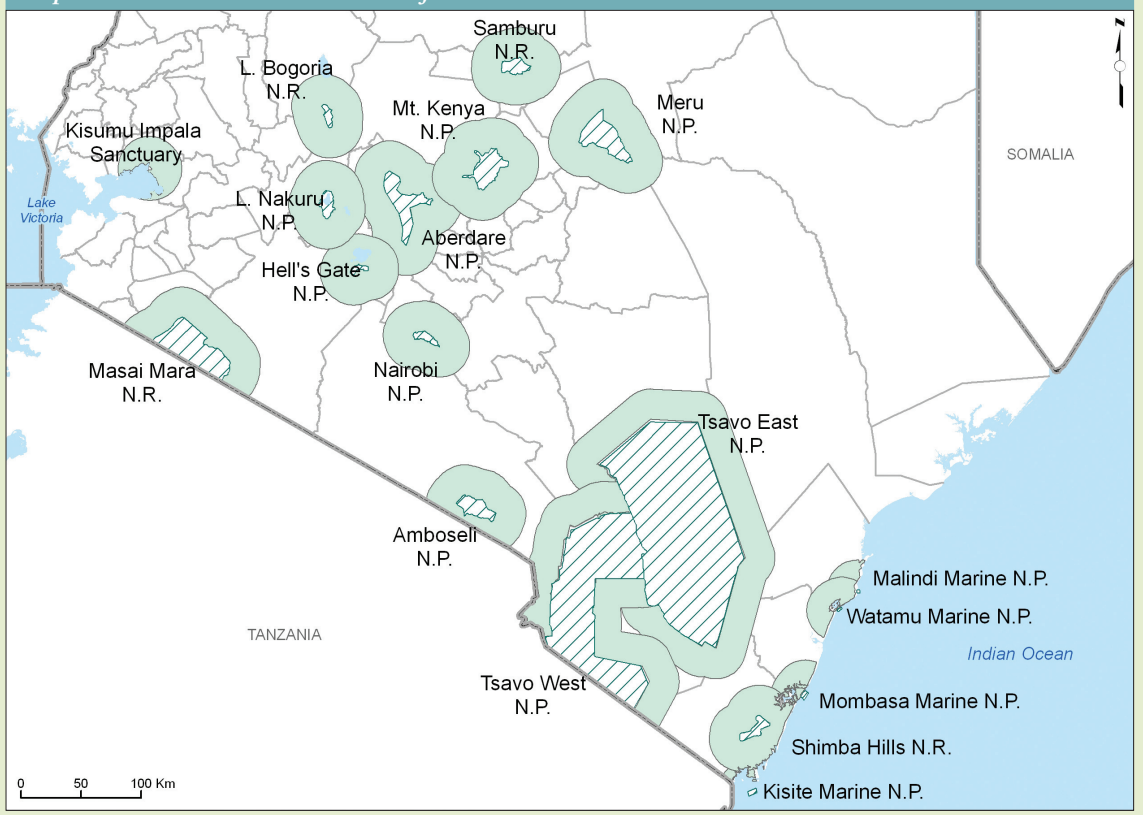
Creation of tourism information systems and tools. In recent years, tourism planning in Kenya has often called for improved access to information systems and technologies, yet many of these recommendations have yet to be implemented. Cooperative efforts between the Ministry of Tourism and Wildlife and the Central Bureau of Statistics to strengthen data collection and establish a comprehensive database for tourism statistics could help to interpret trends in visitor numbers and demographics for key parks and other tourist destinations. Such a database could also form the basis for sector analysis tools or a tourism forecasting model. Once tourism data and statistics are available in a database format, it will be easier to map this information and undertake spatial analyses.

Upgrading of security. Maps could be used to depict the availability and effectiveness of police units by tourist destination. Such maps could prove especially helpful in pinpointing the need for investments to upgrade security in areas of high tourism potential that are currently unsafe.

Promotion of domestic tourism. Since domestic tourism is the most significant income source for several parks, it is critically important to continue promoting these attractions to Kenyans and using Kenya's ecosystem assets for educational purposes. Mapping can help identify attractions of particular interest to Kenyan citizens.

Box 6.2 Creating a Poverty and Demographic Profile of Communities Neighboring the Most Visited Protected Areas

Map 6.7 Areas within 25 Kilometers of Most Visited Protected Areas



Parks and reserves are important contributors to local economies as well as to overall national income. Table 6.3 presents information on the socioeconomic attributes of populations living near Kenya's most visited parks and protected areas. It is based on data for communities within a 25-kilometer radius of the boundaries of each protected area (Map 6.7).

Such information enables comparison of the demographic and poverty characteristics of communities surrounding parks with high, medium, and low levels of visitation. These comparisons can in turn help identify relationships between park visitation and the economic status of nearby communities.

What Do the Map and Poverty Profile Show?

- Predictably, the largest numbers of poor people live in the vicinity of parks near urban and other densely populated areas. For instance, more than 970,000 live near Nairobi area parks, and almost 305,000 live near Mombasa Marine Park. In addition, large numbers of the poor live near protected areas in the densely populated highlands, including Aberdare National Park (about 324,000), Mount Kenya National Park (250,000), and Lake Nakuru National Park (over 245,000). Of the parks mentioned above, some are extremely popular (Nairobi area parks and Lake Nakuru National Park), while others are among the less-visited parks (Mount Kenya National Park and Mombasa Marine Park).
- For two of the parks with the greatest number of visitors (Masai Mara and Amboseli), the number of poor people in surrounding communities is quite small (69,000 and 16,000, respectively), reflecting the low population densities in these areas.
- Patterns regarding poverty *rates* are quite distinct from patterns involving the absolute number of poor people. While the number of poor people living near Masai Mara is quite low, the average poverty rate among these communities is 63 percent, which is among the higher rates for all parks shown in the table. Other parks with very high poverty rates (55–69 percent) in the surrounding communities include both parks with many visitors (Tsavo East and West, for instance) and parks with relatively few visitors (such as Meru and Watamu Marine). Parks with lowest poverty rates (34–38 percent) in nearby communities tend to be located in relatively better off central parts of the country (for example, Aberdare and Hell's Gate National Parks).
- The size of the poverty gap in communities surrounding popular parks and reserves varies enormously, from more than Ksh 400 million (US$ 5.7 million) per month for the densely populated communities near the Nairobi area parks, to only about 4–6 million Ksh (US$ 57,000–85,000) per month for the communities in less densely populated areas, such as those near Amboseli and Samburu National Parks. The poverty gap is the amount of money that would be required to raise the income of every poor person to just reach the poverty line (shown in the right-hand column in Table 6.3).
- These patterns suggest that poverty rates are not associated with the level of visitation to the selected national parks, but with other factors. In fact, the poverty rates of communities within a 25-kilometer buffer in general are closer to Kenya's rural average rate of 53 percent; when they are lower than this average rate, they tend to reflect countrywide spatial patterns (e.g., rates of 38 percent or lower for the Aberdare, Hell's Gate, and Mount Kenya National Parks). A comparison with poverty rates further away and a more detailed local analysis could provide additional explanations for these spatial patterns.

Similar tables could be constructed using different tourism statistics or poverty indicators. For instance, one could compare the revenue levels at particular parks to the magnitude of investment needed to close the poverty gap in nearby communities. (See Chapter 2 for examples of various indicators of human well-being in Kenya.)

Continued

Box 6.2 Creating a Poverty and Demographic Profile of Communities Neighboring the Most Visited Protected Areas — *continued*

Table 6.3 People, Poverty, and Communities within 25 Kilometers of the Most Visited Protected Areas

PROTECTED AREAS RANKED BY SHARE OF VISITORS TO ALL PARKS AND RESERVES IN KENYA	TERRESTRIAL AREA WITHIN 25 KILOMETERS OF PARK BOUNDARY (SQ. KM)	NUMBER OF PEOPLE (000)	AVERAGE POPULATION DENSITY (NUMBER OF PEOPLE PER SQ. KM)	NUMBER OF POOR (000)	AVERAGE POVERTY RATE (PERCENT)	KSH NEEDED PER MONTH TO REACH POVERTY LINE [1] (MILLION)
HIGH SHARE OF VISITORS (13.4–22.7% Country Total of All Visitors)						
Nairobi TOTAL[2] (22.7%)	3,359	2,434	725	970	40	414.7
Lake Nakuru National Park (16.2%)	3,438	616	179	245	40	61.1
Masai Mara National Reserve (13.4%)	3,669	108	30	69	63	23.1
TOTAL 3 AREAS	**10,466**	**3,158**	**302**	**1,284**	**41**	**498.9**
MEDIUM-HIGH SHARE OF VISITORS (5.0–8.4% of Country Total of All Visitors)						
Tsavo East National Park (8.4%)	14,358	229	16	143	62	44.9
Amboseli National Park (5.9%)	3,000	30	10	16	54	3.8
Tsavo West National Park (5.0%)	10,383	247	24	135	55	36.8
TOTAL 3 AREAS	**27,741**	**506**	**18**	**294**	**58**	**85.5**
MEDIUM SHARE OF VISITORS (2.3–4.1% of Country Total of All Visitors)						
Kisumu Impala Sanctuary (4.1%)	1,563	715	457	430	60	163.1
Lake Bogoria National Reserve (3.1%)	3,141	183	58	77	42	15.5
Kisite Marine N.P./Mpunguti Marine N.R. (2.8%)	284	27	95	15	54	3.6
Aberdare National Park (2.3%)	6,178	963	156	324	34	43.9
TOTAL 4 AREAS	**11,166**	**1,888**	**169**	**846**	**45**	**226.1**
LOW SHARE OF VISITORS (0.3–1.9% of Country Total of All Visitors)						
Mount Kenya National Park (1.9%)	4,959	682	138	250	37	40.1
Mombasa Marine National Park (1.7%)	945	604	639	305	51	118.8
Hell's Gate National Park (1.7%)	2,945	205	70	79	38	12.7
Malindi Marine National Park (1.5%)	767	117	152	78	66	25.5
Watamu Marine National Park (1.5%)	1,103	143	129	99	69	35.3
Shimba Hills National Reserve (0.8%)	3,160	393	124	221	56	75.1
Meru National Park (0.4%)	5,433	451	83	255	57	67.2
Samburu National Reserve (0.3%)	3,572	54	15	27	50	6.2
TOTAL 8 AREAS	**22,884**	**2,649**	**116**	**1,314**	**50**	**380.9**

Sources: Visitor data CBS 2006. Area estimate based on a 25-kilometer buffer (see Map 6.7) surrounding protected areas (IUCN and UNEP/WCMC 2006). Poverty and demographic estimates (1999) are WRI/ILRI calculation based on CBS 2002, 2003.

Note: [1] The poverty gap measures the average expenditure shortfall (gap) for the poor in a given administrative area relative to the poverty line. It is a crude estimate of the minimum amount of resources needed to eradicate poverty (see Chapter 2).

[2] Includes Nairobi National Park (4.7% of all visitors to Kenya's parks and reserves), Nairobi Animal Orphanage (12.1% of all visitors to Kenya's parks and reserves), and Nairobi Safari Walk (6.0% of all visitors to Kenya's parks and reserves). Table does not include Haller Park, a private park, which received 4.7% of all visitors to Kenya's parks and reserves. The park, a restored ecosystem in a former cement quarry, is 12 kilometers north of Mombasa at Bamburi Beach and overlaps significantly with the 25-kilometer buffer surrounding Mombasa Marine National Park. The 25-kilometer buffer around Mount Longonot National Park (0.5 percent of all visitors to Kenya's parks and reserves) overlaps with the one for Hell's Gate National Park and is therefore not included in this table.

SUMMING UP

- Tourism in Kenya relies on the country's natural attractions, including wildlife in its native habitat, as well as some of Africa's finest beaches and other coastal ecosystem assets. It ranges from low-density tourism focused on a 'wilderness experience' in less modified ecosystems, to high-density beach tourism requiring a relatively limited set of ecosystem services—primarily sand, sea, and sun.
- In 2005, the tourism industry generated revenues of almost Ksh 49 billion (US$ 700 million) and directly employed 176,000 people (about 10 percent of all jobs in the formal sector). About 70 percent of the visitors to Kenya came to see places of natural beauty and engage in nature-based activities.
- Kenya has invested in a network of protected areas to safeguard its natural heritage; support nature-based tourism; and achieve biodiversity, watershed protection, and other environmental objectives. More than 80 of Kenya's top 120 tourist destinations are national parks and wildlife reserves (about 8 percent of Kenya's total land area).
- Viewing wildlife in its natural habitat is the primary objective for about 80 percent of the international visitors who come to Kenya for holidays. Wildlife is broadly distributed across Kenya, but particular species with high 'viewing value' exhibit specific patterns of spatial distribution: For example, the rangelands of Laikipia District as well as Amboseli, Marsabit, and Tsavo National Parks all have high elephant numbers; the massive annual migration of wildebeest and zebra occurs in the plains of Kajiado District close to the Mara-Serengeti ecosystem. Declining wildlife numbers are undermining one of Kenya's principal tourist attractions (see Chapter 5). For instance, the wildebeest population in the Masai Mara ecosystem has fallen from 120,000 in 1977 to 31,000 in 2002.
- Beaches and coastal ecosystems continue to account for a large share of tourism earnings, including more than half of all nights spent by tourists in hotel accommodations in 2005. Coastal tourism includes both high-density beach tourism in and around Mombasa and tourism requiring lower visitor densities and a diverse set of ecosystem services. This includes snorkeling, diving, deep sea fishing, bird watching, and wildlife viewing—all taking advantage of Kenya's unique coastal ecosystem assets. For example, in the Arabuko-Sokoke Forest, less than 10 kilometers inland from Malindi, over 260 species of birds have been recorded, including 6 globally threatened species. Shimba Hills Reserve, about 15–20 kilometers inland from the coast, is famous for its sable antelope, the last remaining breeding population of these animals in the country. The government has designated six marine reserves—Kisite, Kiunga, Malindi, Mombasa, Mpunguti, and Watamu—encompassing a significant portion of the reef and its surrounding waters.
- In 2005, Kenya's protected areas welcomed 2.1 million visitors, the highest number ever registered. Of Kenya's 84 parks and reserves, Nairobi National Park (including the Animal Orphanage and Safari Walk), Lake Nakuru National Park, and Masai Mara National Reserve, together accounted for more than half of all visitors. More than 90 percent of the visitors to the Nairobi Animal Orphanage and Safari Walk, and more than 50 percent of the visitors to Nairobi and Nakuru National Parks were Kenyans. About 70 percent of the visitors to the Aberdare, Amboseli, and Tsavo East National Parks were from overseas. International tourists accounted for more than 90 percent of revenues for all national parks where such revenue data are available. Kenyans account for more than 70 percent of all revenues collected at the Nairobi Animal Orphanage and Safari Walk.
- To protect wildlife and ecosystems from serious damage caused by overly high visitor densities, tourism planners need to promote underutilized areas and spread visitor numbers more widely across destinations. This would also help to distribute tourism-related costs and benefits more evenly across the country. Improved spatial diversification of visitors will require increased and sustained investments in the transport system, safe water supplies, communications services, tourist accommodations, protected areas, and targeted marketing efforts. It will also require greater control and participation of local communities in wildlife management and tourism enterprises.