

EGE 2525 and EGS 2402: Environmental Impact Assessment & Environmental Audit

Introduction to EIA & EA

Course outline

- Introduction to EIA and EA: Concept of environment, sustainable development, environment management paradigms.
- Law, policy and institutional arrangements for EIA.
- Multilateral environmental agreements
- EIA process
- Environmental Auditing
- Strategic Environmental Assessment.
- Environmental economics.
- Environmental information systems for EIA; sources of EIA information; role of GIS and Remote Sensing.

Concept of environment

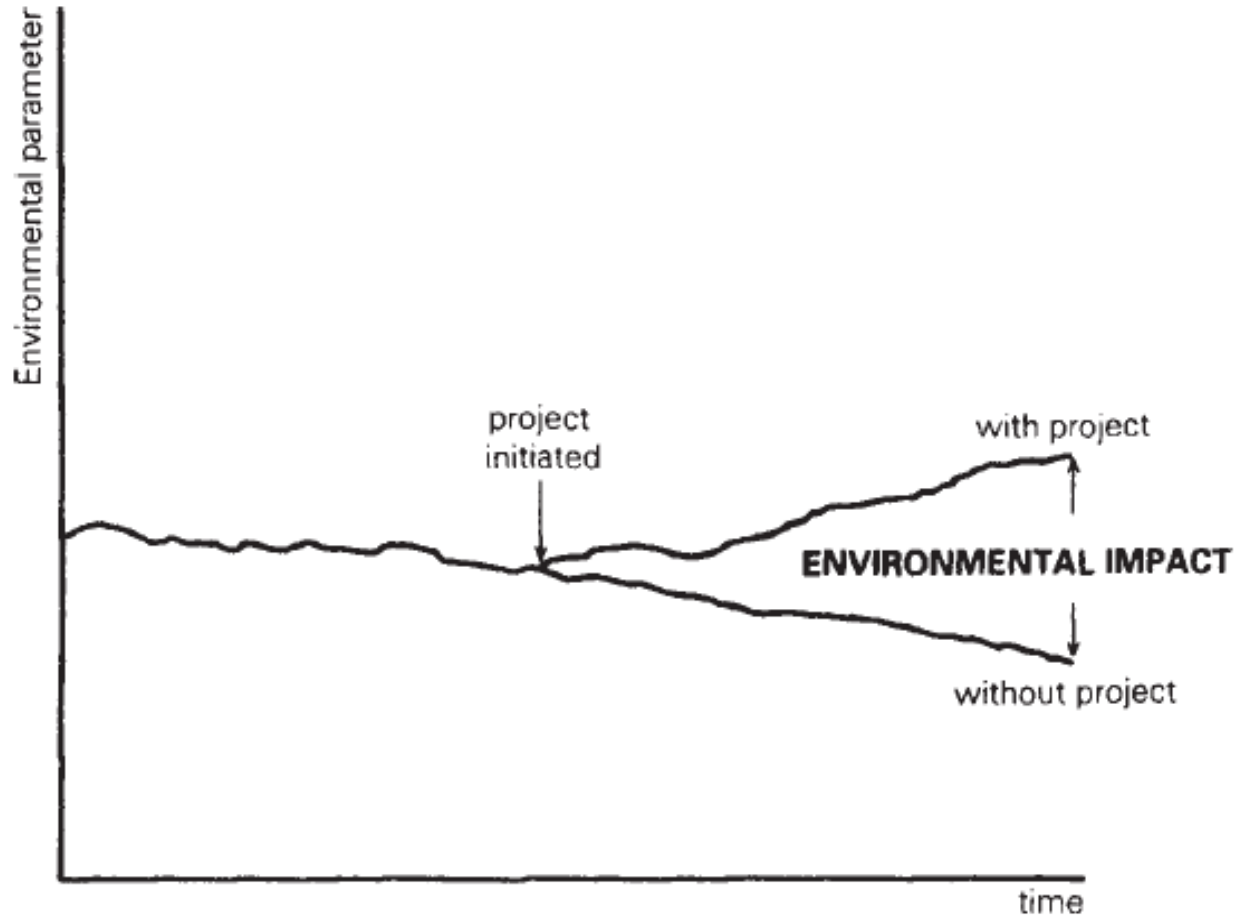
- Environment - “physical factors of the surroundings of human beings including land, water, atmosphere, climate, sound, odour, taste, the biological factors of animals and plants and the social factor of aesthetics and includes both the natural and the built environment”

Environmental Impact

- Impacts - the resultant changes in the environmental parameters in space and time compared with what would have happened had the project not been undertaken i.e. has both spatial and temporal components
- Impacts are site specific and determination of their spatial distribution is also important

Data Requirements

- Project
 - »Type
 - »Size
 - »Location
- Area of potential impact
 - »Physical resources
 - »Biological resources
 - »Economic development resources
 - »Quality of life
 - »Other existing and planned projects



A major deficiency of many EISs has been the failure to establish a time frame indicating when impacts are likely to be manifest.

Environmental Impact Assessment

- EIA definition - a systematic process to identify, predict and evaluate environmental effects of **proposed actions, projects**, plans, programs and policies, hence determine the **potential environmental impacts**, their significance and to **propose measures** to **mitigate** the negative ones while **enhancing the positive ones**
- EIA is one of the tools for environmental management under EMCA

EIA Definition cont'

- Environmental Impact Assessment consists of a set of procedures that ensure environmentally sound and sustainable development options, recognizing any environmental consequences early at the project design phase
- It ensures that the likely effects on the development are fully understood and fully taken into account before the development is allowed to continue.

- According to The International Association of Impact Assessment (IAIA), it the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made

The purpose of EIA is to

- Provide information for decision-making on the environmental consequences of proposed actions
- Promote environmentally sound and sustainable development through the identification of appropriate enhancement and mitigation measures

Principles of EIA

- every person is entitled to a clean and healthy environment and that every person has a duty to enhance, safeguard the environment
- Environmental concerns must be accounted for in all development activities
- Public participation in development of projects, policies, plans and programs are important
- Recognition of social and cultural principles used in the management of the environment & natural resources

Principles of EIA cont'

- International cooperation in the use and wise management of shared resources
- Intra and Intergenerational policy
- Polluter-pay principle
- Precautionary principle e.g. G.M.Os, insecticides

EIA Objectives

- overall objective of E.I.A. is to ensure that environmental concerns are integrated in all development activities in order to contribute to sustainable development.
- Can be divided into two:
 - Short term **immediate** - **inform the process of decision-making** by identifying the potentially significant environmental effects and risks of development proposals
 - **Long term** –**promote sustainable dev.** by ensuring that development proposals do not undermine critical resource and ecological functions or the well being, lifestyle and livelihood of the communities and peoples who depend on them

Specific objectives of EIA

- i) To identify potential impact of proposed projects, policies, plans and programmes
- ii) To assess the significance of these impacts
- iii) To assess the relative importance of the impacts of alternative plant/plans, designs and sites
- iv) To propose mitigation measures for the significant negative impacts of the project on the environment

Specific objectives cont'

- i) To generate baseline data for monitoring and evaluation of how well the mitigation measures are being implemented during the project cycle
- ii) To present information on the impact of alternatives
- iii) To present results of the E.I.A. in such a way that they can guide informed decision making

Why is EIA Needed?

- The natural environment is the foundation of the world economy and our social well-being
- Past development practices have severely degraded the natural environment and wasted scarce resources
- Increasing development pressures (e.g., industrialization, urbanization, and resource use) will inevitably accelerate environmental degradation unless sustainable environmental management practices are adopted

Benefits of EIA

- Using E.I.A., it is possible to arrive at the following:
 - Most environmentally suitable option
 - Best practicable environmental option
 - Alternative processes

Benefits of EIA

- Risks are minimized because mitigation measures are proposed
- It is a look before you leap
- Enables proper decision making
- To avoid future losses
- public / stakeholder participation
 - Public scrutiny
 - participation of potentially affected persons in the decision-making process

Cont' Benefits of EIA

- Helps to consider the environment
- A tool for development control
- It allows alternative processes / options to be looked at
- alert governments and international organizations of the likelihood of transboundary harm
- implementation of national policies on sustainable development and precautionary action.

Why do EIA?

- Promotes better planning and leads to more responsible decision making;
 - ensures that renewable and non-renewable resources are used wisely
- Evaluates the rationale behind proposed projects and activities; are there alternatives to a proposed project or activity?
- Assists in pursuing sustainable development by evaluating alternatives means of undertaking proposed projects and activities

Why do EIA? Cont

- Assessment outputs facilitate **informed decision making**; anticipated environmental impacts can be weighed against economic benefits and other social gains in deciding whether to approve or reject proposals
- Helps to identify and understand environmental impacts early in the project cycle; predicted impacts can be **mitigated** before they occur
- Provides opportunity for input from interested parties; increases likelihood of **public acceptance**

Sustainable Development

Sustainable dev. concept has gained increasing international acceptance following the need to achieve millennium development goals and the establishment of international agreements, declarations and commitments.

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Brundtland Commission)

Examples

The Rio Declaration on Environment and Development – a set of principles which provide guidance on achieving sustainable development.

Framework Convention on Climate Change – an international treaty to stabilise greenhouse gas concentrations in the atmosphere.

Convention on Biological Diversity – an international convention with three objectives: the conservation of biodiversity, the sustainable use of its components, and the equitable sharing of benefits from genetic resources.

Agenda 21 – a global programme of action for achieving sustainable development to which countries are ‘politically committed’ rather than legally obligated.

- E.g. [Principle 17 of Rio Declaration of Env. & dev](#) “Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority”

Activate Windows

Implication of sustainable development

- It implies the following key points:
 - Maintaining and improving a capita well being
 - Principles of intra and intergeneration equity
 - Need to strike a balance between environmental, economic and social issues
 - Aim to reduce poverty and protect the environment and stimulate economic growth
 - A continuous process of change based on the principles of governance

Means to enhance sustainable development

- Environmental impact assessment
- Social impact assessment
- Health impact assessment
- Strategic and environment assessment
- Integrated assessment
- Poverty and social impact assessment
- Sustainable assessment

Example Sustainability Criteria

- Maintenance of habitat and ecosystems
- Preservation of native plant and animal species
- Preservation of cultural values
- Reclamation and re-use of waste water
- Wastewater disposal within assimilative capacity
- Groundwater extraction within sustainable yield
- Productive use of fertile soils
- Prevention of erosion

Example Sustainability Criteria Cont

- Application of clean technology
- Waste recycling or use
- Material utilization allowing recycling or re-use
- Energy efficiency/Use of renewable energy sources
- Public acceptability/Involvement of the community
- Full cost recovery for goods or services
- Equitable cost-benefit distribution

Evolution of EIA

- The beginnings of EIAs are rooted in the environmental crisis that affected all industrialized economies in the 1950s/60s/70s. For example:
 - 1952 “Killer fog” kills 4,000 in London – air pollution from coal, led to clean air act 1956
 - 1963 Silent Spring documents the effects of DDT - *a series of harmful effects on the environment and wildlife resulting from the use of synthetic pesticides esp. DDT and other similar compounds. Pesticides killed bugs, affected food chain to threaten bird and fish populations and could eventually sicken children*
 - 1966 Cuyahoga River burns for the 3rd time in Cleveland, Ohio, USA - Oil spills and oil fire

Evolution of EIA Cont

- **Pre-1970s**: Introduction of some pollution control regulations
- **Early 1970s**: Initial EIA development, focus on the biophysical environment (e.g., air, water, flora, fauna, climate)
- **1970**: US NEPA (National Env. Policy Act) called for:
 - Environmental review of all government actions
 - Public input into project formulation
 - Informed decision making
 - This process became known as EIA

Evolution of EIA Cont

- 1970s to 1980s: Expanded scope for EIA beyond just biophysical to include integrated assessment of social, health, and economic issues
- Mid to late 1980s: Cumulative effects increasingly examined in support of policy and planning
- Mid 1990s: Towards sustainability (e.g., strategic environmental assessment, biodiversity)

- Over the last 30 years the EIA process has become increasingly more wholistic; assessments have broadened to consider all aspects of proposed projects and activities
- Assessments routinely examine:
 - Biophysical
 - Social
 - Health
 - Economic
 - Risk and uncertainty

Types of EIA

- **Project-level EIA**: narrow-perspective; examine potential environmental impacts of a single project or activity
- **Cumulative effects assessment (CEA)**: broadens assessment to examine potential impacts of multiple projects from the viewpoint of valued environmental components (VECs)
- **Strategic environmental assessment (SEA)**: widest focus involving systematic evaluation of potential impacts of policies, plans and programs (PPP) EIA Procedures and Decision Making

EIA Core Values

- **Sustainability**: The EIA process will provide necessary environmental safeguards
- **Integrity**: The EIA process will conform with established standards; underlying science is credible and decisions are justified
- **Utility**: The EIA process will provide balanced, accurate information for decision making EIA Procedures and Decision Making

EIA Guiding Principles

- **Participation**: Appropriate and timely access by all interested parties
- **Transparency**: All decisions should be open and accessible
- **Certainty**: Process and timing agreed in advance and followed by all
- **Accountability**: Decision makers and project proponents are responsible for their actions

EIA Guiding Principles Cont

- **Credibility**: Assessments are professional and objective
- **Cost-effectiveness**: Environmental protection is achieved at the least cost
- **Flexibility**: Process is adaptive and responsive
- **Practicality**: Information and outputs are usable in decision making and planning

EIA Operational Principles

EIA should be applied to:

- all development projects and activities likely to cause significant adverse impacts or potential cumulative effects

EIA should be undertaken:

- throughout the project cycle, beginning as early as possible
- in accordance with established procedures
- to provide meaningful public consultation

EIA Operational Principles Cont

EIA should provide the basis for:

- environmentally-sound decision making in which terms and conditions are clearly specified and enforced
- the development of projects and activities that meet environmental standards and management objectives
- an appropriate follow-up process with requirements for monitoring, management, audits, and evaluation

EIA Operational Principles Cont

EIA should address:

- all related and relevant factors, including social and health risks and impacts
- cumulative and long-term, large-scale effects
- design, siting and technological alternatives
- sustainability considerations including resource productivity, assimilative capacity and biological diversity

EIA Operational Principles Cont

EIA should result in:

- accurate information on the nature, likely magnitude and significance of potential effects, risks and consequences of proposals and alternatives
- a relevant report for decision making; including qualifications on conclusions reached and prediction of confidence limits
- ongoing problem solving and conflict resolution throughout the process

Integration of EIA into the Decision-Making Process requires that;

- **Timing**: EIA conducted early in the project cycle
- **Disclosure**: EIA results disclosed to all interested parties
- **Weight**: EIA results are considered by decision makers
- **Revisions**: Plans revised to include feasible mitigation measures or a less damaging alternative

Integration of EIA into the Decision-Making Process (Cont'd)

- **Mitigation:** Agreed-upon mitigation measures are implemented and monitored for effectiveness
- **Monitoring:** Post-project, follow-up monitoring of impacts conducted and results acted upon

Characteristics of Effective EIAs

Completeness:

- all significant impacts considered
- all relevant alternatives examined

Accuracy:

- appropriate *forecasting* and *evaluation* procedures

Clarity:

- all interested parties can comprehend issues

Getting it wrong

Examples of badly executed EIA include:

- Terms of reference are poorly drafted; potentially serious issues are not assessed and adverse environmental impacts occur
- Delays in project approval and cost increases occur when EIA is commenced too late in the project cycle (i.e., must back-track to retrofit equipment or re-design project)
- EIA report is incomplete or not scientifically-defensible resulting either in project rejection or extended delays to address deficiencies

Externalities of EIA

- Positive Externalities:

1. New jobs generated, economic growth stimulated.
2. Growth of local business enterprises supported.
3. Development of supporting and complementary industries.
4. Influx of capital and disposable income.

Externalities of EIA cont'

Negative Externalities:

- Social impacts:
 1. Impacts on health of local population.
 2. Increase in crime and deviant behaviour.
 3. Additional pressure on the existing physical infrastructure (sewage, water supply etc.).
 4. Decline in community cohesion.
 5. Changed cultural values.

Externalities of EIA cont'

- Environmental impacts:
 1. Depletion of natural resources.
 2. Destruction of habitats.
 3. Change in ph., oxygen level, toxicity of water.
 4. Increase in toxicity of air.
 5. Global warming.
 6. Ozone depletion.

Legal and administrative framework for EIA/EA in Kenya

Policy, Sectoral Laws, EMCA

- Policy, Sectoral Laws and EMCA Sectoral laws in Kenya did not provide for institutional and legal framework for environmental management prior to 2010 Constitution
- Relevant provisions provided for offences and very lenient penalties in case of environmental degradation
- National Environment Secretariate (NES) established 1972 to coordinate national efforts in environmental matters; it was a coordinating and not an enforcement agency
 - This was after participating in the 1st United Nations Conference on Human Env. in Stockholm (June 1972)
- It liaised with international environmental institutions to review existing environmental legislation and suggest necessary changes to give force of law to sectoral standards and procedures

- There was need to enact necessary legislation to provide for an appropriate legal and institutional framework for the management of the environment
- EMCA enacted in 1999 and commenced operation in January 2000 but institutions put in place from 2002 and 2003

Constitution of Kenya, 2010

- Recognizing the importance of natural resources and the environment in general, the Kenyan Government has put in place wide range of policy, institutional and legislative framework to address the major causes of environmental degradation and negative impacts on ecosystems emanating from industrial and economic development programmes.
- The steps included in EIA are contained in the Environmental of the EMCA Act No. 8 of 1999 at Sections 58 and 138 and the Environmental (Impact Assessment and Audit) Regulations 2003 (Legal No. 101 of 2003).
- All undertakings enumerated in the 2nd Schedule of EMCA require an EIA project/study report prepared and submitted to NEMA for review and eventual licensing before the development commences

EMCA

- Environmental Management and Coordination Act, assented to in 1999 and commenced in 2000.
- **An ACT of Parliament to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for the matters connected therewith and incidental thereto.**

Section 58 of EMCA requires an ENVIRONMENTAL IMPACT ASSESSMENT LICENSE

- Revisions in 2012, 2015, 2019

Tools provided for Environmental protection under EMCA

- EIA Environmental Impact Assessment;
- Environmental Audit and Monitoring;
- SEA Strategic Environmental Assessment;
- Environmental restoration, conservation and easement orders;
- environmental inspections, analysis and records; and
- Environmental quality standards

Institutions under EMCA

- NEMA
- NATIONAL ENVIRONMENT COUNCIL (NEC)
- ENVIRONMENT COMMITTEES
- PUBLIC COMPLAINTS COMMITTEE
- NEC - National Environmental Complaints Committee
- National Environment Trust Fund (NETFUND)
- Statutory Committee
- Lead Agencies

National Environmental Management Authority (NEMA)

- NEMA's role is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment
- Objectives are Coordinate various environmental management activities undertaken by lead agencies
- Promote integration of environmental considerations into development policies, plans, programs and projects for sound environmental management

- Take stock of natural resources, their utilization and conservation in Kenya
- Establish and review land use guidelines in consultation with relevant lead agencies
- Examine land use patterns
- Carry out surveys to assist in the proper management and conservation of the environment, among others

NEMA Management Board

- NEMA is managed by a Board consisting of :
 - Chair appointed by President,
 - PS responsible for matters relating to the Authority,
 - DG appointed by the President,
 - 3 directors who are officers of the Authority,
 - seven members who are not public servants appointed by the minister in consultation with the council and
 - secretary to the Board appointed by the Authority
- Term is renewable period of four years for all
- the members and Board shall hold at least four meetings annually

NEMA Board Qualifications

- Qualifications of all the members except the PS and secretary to the Board is
 - postgraduate degree in environmental law, environmental science, natural resources or social science
- DG must have:
 - at least postgraduate degree in Environmental law, environmental science, natural resource management or relevant social science; and
 - at least fifteen years working experience in relevant field

- The DG is the CEO of NEMA responsible for the day to day management of the Authority's affairs
- He is assisted by several directors who are responsible for various components
- Under the directors are deputy directors who have various responsibilities

National Environment Council (NEC)

- NEC is responsible for policy formulation for the purposes of the Act.
 - Also sets national goals and objectives, and determines policies and priorities for the protection of the environment.
 - Also responsible for promotion of cooperation among public departments, local authorities, private sector and NGOs

Members of National Env. Council

- Minister is Chair with members being PSs for agriculture, planning, education, energy, environment, finance, fisheries, foreign affairs, health, industry, works, research, technology, tourism and water resources
- Others are 2 representatives each from public universities and specialized research institutions and NGOs appointed by the Minister
- 3 representatives from business community with one from oil marketing companies appointed by the minister, Director General of NEMA, and others co-opted by the Minister
- Tenure is renewable term of 3 years with meetings held at least four times a year

Public Complaints Committee (PCC)

- An independent body responsible for investigating allegations or complaints against any person or Authority in relation to the condition of the environment
 - i.e. provides the administrative mechanism for addressing environmental harm.
- On its own motion to investigate any suspected cases of environmental degradation
- Perform any other functions that may be assigned by the NEC

At National level -> National Environmental Complaints Committee (NEC)

- Comprises of Chair who is a person qualified to be a high court judge and appointed by the Minister
- Others are the:
 - AGs rep,
 - LSK rep,
 - NGO rep (secretary),
 - business community rep appointed by Minister
 - two members appointed by Minister for their active role in environmental management

National Environment Tribunal

- Main function is to hear and determine appeals arising from matters of issue, revocation and conditions of licenses and the amount of money to paid under the act
- Purpose is to ensure persons aggrieved by the administrative acts of NEMA have a forum to challenge those decisions

- Tribunal composed of chair nominated by the Judicial Service Commission from a person qualified to be a High Court judge
- Others include:
 - an advocate nominated by the LSK,
 - a lawyer qualified in environmental law and
 - two persons with exemplary competence in environmental management

- Powers of NET include:
 - Summoning any witnesses or call for production of documents
 - Take evidence on oath and administer oaths
 - Confirm, set aside or vary the decision of the authority
 - Exercise any powers which the Authority would have exercised
 - Make any orders for securing attendance of any witness
 - Make any order for costs
- Penalty for any specified offences is KShs 350 000

Previously: Provincial and District Environment Committees

Appointed by the Minister by gazette notice in every province and district

- Chair is PC and secretary is PDE for PEC, whilst DC is chair and DEO is secretary for DEC
- Other members as specified in the Act

Currently: **County ENVIRONMENT COMMITTEES:**
Contribute to de-centralisation of environmental management and enable participation of local communities.

- Functions include:
 - responsibility for proper management of the environment within the Province and District, perform any such additional functions as are prescribed in the Act
 - or as may be assigned by the Minister by notice of the official gazette

Environmental Planning Committees

- a. National Environment Action Plan committee
- b. Environmental Planning at Provincial and District level (DEC& PEC)

National Environment Trust Fund (NETFUND) is a state corporation under the Ministry of Environment and Natural resources

National Environment Trust (NET; e.g. under UNDP)

Cont': Institutions under EMCA

- Lead Agencies - any Government ministry, department, parastatal, state corporation or LA, in which any law vests functions of control or management of any element of the environment or natural resources
- Statutory Committee

EIA Regulations

- Regulation 4 (3) states that “No licensing authority under any law in force in Kenya shall issue a trading, commercial or development permit or license for any micro project activity **likely to have cumulative significant negative environmental impact before** it ensures that a strategic environmental plan encompassing **mitigation measures and approved by the Authority** is in place”.

Noise regulations, 2009

- Noise and excessive vibration pollution control regulation (2009)
 - These Regulations prohibit a production of any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment.

Wetland regulations, 2009

- Specific sections have requirements that apply to wetlands in Kenya either in private or public land
 - The regulations empower the County Environment Committee to **co-ordinate**, **monitor** and **advise** on all aspects of wetland resource management within the county.

Water quality regulations, 2006

This includes the following:

- Protection of sources of water for domestic use;
- Water for industrial use and effluent discharge;
- Water for agricultural use.

These Regulations outline:

- Quality standards for sources of domestic water;
- Quality monitoring for sources of domestic water;
- Standards for effluent discharge into the environment;
- Monitoring guide for discharge into the environment;
- Standards for effluent discharge into public sewers.

Waste Management Regulations, 2006, 2016

These Regulations apply to all categories of waste i.e.

- Industrial wastes;
- Hazardous and toxic wastes;
- Pesticides and toxic substances;
- Biomedical wastes;
- Radio-active substances.

These regulations outline requirements for handling, storing, transporting, and treatment/ disposal of all waste categories. Disposal of waste by NEMA licensed company.

Controlled Substances Regulations, 2007

These are basically ozone depleting gases. One needs a license to:

- Produce Controlled Substances.
- Import Controlled Substances.
- Transport Controlled Substances through Kenya.
- Export Controlled Substances.

The EMCA (Conservation of Biological Diversity Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006

Environmental Impact Assessment Licence to:

- Engage in activities with an adverse impact on any ecosystem; lead to the introduction of any exotic species; lead to unsustainable use of natural resources,

Any person who intends to access genetic resources in Kenya needs an Access permit for genetic resources in Kenya with a certificate from National Council for Science and Technology

Others include

- Fossil fuel emission control regulations (2006)
- Management of wetlands and wetlands resource regulation (2009)
- Wildlife conservation and management act, 2013
- Environmental impact assessment and audit regulations (2003,) - amendments
- Draft environmental management and coordination (air quality) regulation (2008)

Right of access to information –Article 35 of the Constitution of Kenya

- The Act provides that subject to the Act and any other written law, every citizen has the right of access to information held by: (a) the State; and (b) another person and where that information is required for the exercise or protection of any right or fundamental freedom
- The term ‘information’ is interpreted to include information which is of significant public interest due to its relation to the protection of human rights, the environment or public health and safety

Principle 10 of the Rio Declaration

- Principle 10 of the Rio Declaration states that environmental issues are best handled with participation of all concerned citizens, at the relevant level.
- At the national level, it states that each individual should have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.
- ∴ States are to facilitate and encourage public awareness and participation by making information widely available. It also provides that effective access to judicial and administrative proceedings, including redress and remedy, should be provided.

International Conventions and Treaties

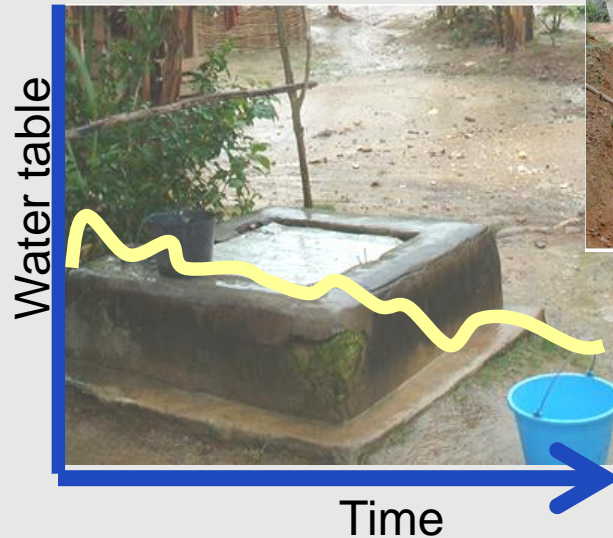
- Conventions are legally binding bilateral, regional or international agreements that binding to the states that are parties thereto.
- Kenya has ratified some of the most important conventions on the environment and is bound by the same. Examples:
 - The Ramsar Convention on Wetlands of International Importance (i.e. Advocate for wise use of the wetlands in a project area)
 - Convention on Biological Diversity (CBD; i.e. advocate for conservation of various species of plants, animals and the variety of ecosystems in the project area.)
 - The Rio Declaration and Agenda 21 (i.e. Principle 4 of the Rio Declaration provides that in order to achieve sustainable development environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it)

Example of Legislative framework for Kenya Sugar Project

- legislation and policy that are relevant to the proposed project.
- Land Tenure and Land Use Legislation
- The Government Lands Act, Chapter 280 of the Laws of Kenya
- The Tana and Athi River Development Authority Act Chapter 443 of the Laws of Kenya
- The Forest Act (Act Number 7 of 2005)
- The Agriculture Act (Cap 318)
- The Sugar Act 2001
- Public Health Act (Cap. 242)

KEY ENVIRONMENTAL IMPACT ASSESSMENT CONCEPTS

- Defining “impact”
- Characterizing the baseline situation
- Defining “activity”



WHAT ARE IMPACTS?

The **impact** of an activity is the **change from the baseline situation** caused by the activity.

The baseline situation is the existing environmental situation or condition in the absence of the activity.

The baseline situation is a key concept in environmental impact assessment.



To measure an impact, you must know what the baseline situation is.

BASELINE SITUATION



- The baseline situation is not just a snapshot in time.
- This chart of groundwater levels shows both variability and a trend over time.
- BOTH are part of the groundwater baseline situation.

ACTIVITY

The impact assessment process examines the impacts of activities.

Under Regulation 216 an activity is:

A desired accomplishment or output. For example, a road, seedling production, or river diversion to irrigate land.

A project or program usually consists of many activities. Accomplishing an activity requires a set of sub-activities or tasks.

ACTIVITY:	SUB-ACTIVITIES OR TASKS:
Market access road rehabilitation	Survey, grading, culvert construction, compaction, etc..

Concluding Thoughts

Important points to remember are:

- EIA is a structured process to anticipate, analyse and disclose environmental consequences associated with proposed projects or activities
- EIA seeks to ensure that potential problems are foreseen and addressed such that project benefits can be achieved without causing serious environmental degradation
- Done correctly, EIA can be a powerful environmental management tool