

KENYA

State of the Environment and Outlook 2010

Supporting the Delivery of Vision 2030



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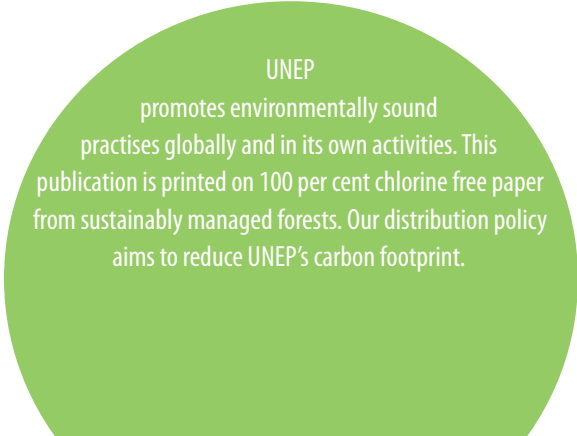
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FOREWORD

The economy of Kenya and the livelihoods of her people largely depend on the utilization of her rich natural resource base. This resource base is increasingly under pressure from human activities, resulting in environmental degradation and depletion. The challenge, therefore, is to ensure sustainable use of our natural capital by striking a balance between its utilization and conservation.

State of the environment (SoE) reports are accepted worldwide as a means of reporting on environmental issues and progress made towards sustainable development. The 2010 SoE Report has been produced in fulfilment of Section 9(2)(p) of the Environmental Management and Coordination Act (EMCA) (Act No. 8 of 1999) which mandates the National Environment Management Authority (NEMA) to prepare annual State of the Environment reports for submission to the National Assembly. The SoE report is therefore an important tool for documenting timely, accurate and relevant information on various facets of the country's environment in order to ensure their sustainable use. More specifically, it provides a basis for efforts to restore environmental integrity and to tap the enormous opportunities which overwhelming environmental challenges such as climate change present.

The government acknowledges that a healthy environment is crucial to delivering Vision 2030, which is Kenya's long-term development blueprint and which is the theme of this SoE report. It has therefore instituted a number of measures to protect the environment. The most important of these is the promulgation of the 2010 Constitution which enshrines a series of environmental rights and provides for a number of environment-related laws. The executive arm of government and the National Assembly have initiated steps to establish the requisite commissions and to enact the environment-related laws stipulated by the new Constitution under the timelines outlined in its Fifth Schedule. In addition, a series of legal and policy responses have been crafted over the last two years to address the environmental challenges that the country is grappling with and include the National Climate Change Response Strategy, the Report of the Prime Minister's Task Force on the Conservation of the Mau Forest Complex and the Biosafety Act (No. 2 of 2009). It has also finalized a

number of environmental regulations, standards and guidelines prepared under EMCA, which is the country's framework environmental law. On the regional front, in May 2010, Kenya signed the Nile Cooperative Framework Agreement which seeks to ensure more equitable and sustainable utilization of the waters of the Nile River Basin by the Nile Basin Countries.

The preparation of the 2010 SoE Report has been guided by the Drivers, Pressures, State, Impact and Response (DPSIR); and opportunities frameworks. These frameworks were selected because of their potential to address the delicate nexus between environment and development, the impacts of human activities on the environment and crucially, the impacts of environmental changes on people's livelihoods. A participatory approach was also adopted in preparing the SoE report in recognition of the obvious benefits that accrue from drawing on the expertise of a broad base of stakeholders. Thus renowned Kenyan environmental experts were involved in the SoE process from the outset and were instrumental in selecting the report title and thematic areas, in drafting and providing substantive inputs to the chapters, and in validating the final report. Because this report is conceptualized and written by Kenyans, it documents the environmental challenges that our country is confronted with and the opportunities these present through a Kenyan lens in order to ensure both credibility and national ownership.

I would like to thank NEMA and the other lead agencies, the Ministry of Environment and Mineral Resources staff as well as other stakeholders which played various roles in preparing this publication. I also wish to express my profound gratitude to the Governments of Denmark and Sweden, which through the Danida/Sida supported Environmental Programme Support (EPS), funded the preparation and publication of this report. In addition, I wish to record my appreciation to the United Nations Environment Programme (UNEP) for its invaluable technical support.

I hope that this report will set us firmly on the path to realizing the ambitious goals enumerated under the economic, social and political pillars of Vision 2030 and I wish you all a happy reading.



A handwritten signature in black ink, appearing to read 'John Michuki'.

Hon. John Michuki, EGH, MP

Minister for Environment
and Mineral Resources

PREFACE

Kenya's development is largely dependent on her natural resources' wealth. As such, periodic assessment of the state of the country's environment is an important step in the path to sustainable development. In accordance with the 1999 Environmental Management and Coordination Act (EMCA), the National Environment Management Authority (NEMA) is tasked with preparing annual State of the Environment (SoE) reports for submission to the National Assembly. It is hoped that this report – the seventh and most comprehensive yet—will enable us to better harness the enormous opportunities that our environment presents and to fill the knowledge gap on the magnitude of the environmental challenges that we have to continually confront.

The new Constitution, which was promulgated in August 2010, entrenches a number of environmental rights that are summed up under the overarching right to a clean and healthy environment which is provided for under Article 42. In addition, the Fifth Schedule specifies land, natural resources and the environment as some of the areas where a number of laws need to be enacted within 18 months to 5 years from the date of promulgation. The Constitution also provides for devolution of certain environmental mandates to the county governments where Kenyans at the grassroots can directly contribute to the protection of the environment and benefit from it through the devolved governance structures that will be gradually put in place.

The preparation of this SoE report was characterized by a participatory approach and a broad base of stakeholders was involved in the selection of the report title, the thematic areas and indicators as well as in data collection and compilation. The report was produced using the drivers, pressures, state, impact, and response (DPSIR), and the opportunities frameworks. These were

selected because of their capacity to highlight the interlinkages between that state of the environment and the quality of development.

This report establishes an authoritative baseline for the attainment of Kenya's Vision 2030. The primary goal of the country's long-term development blueprint is to transform Kenya into a globally competitive and prosperous nation with its citizens enjoying a higher standard of living by 2030. It is envisaged that this will translate into a higher proportion of Kenyans transitioning from crippling poverty. Vision 2030 aims to progressively realize these goals by implementing a number of five year medium-term rolling plans. Although environmental management is covered under the social pillar of Vision 2030, it is anticipated that this SoE report will act as a timely reminder that environmental integrity and economic development need not be a zero-sum game.

The information contained in this report is an invaluable resource for individuals, business entities, government ministries and agencies which are keen to contribute to the attainment of Vision 2030 in an environmentally sustainable manner. The report is also a useful resource for those who are looking to tap a range of opportunities offered by seemingly insurmountable environmental challenges such as climate change. The underlying message of this SoE report is that long-term development—such as that anticipated by Vision 2030—cannot be achieved without prioritizing environmental imperatives. It is therefore incumbent upon all Kenyans to value the environment as the “goose that lays the golden egg” and support its sustainable use for the benefit of present and future generations.



A handwritten signature in black ink, appearing to read 'AD Mohamed'.

Ali D. Mohamed, CBS

Permanent Secretary, Ministry of
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The process of preparing the 2010 State of the Environment (SoE) report was operationally supported by the Ministry of Environment and Mineral Resources and coordinated by a secretariat in NEMA which consisted of representatives from a number of lead agencies. These agencies played a crucial role in the development, validation and adoption of national environmental indicators and provided data and information which formed the basis of the chapters of the report. The lead agencies also helped to analyze and interpret the data, and to forecast a range of future environmental scenarios based on the trends that emerged from the analyses. I would therefore like to record my deep appreciation for the support that the Ministry of Environment and Mineral Resources rendered and the time and effort that the various agencies put into the preparation of this report.

I am also grateful to the Governments of Denmark and Sweden, which through the Danida/Sida supported Environmental Programme Support (EPS), funded the preparation and publication of this report. In addition, I am indebted to UNEP which provided technical backstopping for the development of the

environmental indicators and which continued to provide advice throughout the entire report preparation process.

I would also like to thank the NEMA Board of Management for providing an enabling environment that made the completion of this report possible and to recognize the role played by the NEMA staff especially the Director, Planning and Research Coordination who oversaw the process of preparing this SoE report.

This report enumerates a number of emerging issues that need to be closely monitored to prevent them from evolving into intractable environmental crises. It is also hoped that the report findings will prompt the full spectrum of stakeholders to take timely action to remedy anthropogenic activities that degrade our environment. Therefore, while this report is an important reference tool, it is also intended to spur institutions and stakeholders into playing their rightful roles in environmental planning and monitoring, and in taking appropriate remedial action to restore environmental integrity.



A handwritten signature in black ink, appearing to read 'Ayub Macharia', positioned below the portrait photograph.

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ACRONYMS

AAP	Africa Adaptation Programme	KACCAL	Kenya Adaptation to Climate Change in Arid and semi-arid Lands
AEO	Africa Environment Outlook	KEFRI	Kenya Forestry Research Institute
AfDB	African Development Bank	KenGen	Kenya Electricity Generating Company Limited
AIDS	Acquired Immune Deficiency Syndrome	KENSUP	Kenya Slum Upgrading Programme
AMCEN	African Ministerial Conference on the Environment	KESCOM	Kenya Sea Turtle Conservation Trust
ASALs	Arid and Semi-Arid Lands	KFS	Kenya Forest Service
ATMs	Automated Teller Machines	KFWG	Kenya Forests Working group
AU	African Union	KPA	Kenya Ports Authority
BCM	Billion Cubic Metres	KSh	Kenya Shilling
BPO	Business Process Outsourcing/ Offshoring	KWh	Kilo Watt Hour
BSAP	Biodiversity Strategies and Action Plans	KWS	Kenya Wildlife Service
CAADP	Comprehensive African Agricultural Development Programme	LAMCOT	Lamu Marine Conservation Trust
CAHOSCC	Conference of African Heads of State and Governments on Climate Change	LNG	Liquefied Natural Gas
CBD	Convention on Biological Diversity	LPG	Liquefied Petroleum Gas
CBK	Central Bank of Kenya	MDG	Millennium Development Goals
CBOs	Community Based Organizations	MEAs	Multilateral Environment Agreements
CCAA	Climate Change Adaptation in Africa	MEMR	Ministry of Environment and Mineral Resources
CCK	Communications Commission of Kenya	MFD	Ministry of Fisheries Development
CDM	Clean Development Mechanism	MFI	Micro Finance Institutions
CFA	Community Forest Associations	MFW	Ministry of Forestry and Wildlife
CFCs	Chlorofluorocarbons	MLD	Ministry of Livestock Development
CFSK	Computer for Schools Kenya	MNPDV	Ministry of State for Planning, National Development and Vision 2030
CGIAR	Consultative Group on International Agricultural Research	MOF	Ministry of Finance
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna	MOMS	Ministry of Medical Services
CLTS	Community Led Total Sanitation	MOPHS	Ministry of Public Health and Sanitation
CMA	Capital Markets Authority	MW	Megawatts
CNG	Compressed Natural Gas	NAP	National Action Programme
COMESA	Common Market for Eastern and Southern Africa	NBI	Nile Basin Initiative
CPI	Consumer Price Index	NBSAP	National Biodiversity Strategy and Action Plan
DALY	Disability Adjusted Life Year	NCCRS	National Climate Change Response Strategy
DFIs	Development Finance Institutions	NEAP	National Environment Action Plan
DRSRS	Department of Resource Surveys and Remote Sensing	NEMA	National Environment Management Authority
EAC	East African Community	NEPAD	New Partnership for Africa's Development
EBD	Environmental Burden of Disease	NGOs	Non-Governmental Organizations
EIAs	Environmental Impact Assessments	NHIF	National Health Insurance Fund
EMCA	Environmental Management and Coordination Act	NIB	National Irrigation Board
EPPs	Emergency Power Producers	NMK	National Museums of Kenya
ERS	Economic Recovery Strategy	NMS	National Malaria Strategy
ESP	Economic Stimulus Programme	NSE	Nairobi Stock Exchange
FAO	Food and Agriculture Organization	NWMP	National Water Master Plan
FDI	Foreign Direct Investment	NYS	National Youth Service
FMA	Forest Management Agreements	PCs	Personal Computers
FPE	Free Primary Education	PMCT	Prevention of Mother to Child Transmission Programmes
FTSE	Free Tuition Secondary Education	PPPs	Public-Private Partnerships
GBD	Global Burden of Disease	PPR	Pestes des Petits Ruminants
GCF	Green Climate Fund	RDA	Regional Development Authorities
GDP	Gross Domestic Product	REDD	Reducing Emissions from Deforestation and Forest Degradation
GHGs	Greenhouse Gases	REP	Rural Electrification Programme
GMOs	Genetically Modified Organisms	SACCOs	Savings and Credit Cooperative Organizations
GoK	Government of Kenya	SAICM	Strategic Approach to International Chemical Management
GSPC	Global Strategy on Plant Conservation	SANA	Situation Analysis and Needs Assessment
GSU	General Service Unit	SDM	Summary for Decision Makers
GTI	Global Taxonomy Initiative	SEACOM	Sea Submarine Communications Limited
GWh	Gigawatt Hour	SLTS	School Led Total Sanitation
HCES	Household Centred Environmental Sanitation	SoE	State of the Environment
HDI	Human Development Index	STIs	Sexually Transmitted Infections
HESA	Health and Environment Strategic Alliance	TEAMS	The East African Marine System
HIV	Human Immunodeficiency Virus	TFR	Total Fertility Rate
HWTS	Household Water Treatment and Safe Storage	UNDP	United Nations Development Programme
IAEA	International Atomic Energy Agency	UNEP	United Nations Environment Programme
IBAs	Important Bird Areas	UNESCO	United Nations Educational, Scientific and Cultural Organization
ICMRM	Integrated Coastal and Marine Resources Management	UNFCCC	United Nations Framework Convention on Climate Change
ICT	Information Communication Technology	USDA	United States Department of Agriculture
ICZM	Integrated Coastal Zone Management	VAT	Value Added Tax
IFAW	International Fund for Animal Welfare	VCTs	Voluntary Counselling and Testing Centres
IGAD	Intergovernmental Authority on Development	WASH	Water Sanitation and Hygiene
IPCC	Intergovernmental Panel on Climate Change	WASREB	Water Services Regulatory Board
IPI	African Network for the International Pollinator Initiative	WCED	World Commission on Environment and Development
IPPs	Independent Power Producers	WHO	World Health Organization
ISWM	Integrated Solid Waste Management	WRI	World Resources Institute
IT	Information Technology	WRMA	Water Resources Management Authority
IUCN	International Union for Conservation of Nature	WRUAs	Water Resources User Associations
IWRM	Integrated Water Resources Management	WSBs	Water Service Boards
JKIA	Jomo Kenyatta International Airport	WSSD	World Summit on Sustainable Development
JVA	Joint Voluntary Agency		

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BACKGROUND AND INTRODUCTION

Introduction

Kenya has been implementing an active environmental management programme including education and public awareness. Most Kenyans are therefore aware of the link between environmental management and human well-being. They know that environmental degradation exacerbates poverty and undermines economic progress. Of course, there are still those who lack appreciation of the ecosystem services that are central to our wellbeing but these are a minority. It can be logically deduced therefore, that Kenya's environmental reporting efforts are beginning to make a significant contribution to sustainable development.

This edition of the state of the environment (SoE) report profiles Kenya's environmental resources as an asset for the country's development under the theme 'Our Environment: Supporting the Delivery of Vision 2030'. To this end, the report highlights the opportunities presented by Kenya's natural resource base to support Vision 2030. It also assesses the state and threats to key resources including land, water, wetlands, biodiversity, forests, coastal and marine resources. In addition, issues related to economics, poverty and gender; and their interlinkages with the environment are discussed.

Despite the substantial opportunities to utilize the environment for sustainable development, there are a number of emerging issues which continue to hinder economic development and improvement of Kenyans' welfare. The key emerging issues mentioned include climate change, poor disposal of hazardous wastes, invasive alien species and environmental justice. The report proposes the development and implementation of effective policies to prevent further environmental degradation and promote human wellbeing.

State of the environment reporting

Context and process

The National Environment Management Authority (NEMA) is required by Section 9 of the Environmental Management and Coordination Act (EMCA) (Act No.8 of 1999) to prepare an annual state of the environment (SoE) report for submission to the National Assembly. The aim of SoE reporting is to capture and present accurate and timely information on the environment and natural resources that is relevant to development in order to inform decision-making. The SoE report also forms the basis for the preparation of operational sector policies, enhancement of the integration of environmental concerns into development processes, and preparation of environmental action plans.

Apart from the national legislative requirements for SoE reporting, Kenya is a signatory to a number of multilateral environmental agreements and is also a member of several international organizations. These bring with them reporting obligations for various aspects of the Kenyan environment. Some of these include the United Nations Environment Programme (UNEP), the World Meteorological Organization (WMO), Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

Kenya has been reporting on the state of her environment annually since 2003. A rigorous process for production of SoE Report has thus evolved over time. The entire Kenya SoE process, from the identification of themes through to scenario analysis and endorsement of the final report is a participatory. NEMA, as the lead agency for environmental management coordinates the whole process. Lead agencies, major governmental and non-governmental stakeholders, the private sector and national experts in the different thematic areas are all involved at different levels of the process. Drafts of the report are subject to sectoral review to ensure completeness, relevance and accuracy.

Analytical framework

The Opportunities Framework is the format used for analysis in this report. It is a hybridization of the traditional driver-pressure-state-impact-response (DPSIR) framework that has been commonly used in SoE reporting. This format highlights a chain of causal links starting with **driving forces** (economic and human activities) through **pressures** (emissions, waste) to states (physical, chemical and biological) and **impacts** on ecosystems, human health and functions, eventually leading to political **responses** (policies, legal and institutional frameworks) (UNEP 2006). As much as possible, the report has compiled and analyzed data and indicators to demonstrate positive or negative change.

The **opportunities framework** methodology (UNEP 2006) tries to address the following questions:

- What resources are available at the national and sub-national levels (**resource inventory, state and trends**)?
- What opportunities exist for using the resources to promote poverty reduction and sustainable development (**value/opportunities and potential**)?
- What are the main challenges that Kenya faces in capitalizing on the opportunities to utilize the resources (**demands/pressures**)?
- What policy and institutional actions should be taken in order to capitalize on the opportunities. What is the impact (including potential) of each policy on the assets and the environment? (**policy actions**)?
- How might Kenya's various forms of vulnerability be exacerbated by the success or failure to capitalize on opportunities and to effectively avert the environmental costs so far incurred?
- What would be the consequences of Kenya's success or failure to seize the opportunities (**outlook**)?

The data used in this report has come from a variety of sources such as policy and strategic initiatives including the national planning and budgetary processes. The use of the integrated analysis methodology strengthens the cross-cutting nature of environmental management further bringing together different sectoral mandates in support of sustainable development. The end result of this assessment

will be more than just knowing about the state of the environment. It will provide policy-makers and other stakeholders with guidance on how to better manage it.

The structure of the report

The report is divided into four parts. The first part, *Environment, People and Development*, consists of a discussion of environment, economic development, socioeconomic issues including poverty, gender, and climate change in Kenya.

Part two is an analysis of the *State of the Environment*. The chapters contain an integrated assessment of biodiversity, forests and woodlands, land, agriculture and livestock, water, coastal and marine resources, and health and environment. Under each theme, opportunities for sustainably deriving benefits from the resource base and/or reversing environmental degradation are identified. Where the data exist, environmental evaluation of the resources has been included to emphasize the need for safeguarding and improving the remaining asset base in terms of ecosystem and economic goods and services, as well as social value/services at the national and community/household levels.

The third part is a discussion of the *Emerging Issues*. Emerging issues are those concerns that are exerting an increased impact on the environment and the people. They could be completely new environmental phenomena or 'old' issues analyzed in a new light. They could also be those that even though external to the country, pose a potential future threat.

The last part of the report *Environmental Governance – Now and In The Future* contains a chapter on the future of Kenya's environment. It is an analysis of the environmental outlook from 2010 to 2030 and uses the aspirations of Vision 2030 as targets to measure the impact of environmental action over this period. Chapter 11 concludes the report by providing a brief treatment of the various policy options for addressing the myriad of environmental challenges and opportunities tracked into the future in the scenarios chapter.



