

EXECUTIVE SUMMARY

CHAPTER 1: NATURAL CAPITAL IN NATIONAL PERSPECTIVE

Kenya is renowned for its spectacular wildlife, but the grandeur and diversity of its landscapes are often overlooked. The constellation of climates and tapestry of landforms make Kenya a biodiversity hotspot of the African continent and among the richest regions on earth for the diversity of its mammals, birds and other vertebrates. Here, in the cradle of humankind, indigenous and immigrant peoples down the ages introduced and developed crops, animals, husbandry skills, livelihoods, cultures, religions and languages, raised the productivity of the land and supported a diverse and growing population.

Kenya survived ancient and modern waves of extinctions around the world to retain its wildlife and biodiversity relatively intact. The first steps to conserve Kenya's heritage were taken in the late 1800s. Forests were protected as state land in 1902, the Game Department was established in 1906 and Kenya National Parks in 1947. At independence Kenya declared its natural heritage as the foundation of its economic growth and wellbeing. Despite the conservation measures, a burgeoning population and rising consumption despoiled lands and depleted natural resources. Forest and wetlands shrank, rangelands degraded, erosion climbed, wildlife numbers fell and effluents polluted waters, air and soils.

At first the environmental cost of economic growth was overlooked in the rush for development. By the late 1960s the fallout raised the first voices of concern. Homegrown responses included community-based conservation, the Wildlife Clubs of Kenya and the Greenbelt Movement (GBM). Kenya contributed to a new paradigm, linking development to environmental sustainability, when the National Environmental Secretariat (NES) was set up in Nairobi in 1971. Kenya also ratified the Convention on Biological Diversity (CBD) that underscores biodiversity conservation as the foundation of human development and wellbeing, and the Kyoto Protocol on Climate Change. The Environmental Management and Coordination Act (EMCA) of 1999 domesticated Kenya's international treaty obligations to conserving biodiversity.

In 2010 Kenya's commitment to conserve biodiversity was indelibly embedded in the constitution, declaring that every Kenyan has the right to a clean and healthy environment and a duty to protect it. A raft of new policies and legislation is incorporating these fundamental rights and responsibilities into law.

Kenya's Natural Capital: A Biodiversity Atlas documents the wealth of biodiversity, its many values, the status of species and ecosystems, the threats they face and the gaps that remain in conservation policy and practice. This chapter underscores the link between biodiversity, ecosystem services, sustainable development, and Kenya's goal of adopting natural capital as the pillar of development alongside human and economic capital.

CHAPTER 2: A WEALTH OF ECOSYSTEMS

Kenya's rich biodiversity has been shaped by geology, topography, soils, climate and hydrology, and moulded by the forces of evolution and time to create a diversity of environments modified by rising human activity. The varied environments created distinctive eco-climatic zones each with a characteristic assemblage of plants and animals adapted to geography and climate—making up distinctive ecosystems. The major ecosystems range from forests to grasslands, shrublands, woodlands, wetlands, deserts, lakes, rivers, montane and afro-alpine highlands and marine environments.

Each ecosystem provides a range of services and values that have shaped and sustained livelihoods and enriched the cultures of Kenya's peoples down the ages. Each ethnic group has a unique heritage based on husbandry practices, and plants and animals adapted to seasons, harsh conditions and

hard times. Although traditional peoples transformed Kenya's landscape and ecology over time, they caused few animal or plant extinctions.

A modern Kenyan landscape now overlays natural ecosystems and traditional lands. The distinctive associations between eco-climatic zones, plants, animals, livelihoods and culture are fast disappearing, replaced by plantations, greenhouses, irrigation, commercial farms and urban consumer societies. In recent decades, burgeoning human activity has transformed Kenya's natural landscape to such an extent that human-modified and human-manufactured landscapes have supplanted natural ecosystems. Despite the environmental transformation Kenya's economy and society is still heavily rooted in and shaped by the environment. How efficiently and sustainably Kenya uses its biodiversity and ecological services for economic development and human wellbeing depends on sound knowledge and wise husbandry of its natural capital.

CHAPTER 3: A WEALTH OF SPECIES

The rich tapestry of Kenya's environments and ecosystems explains the wealth of its animals and plants. Although Kenya is not among the richest nations in terms of total species, ten of the world's fourteen biogeographical regions are found within its borders. Together with neighbouring Tanzania, the variety of ecosystems makes Kenya the richest vertebrate region in Africa and places it in the top rank worldwide. Most notable of all is the region's renowned abundance and variety of large herbivores and carnivores that have made Kenya a wildlife Mecca.

The Convention on Biological Diversity gave global recognition to biodiversity, highlighting its fragility and underscoring its importance to sustainable development. The Convention calls for accurate and up-to-date data on species, their current status, the threats they face, the actions being taken to protect them and the gaps that remain in conserving biodiversity.

A Wealth of Species provides the first compilation of Kenya's biodiversity. It also gives an overview of the distribution of plants and animals; biodiversity hotspots; endemic, endangered and threatened species, their value to society and the threats they face. Kenya's list of species exceeds 30 000 but is far from complete due to the paucity of biodiversity surveys and collections.

The main threats to biodiversity arise from land-use change, habitat destruction and over-harvesting. Pollution, invasive species and climate change pose new and growing threats. Protected areas are important conservation safeguards yet give inadequate conservation coverage to Kenya's biodiversity and leave out many of the biodiversity hotspots, especially of plants.

CHAPTER 4: STATUS, THREATS AND RESPONSES

Global diversity has dropped sharply in the last 35 years. Forests are degrading, coral reefs are deteriorating, wildlife populations are declining and a quarter of all plant species are threatened with extinction. Global benchmarks set for biodiversity conservation have not been met and the shortcomings are mirrored on national and local scales across Kenya.

Population pressure and poverty combine to put unsustainable demands on natural resources and the environment. Agriculture, the mainstay of the economy, led to dwindling landholdings, growing pressure on land, accelerated erosion and declining soil fertility over much of Kenya. Divergent value systems, human-animal conflicts, and cultural and religious beliefs also threaten biodiversity and natural resources.

In this chapter, a DPSIR Drivers, Pressures, Status, Impact and Responses approach is used to assess the standing of biodiversity and natural capital in Kenya's main ecosystems: the rangelands; forests; lakes, rivers and wetlands; the coastal and marine ecosystems; and the moorlands and afro-alpine meadows. The state of natural resources is analysed in terms of wildlife, forests, biomass energy and fisheries. The responses to the threats are reviewed, including policies and legislation, protection, participation in international environmental treaties, and public outreach and engagement. The concluding section identifies the main gaps in conservation, the need for a more comprehensive approach to valuing ecosystem services and for a national auditing and monitoring systems for Kenya's natural capital.

CHAPTER 5: VALUATION OF BIODIVERSITY AND ECOSYSTEM SERVICES

Gross Domestic Product (GDP) measures national economic growth but ignores the ecological services provide by natural capital and the costs of overuse and depletion. This chapter details the importance of ecological services and provides examples that take ecological, social and economic factors into account in planning and management. It also considers a range of new tools for natural capital accounting based on environmental assets and losses. Many countries are beginning to value environmental health and sustainability in their national accounting. Kenya, one of the first signatories to the *Communiqué on Natural Capital Accounting*, has pledged to value and sustain its natural capital. Some of the tools for doing so, including Payment for Ecosystem Services (PES) and Total Economic Value (TEV), are considered. Such comprehensive valuations allow decision-makers to weigh the value of precautionary conservation action and the cost of inaction. Fully valuing nature's services also identifies the benefits and beneficiaries of natural capital to ensure its equitable and sustainable use. Although few quantitative studies have been conducted in Kenya to date, examples given in this chapter, including Payment for Watershed Services in Lake Naivasha and Payment for Wildlife Habitats in the Mara Ecosystem, illustrate the benefits of fully valuing ecosystem services.

The adoption of natural capital accounting is essential to the achievement of Kenya's Vision 2030, but has yet to be incorporated into the national planning processes. This chapter ends with policy and regulatory recommendations to introduce natural capital accounting for Kenya—as the basis for bridging economic growth and the wellbeing of its people.

CHAPTER 6: CONSERVING BIODIVERSITY FOR SUSTAINABLE DEVELOPMENT

A decline in biodiversity and erosion of natural capital is not unique to Kenya. None of the eleven targets for conserving global biodiversity set by the Convention on Biological Diversity in 2002 were met by 2010. Despite some progress in arresting the trends, loss and degradation of species, habitats and ecosystems continues worldwide. The failure is due to focus on proximate solutions such as protected areas and species survival rather than the root causes of loss—the social and economic problems standing in the way of a fair and sustainable use of ecosystem services and natural capital. Priority should be placed on convincing decision-makers to ensure that biodiversity is fully valued and embedded in the national development agenda.

Development goals have been equally elusive. The United Nations (UN) Rio+20 summit of 2012 identified the main setbacks to achieving the Millennium Development Goals (MDGs) and called for setting Sustainable Development Goals for incorporation into the MDGs after the 2015 implementation deadline. Such goals must link social and economic targets. They must not only meet the needs of the present without compromising the ability of future generations to meet their needs. They must also safeguard earth's life support systems on which the welfare of all generations and all life depends.

This chapter outlines the steps Kenya has taken towards policies and practices that sustain development and conserve biodiversity. It also identifies the gaps that stand in the way of linking the two—in line with Vision 2030 and the Constitution of Kenya 2010. Priorities for conserving Kenya's rich and unique biodiversity are also identified. The need to fully value ecological services and adopt natural capital accounting mechanisms is explained and illustrated with examples from Kenya's economic planners.

In line with new constitutional goals and mandates, Kenya is committed to identifying and addressing threats to biodiversity and opportunities for development and wellbeing. It does so by strengthening national and county administration. The main emphasis will shift from central management and enforcement policies to devolved voluntary environmental management based on incentives and opportunities. Policies will shift from costly restorative environmental measures to thrifty conservation practices reflecting national aspirations—and will be built into planning, development and investment processes.

Kenya's commitment to sustainable development and conserving biodiversity calls for valuing and monitoring natural capital within a national economic and social framework. This chapter concludes with steps that Kenya will take to establish natural capital as a foundation of development alongside human and economic capital.