REPUBLICK OF KENYA

REPUBLIC OF KENYA

ENVIRONMENT ACTION PLAN
PREPARATION GUIDELINES

In pursuit of a clean and healthy environment

2016-2022

REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES

ENVIRONMENT ACTION PLAN PREPARATION GUIDELINES

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List of acronyms

CEAP	County Environment Action Plan
EAP	Environment Action Plan
EMCA	Environmental Management and Coordination Act
EMP	Environmental Management Plan
EPRC	Environmental Planning and Research Coordination
ESD	Education for Sustainable Development
GHG	Green House Gas
GoK	Government of Kenya
GRI	Global Reporting Initiative
MOU	Memorandum of Understanding
MTP	Medium Term Plan
MTPF	Medium Term Planning Framework
NDVI	Normalized Differential Vegetation Index
NEAP	National Environment Action Plan
NEMA	National Environment Management Authority
NGO	Non-Governmental Organizations
PPP	Public Private Partnership
SEA	Strategic Environment Assesment
SDG	Sustainable Development Goals
SOE	State of Environment
TOR	Terms of Reference
WARMA	Water Resource Management Authority
WRUA	Water Resource Users Association

Foreword

Kenya is endowed with enormous natural resources which are vital for supporting the country's economy. In addition they provide important ecological goods and services. The tourism, for instance, which is one of the major foreign currency earner has its backbone on the diverse wildlife and biodiversity resources, rich cultural heritage and the scenic coastal landscape. On the other hand, the Water towers provide recharge to rivers, which provides water for domestic agriculture, wildlife and maintenance to the hydrological cycle, which regulates atmospheric temperature and moderates climatic conditions. From the foregoing it is imperative that our economic growth is dependent on the integrity of the Environment.

In pursuit of development the environment has become more vulnerable to both natural and human induced changes. Water systems are under threat from pollution and human related activities, forests face serious degradation as a result of expansion of settlements and agriculture. It is important to constantly keep watch of such changes, set in motion interventions and address such impacts on the environment. Environmental Action planning is intended to provide guidance on solutions to some of these impacts through a systematic planning process.

Kenya prepared the first National Environment Action Plan in 1994 in pursuit of fulfillment of Agenda 21 of the Rio summit of 1992. The process has been domesticated through a legal provision in the Environment Management and Coordination Act 1999 and now EMCA Cap 387. The legal framework provides for both the National and County governments to prepare Environmental Action Plans as part of mainstreaming of environmental concerns into the development planning process. In order to guide the process, there is an overarching need to standardize tools for sustainable environmental management. It is in this respect, that the development of these guidelines has been undertaken so as to provide a basis for monitoring the State of Environment (SOE) through environmental indicators that are embedded in the guidelines.

The Constitution of Kenya 2010 has elevated environmental integrity into a human right; and has made deliberate and strategic effort to address environmental impacts, considering the environment a constitutional obligation of every individual as well providing a framework for environmental interventions at National and County levels.

These guidelines were prepared through a participatory process and it is expected that the same process will be used in preparation of the County and National Environment Action Plans.

The guidelines will facilitate development of action plans which link social, economic and environmental issues aimed at reducing poverty, enhancing equity and generating wealth for the present and future-generations. The expected outcome of sustainable development initiatives are national initiatives aimed at addressing issues of sustainable resource management and use; conducting research to build an information base and promoting information-sharing; and administering programmes that promote partnerships with all stakeholders for natural resource management and conservation.

I am therefore delighted to recommend these guidelines for use during the preparation of the County Environmental Action Plans and the National Environment Action Plan. I would like to urge all institutions in charge of environmental planning and the County Environment Committees to prepare Environmental Acton Plans to bring to light strategic environment interventions to stem the negative environmental impacts arising from environmental and Natural resource exploitation.

Prof. Judi. W. Wakhungu, EGH
Cabinet Secretary
Ministry of Environment and Natural Resources

Preface

Integration of environmental concerns into economic development can be traced back to the United Nations Conference on Human Environment held in Stockholm, Sweden in 1972. This was a landmark achievement for the international community because for the first time the global community turned its focus on environment and the human settlements. To date there are many more challenges than anticipated during the conference arising from population pressure, changing consumption patterns , industrialization demands and climate change.

The Earth summit came up with various recommendations among them agenda 21 and a global environmental Action plan .The global Environmental Action Plan formed the basis for parties to formulate National Environment Action Plans for mainstreaming across all sectors.
The Government of Kenya consequently enacted the Environmental Management and Coordination Act (EMCA, No 8 of 1999 – now amended to EMCA, CAP 387) which provided for the integration of environmental concerns in national policies, plans and programmes. EMCA Cap 387 provides for the formulation of County Environment Action Plans once in every five years and the National Environment Action Plan after every 6 years.

The preparation of NEAP and CEAP requires guidelines for standardizing the process. EMCA Cap 387 further gives the County Governor the power to appoint and gazette members of the County Environment Committee (CEC) with the chair of the County Environment Committee being the Chief Executive in Charge of Environment and the secretary being the NEMA Director of Environment at the county level. The legal framework gives the County Environment Committee the responsibility to develop the County Environment Action Plan (CEAP) within the first year of enactment of the Act. NEMA is also required by the Act to develop the National Environment Action Plan from the inputs of the County Environment Action Plans within the first 2 years of the enactment of the Act.

Once developed, the County Environment Action Plans (CEAPs) are submitted to the Director General NEMA for consent and approval, upon which the County Government goes ahead to implement the Action Plan as provided for in section 41 (b). The National Environment Management Authority then monitors the implementation of theEnvironmental Action Plans and incorporates the findings into the State of Environment report (SOE).

The preparation of these guidelines was spearheaded by the National Environment Management Authority (NEMA) through a collaborative and participatory process with Key stakeholders and lead agencies. The guidelines were further subjected to stakeholders' consultation at the County and National level in order to provide ownership by the two levels of government. I thus would like to commend NEMA for this milestone.

Finally, I call upon the County Government to mobilize resources, both financial and human, and ensure environmental Actions plans are budgeted for successful implementation within the County Integrated Development Plans (CIDP)

Hon. Charles Sunkuli

Principal Secretary

Ministry of Environment and Natural Resources

Acknowledgement

These guidelines were prepared to provide a standardized roadmap for application in the preparation of the County Environment Action Plans as per provision of EMCA Cap 387 and the Constitution of Kenya 2010. The guidelines' preparation was spearheaded by a technical team from the Department of Environmental Planning and Research Coordination, NEMA. The preparation process also involved a diverse group of stakeholders that include Ministries, Departments and Agencies, Non-Government Organizations (NGOs), Community Based Organization (CBOs), Private sector representatives and the County Governments' representatives. I wish to express my profound gratitude to the representative of these groups for their commitment and dedication in the preparation of these guidelines.

Special thanks go to the Cabinet Secretary, Ministry of Environment and Natural Resources, Prof.Judi Wakhungu, for policy direction and leadership during the entire process. The Principal Secretary for Environment Hon.Charles Sunkuli, and Dr.Margaret Mwakima, Principal Secretary, Natural Resources are acknowledged for their continued guidance in Environment and Natural Resource management and conservation. I also wish to acknowledge the NEMA Board of Management for leadership and provision of resources to ensure these guidelines were prepared on time and for advancing compliance with EMCA Cap 387.

The Coordination role by the department of Environmental Planning and Research Coordination is recognized and appreciated, particularly the Director Dr. Kennedy I Ondimu and Mr. Maurice Nyunja Otieno for providing technical backstopping and guidance.

I thank the County Governments for having taken their rightful role during the development of these guidelines. Their valuable inputs to the guidelines and commitment to environmental management is appreciated. Finally, I would like to assure the County Governments that NEMA will be ready to offer any technical support they may require in preparing their County Environment Action Plans.

Prof. Geoffrey Wahungu

Director General-National Environment Management Authority

Executive Summary

These Environment Action Planning guidelines are divided into Five sections.
Section 1 covers the preliminaries and outlines the logistical activities that are important for undertaking the environment action planning process.

Section 2 presents the Environmental profiling process and includes listing of the theme areas and environmental problem analysis. It presents the thematic sectors that provide the contextual, spatial and the temporal scope of the plan.

Section 3 presents the writing of the Action Plan. It covers, Visioning, formulation of the Goal, and formulation of the purpose and scope of the plan. It also presents the annotated chapters of the guidelines and provides the standard format of the Environmental Action plan. It provides specific elements of the plan that include; themes, sub themes.

Section 4 present a list of Environmental Indicators ordering the core indicators that would be used for measuring the performance of the Action Plan and the outcome indicators measuring environmental integrity .The incorporation of indicators will be critical in environmental assessment and profiling, and subsequent monitoring of environmental status geared towards achievement of specific environmental outcomes.

Section 5 presents the review of the Environmental Action Plan, the implementation plan matrix and the monitoring plan matrix, the investment plan matrix and a section on reporting and celebrating the implementation of the Environmental Action plan.

The Thematic areas considered for the Environmental Action Plan includes the following:
- Background Information
- County Profile
- Land and Soils
- Climate Change and Variability
- Water Resources and Pollution
- Wildlife and Biodiversity and Tourism
- Coastal Marine and Wetlands

- Forest Woodland and Ecosystems
- Agriculture, Livestock and Fisheries
- Settlement, Urbanization and Transportation
- Energy, Mining, Industry and Trade
- Health Sanitation and Waste
- Environmental Hazards and Disasters.
- Research Technology and Innovation
- Environmental Education Information and Communication
- Environmental Governance, Compliance and Enforcement
- People Environment and Economy
- Environment and Climate Change Finance
- Public Private Partnership
- Plan Implementation
- Emerging Environmental and Transboundary Issues

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INTRODUCTION

These Environmental Action planning guidelines aim at guiding the development of the Environmental Action Plans at both the County level and the National level and subsequently helping integrate environmental concerns into development. Environmental Action planning involves assessment and profiling of environmental concerns and designing strategic interventions to address such concerns through planning.

The guidelines are developed in response to the requirement of the Environmental Management and Coordination Act (EMCA) Cap 387 sections 37, 38, 40 and 41 which provide for the development and implementation of Environmental Action Plans at both the County and National level. The guidelines are issued by the Cabinet Secretary Ministry of Environment and Natural Resources on behalf of the Government of Kenya as provided in section 40 (5) of the EMCA Cap 387.

These guidelines will catalyze and facilitate development of action plans linking social, economic and environmental issues aimed at reducing poverty, enhancing equity and generating wealth for the present and future-generations in line with sustainable development principles. The expected outcome of sustainable development initiatives are national initiatives aimed at addressing issues of sustainable resource management and use, conducting research to build information base, promoting information-sharing, administering programmes that promote sustainable development and building partnerships with all stakeholders for natural resource management and conservation.

The Purpose

The purpose of this guide is to provide a standard way of engagement with the stakeholders, generating data, analysis of the data, teasing out the major environmental issues of the Counties and planning for interventions. The guide also provides the generic sectors of environment to be addressed in the Environment action plan for customization to every County.

The key output of the guide is an implementable County Environmental Action plan with the realistic and practical solutions for solving the environmental problems of each and every County, mainly focusing on what, how, where and why the County Environment Action plans have to be done.

The Scope of the plan

The guidelines outline the principles on which the action plan will be anchored including provisions of the Constitution, particularly those of articles 42, 60 and 70 and the principles enshrined in EMCA Cap 387. The Constitution provides for clean and healthy environment as a right for every Kenyan and obligates every institutional office to provide that constitutional right as well as availing those services that will ensure integrity of the environment. The guidelines therefore provide guidance on methodologies that will assist the County and the National Governments with hands on techniques for environment assessment, monitoring, problem identification, prioritization of environmental challenges and building a planning logic, development and implementation of the plan as well as monitoring of the plan.

The environmental action plan framework is as illustrated in figure 1 below.
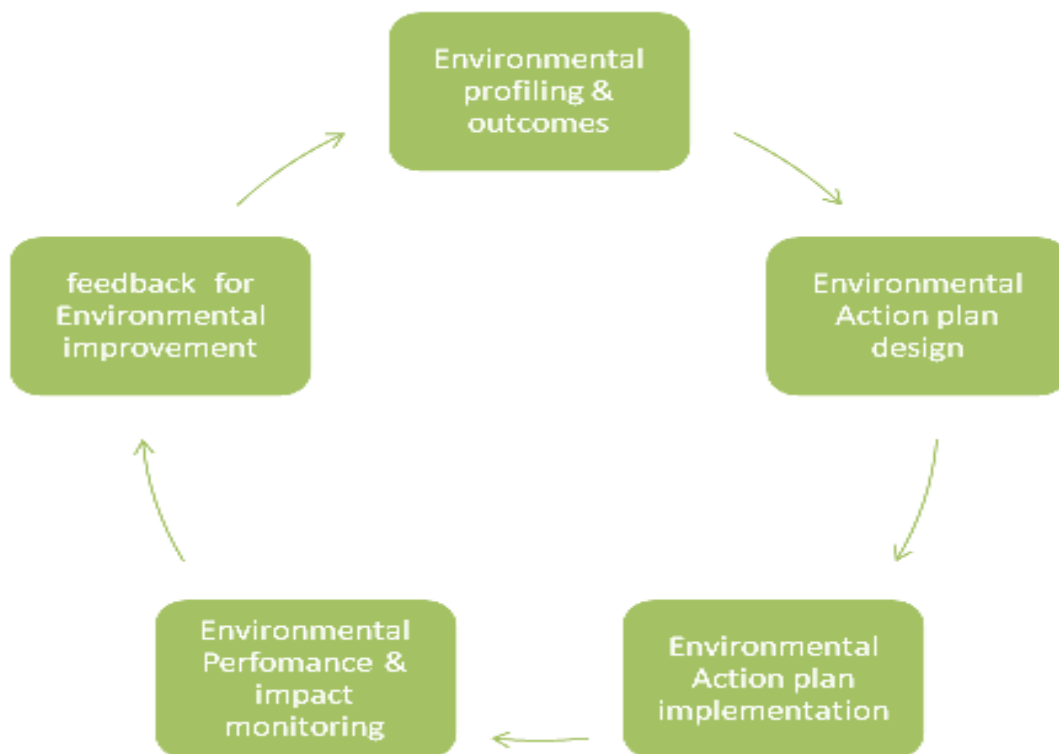
Figure 1: Environmental action plan framework flow chart

The Rationale of the plan

The Constitution devolved all planning activities to the County with environmental planning being a devolved function. The Constitution has similarly elevated the right to a clean and healthy environment to a human right. Environmental Action Planning provides the readiness for the Government to fulfill this mandate. The EMCA Cap 387 provides for certain requirements to be fulfilled as part of the Provision of Environmental Action Planning(EAP) ,including the need for the Cabinet Secretary to develop guidelines for the preparation of Environmental Action Plan within the first year of enactment of the Act. The amendment requires that the County Environmental Action Plan prepared is presented to Director General NEMA for approval and subsequent monitoring of its implementation.

SECTIONS OF THE GUIDELINES

The guidelines are divided into five main sections that include: preliminary activities, environmental assessment and profiling, designing the Environmental Action Plan, reporting on performance and implementation of the EAP; and standard format of the EAP. Each of the sections explains in a stepwise direction on how to undertake the process. The guideline also has two annexes with annex I presenting the annotated structure and annex II presenting the indicator baseline assessment checklist of the EAP.

SECTION 1: PRELIMINARIES

Adequate prior preparation is crucial for effective environmental assessment and planning. This section highlights some of the key preliminary activities to be put in place in order to have a successful Environmental Action Planning process. The preliminaries cover the logistics of planning, including setting up structures and systems that will oversee the Environmental Action Planning Process including having the County Environment Committee (CEC) in place, mobilizing resources for planning and implementation, and the need for mobilizing stakeholders for ownership. The logistics will pave the way for follow up and implementation of the plan. The preliminaries also cover logistical elements related to creating an enabling environment, establishment of systems and structures, resource mobilization and stakeholders' engagement in order to attain required constitutional thresholds.

Step 1.0: Logistical planning

Planning for logistics for the preparation of the County Environmental Action Plan is an important step in the planning cycle and comes early in the process.

Process:

Initiated by the Chief Executive in charge of the Environment. Logistical planning involves engaging the governor on this matter, seeking his support and setting out the preliminaries and logistics for the process. This requires seeking Authority from all the relevant departments within the County Governments, brainstorming and developing a roadmap for approval.

Outcome:

A roadmap developed and all logistics identified and approved by the executive of the County Government and the Governor.

Step 1.1: Establishment of structures and systems

This step involves establishment of structures and systems required within the County Government to oversee the overall process of Environmental Action Planning and subsequent implementation at the County level.

Process:

Some of the structures and systems important for this process are statutory in nature, such as the County Environment Committee (CEC). The Governor is required to establish and gazette members of the County Environment Committee (CEC), whose Chair is the County Executive in charge of Environment (CEC) and the Secretary is the County Director of Environment (CDE-NEMA), as provided for in section 29 of EMCA Cap 387. The CEC will therefore establish a technical committee for Environmental Action Planning and implementation.

Outcome:

County Environment Committee established and its members gazetted; a technical planning committee of the CEC established and approved.

Step 1.2: Mobilization of Resources

Mobilizing and making resources available, particularly financial resources is crucial for the successful preparation and implementation of the Environmental Action Plan.

Process:

The development of County Environment Action Plan (CEAP) and the National Environment Action Plan (NEAP) is a statutory mandate of the County Government as well as the National Government. Financial resources for the County Environmental Action Planning and implementation shall be drawn from the County budgeting process. There is need to integrate County Environment Action Planning Process into the County Strategic planning and the County Integrated Development Program (CIDP) and the County budgeting process. Likewise integrating National Environmental Action plan proposals into the National Development agenda and budgeting process will pave the way for mainstreaming of environmental issues into the National planning and budgeting process.

Additional funding can be mobilized from willing partners and County governments are encouraged to develop partnerships for development and implementation of CEAPs. At the National level the output of the National Environmental Action Plan are to be integrated into the National planning blue prints.

Outcome:

CEAP development and implementation mainstreamed into the County Government strategic planning process and the Country Integrated Development plan and budgeting and planning process; and partnerships developed with funding agencies.

Step 1.3: Mapping, identification and mobilization of stakeholders

Stakeholder Identification and mobilization is an important step towards public participation in the Environmental Action Planning process. This creates ownership and acceptance by Stakeholders and brings diversity into the process and easy uptake of the issues for implementation in the future.

Process:

Identify key stakeholders in Environment Action Planning and identify their stakes and interests using stakeholder mapping methodologies. Once different levels of stakeholders are identified and their stakes in the process established, mobilize the stakeholders through meetings, public barazas and the media, sharing information and seeking their roles and responsibilities and support in the process. This process can be extended up to the sub-County level.

Outcome:

Primary, secondary and tertiary stakeholders identified and mobilized through meetings and barazas.

SECTION 2: ENVIRONMENT ASSESSMENT AND PROFILING

Section 2 presents the guide to the environment assessment and profiling process and starts by presenting the environmental sectors under consideration for assessment and profiling at the planning level. Once the sectors are determined, the processes of assessment and profiling of the sectors is outlined in order to come out with analysis of utilization trends and states of such Natural resources. This process will generate and prioritize the main environment challenges of the sector and propose solution. This process can also be achieved through the Statutory State of the Environmental reporting provided in section 29 of EMCA Cap 387.

Step 2.1: Profiling the thematic sectors

The following are the key areas to be documented in the EAP i) The EAP process ii) County Environmental profile - County physiography iii) Socio-Economic profile-iv) land and Soils v) Water resources and water pollution vi) Climate change and Climate variability vii) Forest, woodlands and Ecosystems viii) wildlife, biodiversity and Tourism ix) Agriculture, livestock and fisheries x) Settlement, Urbanization and Transportation xi) Energy, Mining, Industry and Trade xii) Health Sanitation and waste xiii) Environmental hazards and disasters) xiv)Research Technology and innovation xv) Environmental education information and Communication xvi) Governance, Compliance and enforcement) xvii) Environment and Climate Change Finance xviii) Public Private Partnerships and Platforms- xviii) Emerging environmental and Transboundary issues xix) Plan implementation xx) annexes- indicators.

Process:

County Environmental profiles will be constructed according to the thematic sectors provided. This will however be customized according to the respective Counties, for example thematic sector on Marine will only be relevant to the Counties in the Coastal region of Kenya. The Thematic sectors will focus on the Key Natural resource endowments and the environmental services of the County for assessment and profiling. Select the thematic sectors relevant to the County. These sectors are varied spatially depending on the Counties. Profiling and ordering the relevant sectors is an important step towards analysis and profiling of Natural resources as provided for in EMCA Cap 387.

Outcome:

The sectors relevant to the County assessed and profiled.

Step 2.2: Environmental baseline assessments using the baseline indicator assessment tool

Baselines construction is usually an important step in measuring progress. The baseline measurement goes along with the initial environmental assessment and profiling taken in line with the indicators .Indicators are measurable actions that help monitor the progress in a particular sector. Use of indicators enables an objective assessment of the status and integrity of environment and achievement of performance measures designed during the environmental planning process.

After determining the relevant thematic sectors, core indicators are identified. Core indicators respond to the policy assessment and therefore will provide elements for assessing the policy impact of the Plan. Further to focusing on the County assessment and profiling, the indicators shall be used in monitoring of environmental performance.

The use of environmental indicators will provide the opportunity for establishing the baselines hence structured monitoring of the programme and improvement in environmental integrity. From the baseline report, an objective concrete result of the implementation of the plan is determined. Core indicators respond to the policy assessment and therefore will provide elements for assessing the policy impact of the Plan.

Process:

Undertake a baseline assessment and compile a baseline status at the start of the environmental profiling process and at the start of the implementation of Action plan using the core environmental indicators and compile a baseline status. The baseline will be used to measure progress and achievement. The baseline assessment can also be undertaken at the time of environmental assessment and profiling.

This presents the Environmental status or the state of the Environment. The baseline Indicator checklist is provided to help in picking the baseline. The baseline indicator is at two levels, the indicators at activity level and the indicator at outcome level.

After determining the relevant thematic sectors, determine the core indicators. Core indicators respond to the policy assessment and therefore will provide elements for assessing the policy impact of the Plan. Further to focusing on the County assessment and profiling, the indicators shall be used in monitoring of environmental performance.

Outcome: Key thematic areas and their core indicators determined including Environmental baseline report compiled.

Step 2.3: Scoping and data gathering

Knowing the data status of the County starts by scoping or understanding who and where within the County is a particular data held, what type of data is available and access modality, and whether the is relevant to the County. Scoping is a progressive way of initiating the process of data collection, organization, analysis and reporting. Scoping establishes the nature of assessment including context, spatial and temporal nature of data that determines the scope.

Process:

The contextual scope of the data will be based on selected thematic sectors relevant to the County. The spatial scope of the data shall be determined by the County boundaries with consideration given to the sub wards in terms of representations and the arrangement of natural resources in the County space. Temporally the data shall be determined by the period of the plan (2015-2020), the five year cycle, and the trends spread out through the five year period. Outcome: Organizations within and without the County and their data holding and access modalities listed and the data scope determined.

Step 2.4: Data collection and analysis

Environmental profiling involves data gathering, analysis, identifying issues and ordering or prioritizing environmental issues within the thematic sectors provided. The result of the analysis gives the story about the state of Environment and Natural resources in that particular County.

Process:

Information and data can be available in different formats, for example in figures, maps, graphs ,and ranging through time .Make decision on the baseline year, the year at which the collection of information starts, collect and analyze data through time and document the results. Graphical representation communicates better; analyzed data can be presented in form of graphs, .pie charts, maps and diagrams. Once analyzed and trends established formulate statements which convey the behavior of analyzed data representing environmental changes; report such as challenges for planning and identify potential solutions. The offices of the Kenya National Bureau of statistics are the first reference point for primary data.

Outcomes:

Quantitative and Qualitative County Environmental profiles report backed by data prioritized and environmental challenges clearly identified and corresponding solutions proposed.

Step 2.5: Development of data protocols; datasets and data capture modules and knowledge management systems

Data collection starts with the development of a protocol that provides the scope, the boundaries, materiality- important data to collect (activity data) for performance reporting and environmental integrity documentation. The data is based on the Environmental indicators provided in the guidelines which form the baseline indicator assessment from the time of development of the Environmental Action plan.

Data collection and management requires standard procedures and hence the data protocols which prescribe the scope, principles, boundaries, quality assurance and quality control elements and indication of known assumptions with respect to challenges of coverage as well as equipment. Other data characteristic that must be considered includes completeness, accuracy, accountability and transparency. For management elements of data capture and reproduction, often a spreadsheet is recommended for electronic data capture. A comprehensive knowledge management with a GIS database platform is recommended.

Data capture is guided by the a protocol that provides clear indicators related to the activity data to be captured and spells out instruments required and used for measurements and their calibration, particularly at environmental integrity level and therefore outcome measurements. As mentioned earlier the protocol also includes aspects of data quality control and quality assurance measures including data handling and transfer and standard formulae or equations if there are calculations to be done.

Process:

(i) Establish the indicators to be measured, the datasets (ii) identify data sources in your County and establish frequency of collection (iii), determine the department responsible for data collection processing and management and assign clear roles to institutions and personnel iv) establish the baseline, collect data and process and summate for the year. (iv) Formulate targets for the organization (v) maintain a database for the datasets selected and any other related information.(vi) develop a spreadsheet to help in data capture (vi) Provide room for verification by external verifiers.

Outcome:

A knowledge management system developed with a GIS database platform and an Environmental Information Management System.

Step 2.6: Environmental problem analysis

Some of the Environmental problems are not documented but still can comprise main environmental problems of the County requiring attention in the planning process. Problem analysis is one way of generating and documenting such issues through stakeholders' consultations.

Process:

Using tools of problem analysis, environmental problems of the County are documented. The problem analysis tool is capable of identifying and documenting the central or the root cause of Environmental problems- the cause and the effect element.

Outcome:

Environmental problems identified by the stakeholders, the root cause isolated and the cause and impacts identified through a cause and effect relationships.

Step 2.7: Institutional analysis

Institutional analysis provides institutional strengths, weaknesses opportunities and threats (SWOT), and is important for planning to make the institution ready to implement the Environmental Action plan. The County Government is considered as an institution. For this matter, the analysis will provide County and additional institutional gaps and readiness in the planning and implementation process.

Process:

The most commonly used methodology in institutional analysis in the planning process is the SWOT (Strength, Weakness, Opportunity, Threats) and PESTEL (Political, Economic, Social, Technological, Environmental and legal) analysis. Once the SWOT is generated, a Strength-Opportunity (SO) matrix can be constructed. This provides the objectives of the plan.

Outcome:

SWOT analysis report and the strategic objectives formulated.

Steps 2.8: Clarifying and prioritizing the challenges

Environmental challenges or issues identified through the above process could be numerous and sometimes less smart and therefore would require clarification and prioritization. There are known methods for prioritization so there is need to clarify and prioritize the environmental challenges or issues through known methodologies such as pairwise ranking or impact ranking. Clarifying challenges means shaping them out, prioritizing them out and, making them SMART. Prioritization of the environmental challenges can be done on the basis of their level of risk and impacts to the environment. This can be undertaken though stakeholders engagement, employing participatory ranking methodologies without necessarily going through difficult quantitative methods. This clarification and prioritization of environmental challenges is an important step in the planning process.

Process: Pairwise ranking involves listing the environmental challenges or their representative numbers in a matrix divided into rows and columns. The same environmental challenges will be listed serially on both the rows and the columns, and the stakeholders are then asked to make a choice on their preference based on the level of risk or impact and this is tallied in the

box where the row and the column converges. These tallies are eventually summed up to obtain the most preferred position-the highest priority Risks.

Outcome:

The environmental challenges prioritized on the basis of level of risks and level of impacts and stakeholders preference, based on the risk and impact criteria.

SECTION 3.0: DESIGNING THE ENVIRONMENTAL ACTION PLAN

This section presents the process of designing and writing the environmental action plan and covers the development of key elements of the plan including the vision, the goal, the purpose and the log frame elements of the Plan. This section is concluded with the presentation of the implementation matrices of the plan.

Step 3.1: Stating the principles of the plan

The principles guiding the plan are drawn from the key legislative framework of the Country including the Constitution of Kenya, EMCA Cap 387, and the principles governing various sectors including the principles of sustainable development, governance principles such as accountability, transparency, rule of law as well as access and benefit sharing. The Constitution has additional principles of access to information, disclosure and public participation in matters of County planning.

An additional principle drawn from EMCA which informs the environmental action plan is the polluter pays principle and respect for socio-cultural practices and indigenous communities of the target area.

Process:

Review the principles of EMCA Cap 387, the principle of sustainability to inform the principles on which the action plan is anchored including governance principles such as accountability, transparency, rule of law as well as access and benefit sharing, access to information, disclosure and public participation, the polluter pays principle and respect for socio-cultural practices and indigenous communities. This will inform the principles of the Action plan and shall guide the whole planning and plan implementation process.

Outcome:

Guiding principles of the Environmental Action plan identified and documented.

Step 3.2: Mainstreaming multilateral environment agreements

County Environmental Action plan is part of the process of domestication of MEAs. Kenya is a signatory to several MEAs that require domestication for sustainability and Environmental integrity such as UNCED, UNFCCC, UNCCD, and Ramsar Convention, CITES, Montreal Protocol, Basel Convention and many others.

Process:

Review all the MEAs that Kenya is a signatory and explores their relevance to the County. Follow up on their domestication in the County while exploring the share that the County can contribute to meeting the National targets.

Outcome:

MEAs signed by Kenya reviewed and those relevant to County mainstreamed into the County Environmental Action Planning process.

Step 3.3: Formulating rationale of the plan

Rationale of the Environmental Action plan is drawn from agenda 21 of the Earth summit, the constitution, EMCA Cap 387 as well as other National environmental legislation and the National planning instruments including National Integrated Development plan, and the Medium Term Plan Framework. These planning documents teases out National targets that are mandatory and the Counties need to integrate these elements into the County Environmental planning process.

Process:

Undertake a review of the Constitution of Kenya, EMCA Cap 387. The National Development blue print i.e. Vision 2030, the Medium Term Development Plan Framework, and the National Sustainable Development Goals (SDG)in order to bring out and capture critical elements that need to inform the Environmental planning Instruments as well as indicators that would be useful in measuring National outputs and achievements.

Outcome:

Areas and elements from the National instruments and processes documented to inform County Environmental Action Planning process.

Step 3.4: Stakeholders/public consultations

Public and stakeholder consultation is key to the process of Environmental Action Planning. The constitution has made public participation mandatory and so does EMCA Cap 387 which requires public engagement of stakeholders in the County in order to create ownership and acceptance of the process.

Process:

Public /stakeholders consultation at the County occurs at several levels- the County, Sub County and ward levels, county/National Assembly, CSOs, NGO as well as private sector platforms. Involve all the relevant stakeholders in the process. Various Sectors have organized platforms that need to be brought on board including Forest Associations for forest sector, Beach Management Units (BMUs) for Fisheries sector in the Counties, Water Resources Users Association. (WRUAs), County Conservation Committees, Community health workers etc. Refer to and adhere to public Participation Law and what informs the threshold of public participation.

Outcome:

Stakeholders and public consultation undertaken across the board within the County in order to obtain acceptance and ownership.

Step 3.5: Visioning

Developing a vision and a value statement helps focus the Plan. A vision is a dream and may not necessarily be achieved but provides a strong drive towards the goal. The County Environment Action Plan should have a guiding vision.

Process:

Visioning is done in many ways for instance, Statements can be sought from the stakeholders on how they visualize the future to be like in 20 years to come and list the statements. These statements can be evaluated to find one most fitting to the environmental agenda of the County.

Outcome: A Vision of the County Environment Action Plan developed and approved.

Step 3.6: Goal setting

Goal setting is a common practice in planning and often follows the process of problem identification which often results from problem statements. A goal is a long term objective and is often an integration of numerous small objectives. Setting goals often involves turning the negative statements of the core problems or core challenges into positive statements. The objectives and subsequently the goal will be born out of that process.

Processes:

Problems or challenges are often stated negatively; some of the problems are sometimes part of the major problem and therefore can be combined into other bigger problem or challenge. Once the process on agreeing on the core problem is reached, often stated in the negative, the goal is set. Setting the Goals often involves turning the Core negative statements, which is the core problem into positive statements. The lower ranking problems then compromise the objectives of the plan.

Outcome:

Goal and objectives of the Environmental Action plan formulated and stated.

Step 3.7: Stating the purpose

Defining the purpose of the plan helps to present the scope and level of the plan. The purpose presents the means towards the end and the critical elements or actions to undertake cumulatively to help meet the goal unlike the goal which presents the result or the end, the purpose focuses mainly on the processes.

The purpose of Environmental Action Planning as provided for in EMCA Cap 387 section 41A is to co-ordinate and harmonize the environmental policies, plans, programmes and decisions of the national and county governments, as the case may be, in order to:

i. Minimize the duplication of procedures and functions; and promote consistency in the exercise of functions that may affect the environment; and

ii. Secure the protection of the environment

iii. Prevent unreasonable actions by any person, state organ or public entity in respect of the environment that are prejudicial to the economic or health interests of other counties or the country.

EMCA further requires that the following issues, among others be addressed in the Environmental Action Plan:

- Analysis of the natural resources of Kenya/County with an indication as to any pattern of change in their distribution and quantity over time.

- Analytical profile of the various uses and value of the natural resources incorporating considerations of intergenerational equity.

- Recommendation on appropriate legal and fiscal incentives that may be used to encourage the business community to incorporate environmental requirements into their planning and operational processes.

- Recommendation on methods for building national awareness through environmental education on the importance of sustainable use of the environment and natural resources for national development.

- Operational guidelines for the planning and management of the environment and natural resources.

- Identification on actual or likely problems as may affect the natural resources and the broader environment context in which they exist.

- Identification and appraisal of trends in the development of urban and rural settlements, their impacts on the environment, and strategies for the amelioration of their negative impacts.

- Guidelines for the integration of standards of environmental protection into development planning and management.

- Identification and recommendation of policy and legislative approaches for preventing, controlling or mitigating specific as well as general adverse impacts on the environment.

- Prioritize areas of environmental research and outline methods of using such research findings.

- Take into account and record all monuments and protected areas declared or deemed to have been declared by the Cabinet Secretary under the National Mu seums and Heritage Act.

Processes:

In order to clearly understand the purpose of the Environment Action, clearly review the provision of EMCA cap 387 and its provision for developing an action plan, this will present the purpose of the plan. Stated simple the action plans need to bring out the following clearly:

- Analysis of state of Natural resource in Kenya as to establish trends of change, and develop analytical profile of various uses.
- Recommend appropriate legal and fiscal measures to encourage business com munity.
- Recommend appropriate environmental awareness methods.
- Identify actual and likely environmental problems.
- Propose guidelines for integration of environmental issues into planning.
- Prioritize areas of environment research.

Outcome:

The Purpose of the Environmental Action plan clearly stated.

Step 3.8: Compiling the implementation plan

The plan is to have the following elements; the goal, the purpose and the matrix arranged in a summarized matrix or a more detailed extended matrix called the log frame (logical framework). A simple log frame has a couple of columns representing the horizontal logic with the first column representing the hierarchy of the vertical logic followed by time frame.

At the strategic level, and for the County environmental Action Plan, the plan will have four columns of the matrix, the challenge or the environmental problem, the solution to the challenge, the activities, the actors, the timeframe and sometimes the estimated budget (see annexes). A summary fact sheet can been included as part of the plan.

Processes:

Compile a plan matrix with following headings: Environmental challenge, environmental solutions, and activities to solve the challenges, actors, time frame and the budget. Below is a sample matrix.

Table 1: Implementation plan matrix

Environmental Challenge	Solution to the Environment Challenge	Activities	Timeframe	Budget

Outcome:

Environmental Action plan implementation matrix developed.

Step 3.9: Developing the log frame matrix

The log frame or the logical framework is a presentation of the hierarchical flow of elements of the plan both vertically and horizontally. The vertical flow presents the hierarchy of objectives, the links to the output, links to the inputs, links to the purpose and the goal. The horizontal link provides the horizontal logic and outlines the links to the expected results, link to the target area, link to the performance indicator, the link to the risk and the link to the risk management measures. This is often presented in form of a matrix as shown in figure 3 below.

Process:

The implementation plan matrix can be enriched and expanded to include the elements indicated above where the vertical logic will have the objectives, the output, inputs, the purpose and the goal. And the horizontal logic includes the expected results, target area, performance indicator, the risk and the risk management measures.

Outcome:

Summarized plan in a log-frame matrix

Table 2: log frame matrix

	Expected results	Target area	Performance indicators	Risk management
Goal				
Purpose				
Input				
Output				

Step 3.10: Implementation monitoring plan

A model implementation monitoring framework should be developed for the plan. Implementation monitoring for the plan will be at two levels with the first one being at the level of performance with respect to the implementation of the plan, measured by outputs and will track output indicators. The other level will involve measurement of environmental change and environmental integrity, where indicators are at outcome level and articulated as National environment indicators used in environmental assessments and examines the improvement of environment of the County and the Nation as a result of interventions and reported in the State of the Environment report at the County or at the National level.

Processes:

The monitoring plan is developed from the implementation plan matrix. Enrich the matrix by retaining the solution challenge column, the activities column and introduce a new column for the objectively verifiable indicator (OVI) and means of verification column (MOV) as well as a column for responsible organization.

The objectively verifiable indicators (OVIs) of the guidelines and the Means of Verification (MOV) shall be the state of Environment report for the County.

Outcome:

Implementation monitoring plan matrix developed.

A sample implementation monitoring plan is presented below:

Table 3: Implementation monitoring plan matrix

Challenge	Solution to the challenge	Activities	Means of Verification	Objectively verifiable indicators	Timeframe	Budget

Step 3.11: Undertake the Strategic Environment Assessment (SEA) for the County Environmental Action Plan

Strategic Environment Assessment (SEA) is the process of interrogating a plan, policy or programmes to establish whether it has integrated elements of environment in totality, particularly in responding to various laws and regulations. The SEA can be undertaken parallel to the County Environmental Action Plan process (ex-ante) or once the County environmental action plan is completed (ex-post).

Process:

Commission a Strategic environmental Assessment study (SEA) at the start of the County Environmental Action plan (CEAP) and use the County Environmental Action plan data collection process to collect data for the Strategic Environmental Assessment (SEA). Alternatively undertake a SEA once the County Environmental Action plan is finalized.

Outcome:

A strategic Environmental Assessment (SEA) report completed for the County Environmental Action plan.

Step 3.12: Formulating the investment framework

There is also need for development of an investment framework as part of an enhanced implementation plan for the CEAP. The investment framework is important as it introduces a business model for purposes of highlighting resource requirements to invest in the implementation of County Environment Action Plan (CEAP) and the National Environment Action Plan (NEAP)

The investment framework introduces a costed budget to the plan matrix, using actual cost drivers in addition to articulation of business models for the plan. The investment framework provides opportunity for private sector participation and business investment.

Process:

Articulate in a matrix format the strategic objective or solution to the environmental challenge, its linkage to the result area and performance indicator and a 3 year rolling budget linked to the medium term development Framework and Medium Term development Plan (MTP).

Outcome:

An investment framework developed for the County Environment Action plan with costed estimation for the project. A summarized matrix of the investment framework is presented in the table below:

Table 4: Investment framework matrix

Strategic objective/ solution to EC	Result area	Short term target (annual development plan)	Long term target (5 years)	Costed budgets	3 rolling years (MTDF)

Step 3.13: Plan review

Review of the plan is once every cycle, at least in every 3 years and will involve stock taking to understand the efficiency and effectiveness of the plan as well as weaknesses and the strengths, considering its applicability and appropriateness and fit for purpose to the County government and the environment of the County. The review will advise on the improvement of the plan that will feed into the next plan.

Process:

Once every 3 years, undertake a review of the plan and update with respect to new and emerging issues and remove the environmental challenges that have been resolved through the implementation of the plan. The review will be informed by both performance and environmental monitoring reports.

Outcome:

Undertake regular review of the plan and update appropriately.

SECTION 4.0: IMPLEMENTATION MONITORING AND REPORTING

Monitoring of the implementation of the CEAP is critical in ensuring that the intended actions are implemented in order to bring about the desired environmental outcomes.

Step 4.1: Mainstreaming Environmental Action Plan into integrated development plans

Integrated Development plan is the planning blue print at the County level, while Vision 2030 is the National Development blue print. For any action to be budgeted it must be mainstreamed into the plan process through recognized planning provision. County environmental action planning and National Environment Action planning processes are statutory planning processes whose priorities are integrated into National budgeting processes.

Process:

Select the prioritized environmental challenges from the Environmental Action plans and mainstream them into the environmental sector of the County Integrated Development Plans (CIDPs) and National Development plans and generate budgets for the same and include into the yearly budgeting framework.

Outcome:

Actionable elements of the Environmental Action plan mainstreamed into the County Integrated Development Plans (CIDPs) and National Development plans and the budgeting frameworks and systems.

Step 4.2: Reporting on performance and implementation of Environment Action Plan

Reporting on implementation of the Environmental action plan will be at two levels namely reporting on processes/outputs and reporting on Impact/outcome. The reporting will focus on implementation of activities/actions in the EAP (process/output indicators) and the change in environmental quality (impacts/outcomes) as a result.

Process: Isolate Environmental performance indicators at output or activity level and undertake a monitoring assessment by measuring the level of performance with respect to the indicator against the baseline originally established. This monitoring undertaken every quarter will be reported on a prescribed format to the Director General, National Environment Management Authority (NEMA). The Authority will subsequently review the Performance report and provide feedback to the reporting entity.

Isolate Environmental outcome or impact indicators at outcome or impact level and undertake a monitoring assessment by measuring the level of improvement with respect to the indicator against the baseline originally established. This monitoring undertaken annually will be reported on a prescribed format to the Director General National Environment Management Authority (NEMA) and also through a state of the Environment report. The Authority will subsequently review the Environmental Improvement Performance report and provide a feedback to the reporting entity.

Outcome:

The Environmental Performance at output level measured by the reporting entity and report on Environmental Performance on Action plan activities filed with the Director General NEMA Quarterly and once every year.

Step 4.3: Reporting on environmental outcomes or impact of mainstreaming environment into development (environmental improvement)

Reporting on the basis of achievement in relation to the implementation of the Environmental action plan will be at two levels - the level of Environmental Performance reporting, that focuses mainly on the process elements of the Action plan and therefore will target mainly the output indicators and the impact elements of the plan and therefore focuses on the outcome indicators. All these types of indicators have been articulated and will be used.

Process:

Isolate Environmental indicators at outcome (impact) level and undertake a monitoring assessment by measuring the impact with respect to the outcome indicator against the baseline originally established. This monitoring undertaken annually will be reported on a prescribed format to the Director General National Environment Management Authority (NEMA). The Authority will subsequently review the Environmental outcome report and provide a feedback to the reporting entity. This provides the State of the Environment (SOE) for the reporting entity.

Outcome:

The Environmental outcome or impact level measured by the reporting entity and report on Environment quality improvement (State of Environment report) filed with the   Director General NEMA annually or biannually (every two level).

SECTION 5.0: GUIDELINES ON STANDARD FORMAT OF THE ENVIRONMENTAL ACTION PLAN

Section 5 of the guidelines covers the standard format of the Environmental Action plan and presents the nature of the front matter including sample foreword, sample preface and sample acknowledgement and Executive summary. Section 5 also presents the possible appearance of the various sections in the final document with respect to each other. The section also presents potential questions that need to be answered in the document narrative from analysis. Some matrices are also covered for quantitative documentation of key elements impacting on the environment.

5.0: The front matter

The Front matter of the Environment Action includes the appearances on the front page including the title, the emblems or the logo, photos if any, the Copyrights if any, the listing of the Editorial team and the contact of the Authors.

5.1: Cover page

Title: County Environment Action Plan

(Include Name of the County)

Logo or Emblem: Include the Kenya Government Logo & the County Government logo in front page.

Period of the Plan: The county Environment Action Plan is a 5 – year plan while the NEAP has a 6 year cycle.

Title page

Title page and logo of sponsors where applicable.

Copyright page

Copyright page and contact details of the County or secretariat that has authored the document.

Roman page i

Foreward by the County Governor for CEAP and the Cabinet Secretary responsible the environment for NEAP.

Roman page ii

Preface by the County executive member for environment for CEAP while the Principle Secretary responsible for environment at national level will sign the NEAP.

Roman page iii

Acknowledgement by technical officer spearheading the EAP preparation or their designated representative.

Roman page iv

List of Acronyms and abbreviations

Roman page v

Table of Contents

5.2: The foreword

The Foreword forms the opening and early statement of the document and provides the detailed narrative on the background and the Natural Resources situation and obligation for the process to the Country/county and global Community, Kenya being a signatory to the Rio Convention.

Signed off by the governor of the County for the CEAP and the Cabinet Secretary in charge of the Ministry where Environment is housed for the NEAP.

The foreword will point out the following;

- An introduction on key natural resource endowment in the County (for CEAP) or the Nation for NEAP. The importance of the Natural resources for the environment, environment services and goods and for the Economy.
- How the Natural Resource base has become vulnerable to natural, human and developmental changes in the County of Kenya.
- The need for constant monitoring and highlighting these changes and formulate means of addressing them through Environmental Action planning.
- Statement on the International obligation for Environmental Action planning fulfilling the Rio Convention requirements and how Kenya has domesticated the Convention through the Constitution and Environment Management and coordination Act Cap 387.
- Statement of any County level Environmental legislation and Policies.

- How the Environment Action Plan is going to Contribute to the County or National Economic development Agenda and Policies.
- How the Action plan links the three pillars of environment, Social and Economic Aspects of the County and Kenya.
- A statement of hope of how the Environmental Action plan will meet the goal of Environmental integrity and sustainable development.
- The foreword should preferably be one page.
- The foreword of the CEAP should be signed off with the official signature and include the full name and title of the Governor.

The NEAP will be signed off by the Cabinet secretary for environment.

5.3 The preface

The Preface occupies the next page to the foreword in the document and provides the detailed narrative on the background and reason leading to the development of the Environment Action Plan as part of the National and subsequently County obligations to the Rio Convention to which Kenya is a signatory and presents the background with respect to Environmental action planning.

The Preface of the CEAP will be signed off by the County executive member for Environment while the NEAP will be by the Permanent Secretary (PS) in the Ministry responsible for environment.

The Preface will point out the following:
- The Rio Convention and Agenda 21 provision for the development of Environmental Action Plans for Parties to the Convention.
- How Kenya has domesticated the Convention through the Constitution and Environment Management and coordination Act Cap 387.
- The Key elements provided in EMCA Cap 387 and the legal obligation of the County Government for CEAP and those for the National Government for NEAP.
- Statement of any County level Environmental legislation and Policies.
- A brief on how the process was conducted in the County for CEAP and at the National level for NEAP.

- How the Environmental Action Plan is going to Contribute to the County or National Economic development Agenda and Policies including the linkage to the County Integrated Development Plan (CIDP).
- The need for constant monitoring and highlighting these changes and formulate means of addressing them through Environmental Action planning.
- The Preface should preferably be one page.

The preface of the CEAP will be signed off with the official signature and full name and titles of the County Executive committee member for environment while the principle secretary for environment will sign off the NEAP.

5.4 The acknowledgement

The acknowledgement occupies the next page to the preface in the document and provides an appreciation for those who were involved in the process leading to the development, writing and publishing of the Action plan in one way or the other.

The acknowledgement will be signed off by the Technical Officer in charge of the Sector responsible for preparation of the CEAP, in this case the Director or Chief Executive in charge of Environment (CEC) for the County or any other designated person.

The acknowledgement will point out the following:
- Mention of the sector and the representatives of the major groups involved in the whole chain of development, editing and publishing of the guidelines including those who provided logistical and financial support.
- A statement of appreciation of their effort and involvement.
- The acknowledgement should preferably be not more than one page.
- The Acknowledgement should be signed off with the official signature and full name and titles of the Director / Chief / technical officer spearheading the process or any other designated representative.

5.5: The executive summary

The Executive Summary which occupies the next page to acknowledgement provides a snapshot of the document from the start to the end highlighting the major findings in terms of challenges to the Environment of the County for CEAP and the Country for NEAP. The Executive summary will also present the 10 point priority challenges and actions to address them for the County / country.

The Executive summary will point out the following:

- The Rio Convention and Agenda 21 provision for the development of Environmental Action for Parties to the Convention.

- How Kenya has domesticated the Convention through the Constitution and Environment Management and coordination Act Cap 387.

- The Key elements provided in EMCA Cap 387 and the legal obligation of the County Government for CEAP and those for the National Government for NEAP.

- Statement of any County level Environmental legislation and Policies.

- A brief on how the EAP preparation process was conducted. How the Environmental Action Plan is going to Contribute to the County /National Economic development Agenda and Policies including the linkage to the County Integrated Development Plan (CIDP).

- The need for constant monitoring and highlighting these changes and formulate means of addressing them through Environmental Action planning.

- Indicate the key thematic sectors covered by the Environmental Action plan as provided in the guidelines and customized for the Counties and the Nation.

- Provide a snapshot of the County Environment (CEAP) and the National Environment (NEAP) as documented through the profiling process arranged in a chapter format.

- Provide a snapshot of major environmental challenges documented for each sector during the analysis and presented in form of chapters of the action plan.

- The executive summary will state the 10 point prioritized environmental challenge and proposed environmental solution for the Counties for CEAP and the Country for the NEAP.
- The executive summary will also state the likely cost of implementing the Environmental Action plan from the investment framework developed during the process.

LIST OF ANNEXES

Annex I: Annotated chapters of the County Environmental Action Plan

The EAP process

Chapter 1: Background information

- Rationale

- purpose

- Scope

    o   Context

    o   Spatial

    o   Temporal

- Vision

- Mission

Environment Action Plan Process

- County Environment committee

- Establishment of the Planning team

- Stakeholder engagement

- Stakeholder validation

- County Environment Committee approval

- Challenges for planning

- Planning solution

Chapter 2: County Profile

- County Size ,extent and placement

- Provide Spatial representation (maps)

County Geology and physiography

- Provide a Brief Introduction to the chapter

- Geology ,Terrain, physiography
- Provide Spatial trends/change
- Environmental challenges related to Geology ,terrain and Physiography
- Propose areas of research
- Solution to identified Environmental challenges

Chapters 3: Land and Soils

- Provide a brief Introduction on land and soils
- Land tenure systems, land ownership and management
- Land use types, land sizes and land use change
- Land access and land use conflicts
- Soil types and Agro-ecological Zones
- Soil fertility and vulnerability
- Provide analytical profile of uses ,trends and state
- legal issues and recommend legal measures
- Fiscal issues and recommend fiscal measures
- Areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Case studies

Chapter 4: Climate Change and Variability

- Provide a brief introduction to the chapter
- Weather averages and trends (temperature, precipitation, humidity, drought)
- Climate Change and present weather trends
- Patterns of climate change and impacts on natural resources & Environment (see IPCC report)
- Patterns of climate change and socio-economic impacts - sex, equity, access, benefit sharing accountability, and decision making (see IPCC report)
- Assess vulnerabilities and as result of climate change (floods, drought, famine diseases, biodiversity decline, water scarcity, food security)
- Identify and document some coping mechanisms to climate change

- legal and policy approaches dealing with climate change on the environment
- list natural resource use conflicts arising from climate change including coping mechanism e.g. warthogs pricking the stomach of shoats to drink water in Gurufa of Garissa County etc
- Identify incentives and interventions to cope with the effects of climate change
- Identify existing environmental awareness and education programmes on climate change adaptation and mitigation
- Identify existing climate change adaptation and mitigation interventions (Energy saving initiatives, self-employment,)
- Environmental(climate change) Challenges for planning
- Solutions to identified environmental challenges

Table 1: Adaptation and mitigation measures on effects of climate change

Climate change related issue	Impacts on the environment	Adaptation/ Mitigation action to be taken	Responsibility	Cost (kshs) estimates
Frequent droughts	livestock deaths, reduced pastures, famine	Dams, sale of animals, purchase hay, planting of drought tolerant, pasture and crops, range reseeding	Livestock department, Agriculture department, Water, NGOs	100m

Chapter 5: Water Resources and Water Pollution

- Provide a brief Introduction to the chapter
- Describe the Water resources and the Water Basins
- list the Rivers, lakes & seas and their extent and status
- Describe the quantity and distribution of water resources
- Describe the quality of water within the resources
- Provide the Water potential and use scarcity etc
- Provide the analytical profile of uses of water
- Establish state, trends
- legal issues and recommend legal measures

- Fiscal issues and recommended fiscal measure
- Recommended areas for research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best case study

Table 2: Source of water by type and yields

Source/Type	Quantity (Numbers)	Cubic Meters (M3) yield
Borehole		
Rivers		
Dams		
Spring		
Lakes		
Note:List not exhaustive		

Chapter 6: Wildlife, Biodiversity and Tourism

- Provide a brief Introduction of the chapter
- Describe Wildlife and Biodiversity types in the County
- Describe the Species composition of the Biodiversity and wildlife.
- Describe the ecosystems in the County and their species richness.
- Describe the terrestrial areas under protection
- Indicate proportion of species threatened
- Proportion of terrestrial and protected areas
- Proportion of initiatives for protection of ecosystems
- Proportion of non-Ramsar sites protected and non-protected (size, rehabilitated)
- Proportion of threatened plant species
- No. of known plant and animal species
- No. of threatened animal species
- Proportion of species threatened with extinction compared to the total known plant/animal species
- Proportion of Invasive species
- Legal and policy issues and recommended legal measures

- Fiscal issues and recommend fiscal measures
- Value & functions of wildlife and biodiversity forest in Kenya
- Number of Ramsar sites Gazetted
- Proportion of terrestrial and protected areas
- Number of initiatives for protection of ecosystems
- Number of non-Ramsar sites protected and non-protected (size, rehabilitated)
- No. of threatened plant species
- No. of known plant and animal species
- No. of threatened animal species
- Proportion of species threatened with extinction compared to the total known plant/animal species
- No. of Invasive species

Chapter 7: Coastal Marine and Wetlands

- Proportion of marine areas protected
- Proportion of marine species threatened with extinction
- Marine atrophic index
- Proportion of marine areas protected
- Area of coral reef and ecosystems and percentage live cover
- Change in area under mangrove forests
- No. of invasive species
- Environmental Challenges for planning
- Solutions to identified environmental challenges

Chapter 8: Forest and Woodland and Ecosytems

- Provide a brief Introduction of the chapter
- Forest cover types, areas and species composition
- Describe Forest uses by communities and indigenous knowledge
- Describe Forest change (spatial & temporal)
- Establish state ,trends and analytical profile of uses
- Describe the threats and state of the forest.
- Legal and policy issues and recommended legal measures

- Fiscal issues and recommend fiscal measures
- Value & functions of forest in Kenya
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Table 3: Forest, Woodland and grass land issues and proposed mitigation measures

Issue	Impacts on environment	Mitigation measures (Action to be taken)	Responsibility	Cost Kshs in Millions
Forest encroachment	Degradation and reduced forest cover	- Demarcation and gazzettement - Reforestation of 100 Ha	KFS, KWS, Ministry of Lands	Ksh20M

Chapter 9: Agriculture, Livestock and Fisheries

Agriculture

- Provide a brief Introduction of the chapter
- Describe various agricultural practices and the impacts on the environment
- Describe the Land productivity in relation to crops grown
- Describe the climate change vulnerabilities of agricultural sector (flooding, drought, diseases, precipitation etc)
- Describe the coping mechanisms including indigenous knowledge
- Identify the Agricultural inputs and usage (fertilizers & pesticides), management and impacts on the environment
- Identify the agro-based industries and their impacts on the environment and mitigation measures
- Analyze the management of agricultural waste.
- Identify mitigation measures to the impacts of agricultural practices on the environment
- Propose appropriate production systems, marketing channels including value addition to increase income per unit of land area

- Legal an Policy issues and recommended policy measures
- Fscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Cases Study

Table 1: Agricultural practices and the impacts on the environment

Agricultural practice	Contribution to economy (estimate) kshs	Impacts on the environment	Mitigation measures (Action to be taken)	Responsible agency	Cost Kshs (estimate)
Mono cropping (Coffee farming)	2 billion	Increase in pests, Loss of soil fertility, loss of biodiversity, water pollution	Introduction of integrated pest management	MOA	15M

Livestock

- Provide a brief Introduction of the chapter
- Describe various livestock keeping practices (pastoralism, other livestock) and the impacts on the environment
- Describe the climate change vulnerabilities of livestock sector (flooding, drought, diseases, precipitation etc)
- Describe the coping mechanisms including indigenous knowledge
- Identify the livestock inputs and usage (fertilizers & pesticides), management and impacts on the environment
- Identify the livestock based industries and their impacts on the environment and mitigation measures.
- Identify mitigation measures to the impacts of livestock based practices on the environment
- Propose appropriate production systems, marketing channels including value addition to increase income.

- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Table 5: Livestock Production Systems and their impacts on the environment

Production System	Contribution to economy (estimate) kshs	Impacts on the environment	Mitigation measures (Action to be taken)	Responsible agency	Cost Kshs (estimate)
Nomadic Pastoralism	100m	Over grazing, Soil erosion	Controlled stocking	MOL, Ministry of Northern Kenya and other ASAL Areas	3m

Fisheries

- Provide a brief Introduction of the chapter
- Describe various fishing practices and the impacts on the environment
- Describe fish keeping practices (aquaculture & cage farming) and their impacts on the environment.
- Describe the climate change vulnerabilities of fisheries sector (flooding, drought, diseases, precipitation etc)
- Describe the coping mechanisms including indigenous knowledge
- Identify the fish processing industries and their impacts on the environment and mitigation measures
- Analyze the management of fisheries waste.
- Propose appropriate production systems, marketing channels including value addition to increase income.
- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures

- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Chapter 10: Settlement, Urbanization and Transportation

Settlement

- Provide a brief introduction of the chapter
- Describe Types and patterns of rural settlement
- Describe how this has impacted on rural development and environment
- Proportion of rural and urban population
- Describe the standard housing in rural areas
- Rural land use practices
- No of population living below Poverty index
- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Urbanization

- Provide a brief introduction of the chapter
- Describe types and patterns of urban settlement
- Describe urban categories by name
- Indicate proportion of rural and urban population
- Describe Urban land use practices
- List the number of informal settlements in the urban areas
- Proportion of population with access to solid waste services
- Proportion of population living in informal settlements

- Describe Number of population living below Poverty line
- Proportion of population in informal settlement with access to sanitary facilities
- Proportion of population in informal settlement with access to solid waste management services
- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Transportation

- Provide a brief introduction of the chapter
- Describe types of public transportation
- Indicate the number of population served by public transport
- Provide proportion of population with private cars
- No of passenger service transfer stations (bus)
- Legal and Policy issues and recommended policy measures
- fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Chapter 11: Energy, Mining, Industry and Trade

Mining

- Provide an introduction to the chapter
- Number and rate of industries adopting clean technologies
- Number of prospecting licenses issued
- Number of EIA licenses issued for mining sector
- Number of disused mines
- Number of disused mines rehabilitated
- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Energy

- Electricity production total per capita and per source
- Proportion of households with access to electricity
- Proportion of renewable energy in total energy use
- Ambient concentration of air pollutants CO_2, SO_2, NO_2 in urban areas
- Number of EIA licenses issued for energy sector
- Legal and Policy issues and recommended policy measures
- Fiscal issues and recommended measures
- Recommended areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges

Industry

- Proportion of households with access to electricity
- Proportion of renewable energy in total energy use
- Ambient concentration of air pollutants (CO_2, SO_2, NO_2) in urban areas
- Quantity and number of licenses issued for ODS

- Number and rate of industries adopting clean technologies
- Environmental Challenges for planning
- Solutions to identified environmental challenges

Chapter 12: Health Sanitation and Waste

Health

- Provide a brief introduction to the chapter linking health to the environment
- Describe the sanitation status
- Describe the status, Access and availability of clean water
- Describe the status, Access and availability of Health facilities
- Identify major pollution sources
- Identify the various types of waste(both liquid and solid) generated and disposal methods
- Identify challenges facing disposal of different types of waste
- Identify major environmentally related diseases e.g., malaria, typhoid
- Identify challenges facing provision of sanitation and health services
- Analyze the Trends of incidences and severity of environment related diseases
- Propose strategies to mitigate environmentally health related challenges
- Legal issues and recommended legal measures
- Fiscal issues and recommended fiscal measures
- Proposed areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges

Sanitation

- Provide a brief introduction to the chapter linking health to the environment
- Describe the sanitation status
- Describe the status, Access and availability of clean water
- Identify major pollution sources
- Identify the various types of waste (both liquid and solid) generated and disposal methods

- Identify challenges facing disposal of different types of waste
- Identify major environmentally related diseases e.g., malaria, typhoid
- Identify challenges facing provision of sanitation and health services
- Analyze the Trends of incidences and severity of environment related diseases
- Propose strategies to mitigate environmentally health related challenges
- Legal issues and recommended legal measures
- Fiscal issues and recommended fiscal measures
- Proposed areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Waste

- Provide a brief introduction to the chapter on Waste
- Describe categories and types of solid waste
- Describe the status of solid waste in the County
- Describe the proportion of population with access to solid waste services
- Identify the various types of waste (both liquid and solid) generated and disposal methods
- Identify challenges facing disposal of different types of solid waste
- Identify challenges facing provision of solid waste facilities
- Legal issues and recommended legal measures
- Fiscal issues and recommended fiscal measures
- Proposed areas of research
- Environmental Challenges for planning
- Solutions to identified environmental challenges
- Best Case study

Chapter 13: Environmental Hazards and Disasters

- Give a brief Introduction of the chapter distinguishing between hazard and risks
- Describe number and location of flood incidences
- Provide corresponding number of displaced people
- Provide acreage of areas covered/affected by floods
- Provide estimate of cost of destruction caused by floods
- Provide acreage/areas affected by droughts
- Provide -incidences of resources use conflicts
- Number of human livelihoods lost
- Presentation of NDVIs
- Number of lives lost
- Estimate types of property and estimation of loss
- Legal issues and recommended legal measures related to hazards
- Fiscal issues and recommended fiscal measures related to hazards and risks
- Proposed areas of research on hazards and disasters
- Emergency preparedness for hazards and disasters
- Hazard and disaster mitigation efforts
- Hazards and disasters and disaster forecasting
- Name and Number of institutions with emergency preparedness.
- Environmental challenges arising from hazards and disasters
- Solution for Environmental hazards and disasters
- Best Case study

Chapter 14: Research, Technology and Innovation
Research

- Give a brief Introduction of Environmental Research
- Describe Institution dedicated to Environmental Research
- Describe Universities dedicated to Environmental Research
- Identify Legal issues and recommended legal measures related to Environmental Research
- Identify Fiscal issues and recommended fiscal measures related to Environmental Research
- Highlight any research/ innovations addressing environmental challenges

- No of publication on Environmental Research
- Identify proposed Environmental Research areas.
- Identify Environmental Research challenges
- Propose Solutions for Environmental research challenges
- Best Case study

Technology

- Give a brief Introduction on Environmental Technologies
- Describe new Environmental Technologies
- Describe Institutions dedicated to Environmental Technologies development
- Describe new Patents of Environmental Technologies
- Identify Legal issues and recommended legal measures related to Environmental Technologies
- Identify Fiscal issues and recommended fiscal measures related to Environmental Technologies
- Identify proposed research areas related to Environmental Technologies.
- No of Industries with GHG, emission technology installed
- No of green energy technologies in use (solar, wind, electricity etc)
- No of research institute dedicated to environment
- No of publication on environment
- No of new innovation on environment
- Identify Environmental challenges to Technology development
- Propose Solutions to Environmental challenges in Technology development
- Best Case study

Innovation

- Give a brief Introduction of Environmental innovation
- Describe new innovations on environment
- Describe Institutions dedicated to environment innovation
- Describe Universities dedicated to environment innovation
- Describe Patents for Environmental innovation
- Identify Legal issues and recommended measures related to environmental innovation
- Identify Fiscal issues and recommended fiscal measures related to environmental innovation.
- Identify proposed research areas related to environmental innovation.
- Identify Environmental innovation challenges for planning
- Propose Solutions to challenges in Environmental innovation development
- Best Case study

Chapter 15: Environmental Education Information and Communication

Environmental Education/Education for Sustainable development

- Give a brief Introduction of Environmental Education or Education for sustainable development
- Describe existing Environmental Education or Education for sustainable development   efforts
- Analyze levels of Environmental Education or Education for sustainable development
- Identify Environmental Education or Education for sustainable development   gaps
- Determine impact of Environmental Education or Education for sustainable development
- Identify Environmental Education or Education for sustainable development research areas

- Environmental Education or Education for sustainable development Challenges for planning
- Environmental Education or Education for sustainable development option areas

Knowledge management

- Give a brief Introduction of Environmental Knowledge management
- Describe existing Environmental Knowledge management efforts
- Analyse levels of Environmental Knowledge management efforts
- Identify Environmental Knowledge management gaps
- Determine impact of Environmental Knowledge management
- Identify Environmental Knowledge management research areas
- Environmental Knowledge management Challenges for planning
- Solution to identified Environmental Knowledge management challenges

Information and communication

- Give a brief Introduction of Environmental information and Communication
- Describe existing Environmental information and Communication efforts
- Analysis levels of information and Communication efforts
- Identify Environmental information and Communication gaps
- Determine impact of information and Communication
- Identify Environment information and Communication research areas
- Environmental information and Communication Challenges for planning
- Environmental information and Communication option areas

Chapter 16: Environmental Governance, Environmental Compliance and Enforcement

Governance

- Give a brief description of the Concept of Governance
- Describe key elements of Governance
- Discuss elements of Governance
- Describe how environmental governance at the local/national level is contributing to environmental management

Transparency

- Give a brief Introduction of Environmental Transparency
- Describe existing Environmental Transparency elements
- Analyze levels of Environmental Transparency
- Identify Environmental Transparency gaps
- Determine impact of Transparency
- Identify Environment Transparency research areas
- Environmental Transparency challenges

Environmental Accountability

- Give a brief Introduction of Environmental Accountability
- Describe existing Environmental Accountability elements
- Analyze levels of Environmental Accountability
- Identify Environmental Accountability gaps
- Determine impact of Accountability
- Identify Environmental Accountability research areas
- Environmental Accountability Challenges

Equity & benefit sharing

- Give a brief Introduction of Environmental Equity & benefit sharing
- Describe existing Environmental Equity & benefit sharing effort
- Analyze levels of Environmental Equity & benefit sharing effort
- Identify Environmental Equity & benefit sharing gaps
- Determine impact of Equity & benefit sharing effort
- Identify Environment Equity & benefit sharing effort research areas
- Environmental Equity & benefit sharing Challenges
- Environmental Equity & benefit sharing options

Access to information

- Give a brief Introduction of Access to Environmental information
- Describe existing Environmental information access efforts
- Analyze levels of Access to Environmental information
- Identify Environmental information access gaps
- Determine impact of Access to Environmental information
- Identify Environment information access research areas
- Environmental information access Challenges
- Environmental information access options

Policy

- Give a brief Introduction of Policy area
- Describe existing Environmental Policies
- Analyze levels of Policy implementation
- Identify Environmental Policy gaps
- Determine impact of Policy
- Identify Environment Policy research areas
- Environmental Policy Challenges
- Environmental Policy options

Policy	Description	Current status of implementation	Implementation/ Issues arising	Actions	Responsibility

Legislation

- Give a brief introduction of the legislative area
- Describe existing Environmental legislation
- Analyze levels of legislation implementation
- Identify Environmental legislation gaps
- Identify the impact of Environmental legislation
- Identify Environmental legislation research areas
  - o Environmental legislation Challenges
  - o Environmental legislation option areas

Legislation	Description	Current status of implementation	Implementation / Issues arising	Actions	Responsibility

Compliance

- Give a brief introduction on compliance level
- Describe existing Environmental Regulations
- Analyze levels of compliance to the regulations
- Identify Environmental regulation gaps
- Determine the impact of compliance and non-compliance
- Identify Environmental compliance research areas
- Environmental regulation Challenges
- Environmental regulation options

Regulation Legislation	Description	Current status of implementation	Implementation/ Issues arising	Actions	Responsibility

Enforcement

- Give a brief introduction of enforcement level
- Describe level of Environmental enforcement
- Identify Environmental enforcement gaps
- Determine the impact of enforcement
- Identify Environmental enforcement research areas
- Environmental enforcement Challenges for planning
- Environmental enforcement option areas

Enforcement	Description	Current status of implementation	Implementation/ Issues arising	Actions	Responsibility

Chapter 17: People Environment, Economy and Development

People

- Gross Population
- Population growth rate
- Migration trends (rural - urban migration)
- Proportion of people living in informal settlements
- Area covered by informal settlements
- Proportion of population using improved sanitary facilities
- Number of gender Concerns mainstreamed in Environment
- Number of Youth Concerns mainstreamed in Environment
- Access to Natural Resource and use
- Socio economic dynamics
- No of green jobs created in the Employment sector (green jobs)

Economy and development

- Major Community livelihoods and impacts on Environments
- Demography (population, birthrate, age structure)
- Level of Efforts for sustainable livelihoods
- Existing incentives legal & fiscal
- Existing dis-incentives - legal & fiscal
- Environmental education awareness methods & level of engagements
- Assessment of the infrastructure and their impact
- Intergenerational and intergenerational intervention

Poverty and Environment

- Describe poverty and environment inter relations (e.g. whether people are conscious about environmental conservation as they strive to eke a living or maximize personal gain / profits)
- Provide current poverty levels figures and the most affected

Gender and Environment

- Identify Gender related environmental issues
- Analyze gender issues (equity, access, benefit sharing, accountability and decision making) in the utilization of natural resources
- Briefly Analyze use of resources by different gender
- Level of mainstreaming gender in natural resources utilization and conservation
- Different roles of men, women, boys and girls in environmental conservation in the country
- Provided mitigation actions

Chapter 18: Environment and Climate Change Finance

- Type and Number of Financial Policies &legislation in place
- % of national/County budget allocated for environmental management
- Amount of money from development partners for environmental management
- Percentage of funding for \environmental research, Technology & innovation
- Taxation types & levels on environment
- Amount and % of Revenue from Environmental Revenue

Chapter 19: Public Private Partnerships
Public Environmental Partnership in the County/Country

- Provide list of public Environmental partnerships in the County.
- Indicate the aims of partnerships
- Indicates the achievements and successes of the partnerships
- Recommend legal measures
- Recommend fiscal measures
- Prioritize issues to take to the plan
- Propose areas of research
- Profile best case studies on partnership
- Provide challenges to the partnership
- Provide solution to the partnership challenges

Private Environmental partnerships

- Provide list of Private Environmental partnerships in the County/country.
- Indicate the aims of partnerships
- Indicates the achievements and successes of the partnerships
- Recommend legal measures
- Recommend fiscal measures
- Prioritize issues to take to the plan
- Propose areas of research
- Profile best case studies on the partnerships
- Provide challenges to the partnership
- Provide solution to the partnership challenges

Public Private Partnership and platforms

- Provide list of public Environmental partnerships in the County.
- Indicate the aims of partnerships
- Indicates the achievements and successes of the partnership
- Recommend legal measures
- Recommend fiscal measures
- Prioritize issues to take to the plan
- Propose areas of research
- Profile best case for the partnership
- Provide challenges to the partnership
- Provide solution to the partnership challenges

Chapter 20: Plan Implementation

The EAP implementation will be guided by a summarized implementation plan, an investment plan and monitoring plan that comprise the final chapter of the document.

The Implementation plan is a summary that outlines the identified challenges and proposed strategic actions and includes activities, actors, timeframe and budget. All identified environmental challenges and proposed actions should be included in the implementation plan.

A sample implementation plan is illustrated below:

Implementation Plan

Environmental Challenge	Solution to the Environment challenge	Activities	Timeframe	Budget	Actor

The investment plan outlines the prioritized activities addressing the challenges as ordered for implementation in the short term, medium term and long term. The investment plan aligns the EAP to other planning and budgeting cycles.

A sample investment plan is illustrated below:

Sample Investment plan & Budget

Strategic objective/ solution to Environmental Challenge	Result area	Short term target (annual development plan)	Long term target (5 years)	Costed budgets	3 rolling years (MTDF)

The Monitoring plan seeks to assess the progress in implementation of the EAP as illustrated by objectively verifiable indicators (OVIs) and as documented in identified Means of Verification (MOV).

A sample monitoring plan is illustrated below:

Sample Monitoring Plan

Challenge	Solution to the challenge	Activities	Means of Verification	Objectively verifiable indicators	Time frame	Budget

Sample References

The EAP should also list the references of all publications referred to for data and information using the standard referencing format as per the example below.

1.   Gachene, C.K.K. and Kimaru, G. (2003). Soil Fertility and Land Productivity - A guide for extension workers in the eastern Africa region. Technical Handbook No.30. Regional Land Management Unit (RELMA)/ Swedish International Development Cooperation Agency (Sida). ISBN: 9966-896-66-X.

2.   GoK, (2009). Ministry of Environment and Mineral Resources (2009). National Climate Change Response Strategy-"Together we can tackle climate change". Government Printers. Available at http:/www.environment.go.ke

3.   GoK (2010). Kenya State of the Environment and Outlook (2010). A Publication of National Environment Management Authority. Printed by Progress Press Ltd. Malta

4.   NEMA (2006/7). National Environment Action Plan Report Effects of Climate change and Coping Mechanisms in Kenya,

5.   Owino A. O. & Oyugi, J. O. (2009). Species concepts and biodiversity conservation: An overview sq km of basic taxonomic diagnosis. Ecological Monographs (submitted).

Annex II: Indicator baseline assessment checklist

In order to enable objective reporting, the Indicators list has been processed into an Indicator baseline checklist - a checklist with a few indicators to be used to determine the baseline for reporting. Use of indicators enables an objective assessment of the status and integrity of environment and achievement of performance designed during the environmental planning process. The use of environmental indicators for baseline assessment will provide the opportunity for establishing the baselines hence structured monitoring programme and improvement in environmental integrity. From the baseline an objective report can be developed on the EAP implementation.

Reporting on the basis of achievement in relation to the implementation of the Environmental action plan will be at two levels, the level of Environmental Performance reporting, that focuses mainly on the process elements of the Action plan and therefore will target mainly the output or activity indicators and the impact elements of the plan and therefore focuses on the outcome indicators, all these types of indicators have been articulated and will be used. These two levels of indicators will be distinguished for clarity. Core indicators respond to the policy assessment and therefore will provide elements for assessing the policy impact of the Plan. The indicator baseline assessment is marked (1) for presence and (0) for absence, and the measured value will be scored in the last column depending on the appropriate units.

Indicator baseline assesment checklist table					
No	**Thematic sector**	**Sub theme**	**Annotated elements /Indicators**	**Presence (1) absence(0)**	**Indicator Units**
1	Preliminaries		• Is the Goal of the plan stated • Is the purpose of the plan stated • Is the scope of the plan outlined (context, spatial, temporal) • Is the Vision of the plan stated		
2	County Environmental Action plan process		• County Environment committee established and working • Environmental Planning team established and working • 15 guidelines steps followed • CEAP approved through due diligence • CEAP developed and submitted to DG NEMA procedurally		
3	County Physiography		• Has the Boundary changed		
	land and Soils		• List the land tenure systems • Extent (area)and type of land use system • Extent (area)of Soil fertility outlook o Extent, level of Soil mineral nutrient o Soil moisture content o Soil humus • Extent (area)with gulleys,erosion • Extent (area) of rills erosion • Extent (area) of sheet erosion • Extent (area) with erosion risks • Extent (area) with erosion risks • Extent (area) with alkalinity /acidity risks • Extent (area) with aridisisation risks		
4	Climate change and climate variability		• Number of recorded negative or positive trends in precipitation and flood patterns • Number of recorded negative or positive trends in temperature patterns • Number of recorded negative or positive trends in drought patterns • Number of recorded negative or positive trends in humidity patterns • Number of recorded extremes weather events of the weather elements • Are there increased severity of the above weather elements		

Indicator baseline assesment checklist table

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
5	Forest and Woodlands and Ecosystems		• Percentage (%) of land cover area under forests • Percentage (%) of protected forests areas against total forests areas • Percentage area facing deforestation & degradation • Percentage area afforested, reforested and restored • Number, and types of ecosystems • Number and types of ecosystems services and goods derived from these ecosystems		
6	Wildlife Biodiversity and Tourism		• Number and Acreage of terrestrial areas under protection • Number and acreage of wetlands under protection • Number and acreage of wetlands under protection under Ramsar • Number and acreage of wetlands not under any protection • List and population of known plant and animal species • List and Number of threatened animal and plant species • List and acreage covered by invasive species of plants and animals • Number of initiatives for protection of ecosystem		

7	Water Resources and Water Pollution	Water Resources	• Number of Water Basins and Water Resources
			• list of Rivers, lakes &springs and their Water quality status according parameters below
			  o pH
			  o Chemical Oxygen Demand (COD)
			  o Biological Oxygen Demand (BOD)
			  o Trace elements
			  o Fecal coliforms
			• List and acreage of Water catchment areas (forest, wetlands and springs)
			• Water quantity and distribution (deficit)
			• Water demand for domestic , irrigation industry and other uses
			• Long term trends of river flow levels , lake levels and ground water levels
			• Amount of rain water and runoff water harvested
			• Area of Water catchment areas rehabilitated
			• Number of water monitoring stations working
			• No. of boreholes sank and yields their yields in urban and rural areas		

6					

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
		Water pollution	• Percentage of (%) of population using improved sanitation facilities (urban/rural).		
8	Coastal Marine and Wetlands		• Number and Acreage of Marine Protect Areas (MPA) • Number and acreage of coastal wetlands under protection • Number and acreage of wetlands under protection under Ramsar • Number and acreage of wetlands not under any protection • List and population of known plant and animal species • List and Number of threatened animal and plant species • List and acreage covered by invasive species of plants and animals • Number of initiatives for protection of coastal and Marine ecosystem • List and proportion of marine species threatened with extinction • Marine atrophic index (CSD) • Area of coral reef and ecosystems and percentage live cover (CSD) • Change in area under mangrove forests		
9	Agriculture, livestock and Fisheries	Agriculture	• Refer land soil indicators as well • Area under different land uses • Area under different agricultural and crop activities • percentage of arable land that is protected from soil erosion • Percentage of land under irrigated agriculture • Amount of fertilizer used • Amount of pesticide used • Trend of drought incidences & crop failure • Acreage or proportion of agricultural land affected by invasive species- • Acreage of indigenous crops planted • Types and Level (% of population, farmers) of adoption of new agricultural technologies.		

Indicator baseline assesment checklist table

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
		Livestock	• Number of livestock kept (free rang & improved breeds) • Acreage degraded land due to overstocking • Incidences of livestock diseases • Number of livestock deaths due to drought, fodder scarcity etc • Number of incidences of resource use conflicts • Number of holding grounds and green zones		
		Fisheries	• Tonnage of Marine fish landed • Tonnage of fresh water fish landed • Tonnage of aqua culture fish • Number of fish ponds in wetlands • Number of mariculture sites in mangrove areas • Number of cages in lake Victoria • No of sea going vessels & fishing gear • Environmental Challenges for planning • Solution to environmental Planning challenges • Best Case studies		
10	Settlement, Urbanization and Transportation	Settlement	• Patterns and Number of rural settlement • Number of urban settlements and their corresponding population • Percentage of urban compared to rural population • Types and Number of houses • Poverty index • No of population living below poverty line		

Indicator baseline assesment checklist table

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
		Urbaniza-tion	• Patterns and Number of rural settlement • Number of urban settlements and their corresponding population • Percentage of urban compared to rural population • Percentage of population with access to Water supply • Number of informal settlements in the urban areas • Percentage of population with access to waste Water treatment • Percentage of population with access to solid waste services • Poverty index • Percentage of population in informal settlement with access to sanitary facilities • Percentage of population in informal settlement with access to solid waste • Number and type of informal settle-ment areas		
		Transporta-tion	• List of common public transport systems • No of population using public transport • Percentage of population with private cars • Number of passenger service trans-fer stations (bus) • Ambient air concentration air pollutants CO2 SO2 NO2 in urban areas		
11	Energy, Mining Industry and Trade	Mining	• Number and types of mines • Number of prospecting licenses issued • Number of EIA licenses issued for mining sector • Number of disused mines • Number of disused mines rehabil-itated • Number of mining disaster inci-dences • Ambient air concentration around mines particulate matter ,CO2 SO2 NO2 • Number and rate of mining indus-tries adopting clean technologies		

Indicator baseline assesment checklist table					
No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
		Energy	• Level (amount) and type of Energy production effort (renewable & non-renewable) • Proportion of renewable energy equipment acquired /imported (solar, wind, refrigerators etc) • Percentage of households with access to electricity • Percentage of renewable energy against total energy use • Proportion of buildings adopting LED (LED bulbs) • Level and Type of LED equipment imported • Number of institutions embracing sustainability • Ambient concentration of air pollutants CO2 SO2 NO2 in urban areas • Number of EIA licenses issued for Energy sector		
		Industry	• Types and Number of Industries (Agro-based, Chemical, Cement etc) • Number and Type of effluent treatment plants (ETP) • Quality of effluent discharges into environment (BOD, COD, PH, heavy metals, SO_4, NO_2, PO_4) • Proportion of renewable energy against total energy use in Industry • Ambient concentration of air pollutants CO2, SO2, NO2 in urban areas • Quantity and number of licenses issued for Ozone Depleting Substances (ODS). • Number and rate of industries adopting clean technologies • Number of industries filing sustainability reports (GRI) • Levels of air quality emissions from Industry CO2, SO2, NO2 and GHG		
12	Health Sanitation and waste	Sanitation	• Percentage population with access to primary health care • Percentage of urban population living in informal settlements • No. of education and awareness programme initiated • Percentage of population with access to solid waste services • Percentage of population connected to sewer systems • Percentage of population with access to portable water		

Indicator baseline assesment checklist table				
Thematic sector	**Sub theme**	**Annotated elements /Indicators**	**Presence (1) absence(0)**	**Indicator Units**
	Waste	• Percentage of population with access to primary health care • Percentage of urban population living in informal settlements • No. of education and awareness programmes on waste management initiated • Number and type of facilities for handling Waste (i.e transfer stations, dumpsite, landfills) • Number of waste equipment acquired & functional (low loaders, skips, lorries etc) • Percentage of population with access to solid waste services • Percentage of population connected to sewer systems • Quantity (tonnes)and types of waste generated annually • % of employees in waste services • solid waste management strategies developed • Number and type of facilities handling hazardous waste • Amount of money spent on waste management		
Environmental hazards and disasters.		• Number of flood incidences and Number displaced • Number of drought incidences –and population affected • Acreage of areas covered/affected by floods • Estimated costs of destruction by floods- • Level of Emergency preparedness programme • Disaster risk reduction & mitigation programmes.		
Research Technology and innovation	Environmental Research	• No of Industries with GHG emission reduction technology installed • No of green energy technologies in use (solar ,wind, electricity etc) • No of research institutes dedicated to environment • No & Name of Institution dedicated to environment research • Number of research institutions & universities dedicated to Environmental research • Level (amount) of environmental research funding		

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
		Environmental Technology	• No of green energy technologies in use (solar ,wind, electricity etc) • No of research institutes dedicated to environment Technology • Proportion (%) of institutions dedicated to environment Technology development		
		Innovation	• No of new innovations on environment • Institutions dedicated to environmental innovation • Patents of Environmental innovation • Number of innovations successfully up scaled		
15	Environmental education information and Communication	Environmental Education	• Number of institutions with websites containing environmental information • Number of programmes in the media covering environmental issues • Number of tertiary institutions with ESD programmes • Number of programmes on ESD in high schools • Number of ESD programmes in primary schools • Number of ESD programmes in Adult literacy classes • Number of students benefiting on ESD		
		Environmental Information	• Number of institutions with Environment Information management systems • Number of institution with functional GIS station • Number of institutions with knowledge management systems dedicated to Environment • Number of WEB platforms with environmental information		
		Environmental Communication	• Number of WEB platforms with environmental information • Number of Media programmes on environment & climate change • Number of environmental awareness programmes run on local stations • Number of exhibitions dedicated to Environment • Proportion (%) of total population reached with Education, Information & Communication (IEC)		

Indicator baseline assesment checklist table

Indicator baseline assesment checklist table

	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
16	Governance, Compliance and enforcement (participation, equity, transparency	Policy	• Number of Environmental related Policies formulated • Number of Environmental strategies developed • Numbers of functional CECs & ECs, Forest associations, water user associations, Information Centers, BMUs (minutes and reports) • No of MEAS domesticated		
		legislation	• Number of Environmental related legislations enacted • Number of successful prosecutions. • Number of Environmental related licenses issued • Number of EIAs/EAs and SEAs licenses issued • Number of water quality & waste licenses issues • Number of EMPs developed & are being implemented		
		Compliance & enforcement	• Number of illegal equipment's seized (eg fishing gears,) • Number of complains, and prosecutions on environmental pollution • Number of compliance promotions undertaken • Number of compliance assurance programs mounted • Number of enforcement action taken • Sector improvement in % due to compliance actions		
		Physical Planning and Development Control	• Number of Physical Developments Plans • Number of spatial plans in counties		
17	Environment and Climate Change Finance		• Type and Number of Financial Policies & legislation in place • Existence of a unique environment finance mechanism (insurance, climate finance etc) • % of national/County budget allocated for environmental management • Amount of money from development partners for environmental management and climate change • Percentage of funding for environmental research, Technology & innovation • Taxation types & levels on environment • Amount and % of Revenue from Environmental (natural resources) Revenue		

Indicator baseline assesment checklist table

No	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
18	People Environment, Economy and development		• Population growth rate • Number of people moving to urban areas • Number of gender Concerns mainstreamed in Environment • Number of Youth Concerns mainstreamed in Environment • Number of Programmes of enhanced access to Natural Resource and use • No of green jobs created in the Employment sector (green jobs)		
		Environment & Socio-Economic development	• County/National GDP • Proportion (%) of natural resources contribution to GDP (e.g ,wildlife & tourism, sand harvesting, pasture, fish, water for irrigation etc) • Rate of extraction of the resource • Proportion (%) of population involved in the sector • Proportion (%) of cohort involved in the sector • Number of policies, programmes and projects addressing degradation of resource		
		Poverty & Environment	• County poverty index • Proportion (%) of population below poverty depended on natural resource for livelihood • Proportion % of population involved in charcoal burning, sand harvesting, brick making, deforestation, overstocking, collection of wild products etc) • Proportion of population in subsistence agriculture • Proportion of population living in vulnerable environments(landslides areas, floods, Arid lands etc) • Number and type of programmes addressing each of the sectors or the vulnerabilities.		
		Gender & Environment	• Proportion by gender in natural resource activities • Number and type of gender mainstreaming strategies (polices, plans, programs) • Number of gender related issues in environmental sector		
		Sustainable development	• Number of sectors with SDG mainstreamed • Number of SDG indicators tracked (Goal 1-17)_ • Number of organizations with sustainability Policy • Number of organizations reporting on sustainability		

Indicator baseline assesment checklist table					
	Thematic sector	Sub theme	Annotated elements /Indicators	Presence (1) absence(0)	Indicator Units
19	Public Private Partnerships.		• No of PPP platforms by sector (e.g forest, water, agriculture etc) • % of Private organizations in PPP • No of environment projects supported by PPP arrangement • Number of TORs or MOUs developed for partnerships.		
20	Emerging Environmental and Transboundary issues (little known, inadequate scientific information, negative impact on livelihoods)		• Number and types - emerging environmental issues (invasive, oils & gas, resistance, human & wildlife conflicts etc • Number and types of efforts/ research in understanding the environmental issues • Extent of impact (area, intensity, damage etc) • Number of population affected (Population, farmers etc) • Type and Number of transboundary issues • Types and number of Cross border efforts in addressing transboundary elements (platforms, policy, legislation, committee etc) • Number of cross border platforms(committees) and visits .MOUs etc.		
21	Summary matrices	Implementation matrix	• Implementation plan matrix developed • Investment framework developed • Monitoring matrix developed • Implementation fact sheet development		

PARTICIPATING INSTITUTIONS

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Ministries and State Departments:

- Ministry of Environment and Natural Resources
- Ministry of Higher Education Science and Technology
- Ministry of Public Health
- Ministry of Lands and Settlement
- Ministry of Information and Communication
- State Department of Agriculture
- State Department of Fisheries
- State Department of Planning (Ministry of Devolution and Planning)
- State Department of Energy
- State Department of Tourism
- National Disaster Operation Centre

County Governments

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- Kenya Marine and Fisheries Research Institute
- Kenya Forestry Research Institute
- Kenya Agricultural Research Institute
- Kenya Forestry Service
- Kenya wildlife Services
- Water Resources Management Authority (WRMA)
- National Museums of Kenya
- Department of Resource Surveys and Remote Sensing
- Kenya National Bureau of Standards
- National Commissiom for Science Technology and Innovation (NACOSTI)
- National Council for Population and Development

Institutions of higher learning

- University of Nairobi
- Jomo Kenyatta University of Science and Technology

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