

The Republic of Sudan

National Environmental Indicators and SoE Report

Mr. Abdelrahman Alkhalifa – NCE

Ms. Shahinaz Fadlemula - CBS

Country Information:

- **Total area:** 1.882.000 km²
- **Geographic location:** located between the longitudes (38.24- 21.4) minutes, and latitude (8.45- 23.8) ranking (16) worldwide, down to second place Africa after Algeria and the third among Arab countries
- **Population:** 33.419.625 million
- **Climate:** temperatures in Sudan is vary between 26° C and 36° C. The hottest areas, where temperatures regularly exceed 40° C, are found in the northern part of the country
- **Economic:** the gross domestic product after separation is equal to (154.494) billions of pounds , equivalent to (66.6) billion dollars, the ratio of agriculture it (31.6%) and industries in non-oil (26%) and services (42.1%).
- **Ecological Zones:** Arid and semi-arid ecosystems constitute most of Sudan. Desert and semi-desert areas dominate the northern part of the country. In the east and west and along the border with South Sudan low rainfall savannah vegetation is prevalent

Location



Topography



Environmental Problems of the Sudan:

No:	Problems	Status
1	Climate Change and Desertification	Effected food security and water, rise temperature, Shortage Loss of fertile land and productivity. Loss of vegetation cover,.
2	Bad Management of Water Resources	Silt accumulation at tanks, irrigation canals. Loss of water and increase in water related diseases.
3	Diminishing of vegetation cover (tree)	Loss of forest areas
4	Degradation of Natural Pastures	Overgrazing and loss of grazing land.
5	Degradation of Wildlife	Degradation of wildlife habitat, loss of wildlife and animal resources.
6	Red Sea Pollution	Pollution at coastal areas of red sea, loss of marine habitat and resources.
7	Increase in use of pesticides	Agricultural habitat pollution, storage and disposal hazards, health and hygiene risk
8	Urban habitat degradation	Increase of immigrants and competition on resources and degradation of services.
9	Legislative and constitutional weakness	Institutional breakdown in application and enforcement of regulations and acts.
10	Environmental awareness	At local level as well as governmental and decision making level. Affecting participation and local involvement in rehabilitation programs

Institutions Mission

National Council For Environment

- Developments of policies, plan and programs and propose legislation.
- Rationalization of land use, to halt environmental degradation, drought and desertification control.
- Coordination between national and state authorities in the areas of environment and forests .
- Development of policies, plans, programs and legislation to preserve the health and purity of the environment .
- Promotion of international and regional cooperation in the fields of natural resources.

Center Bureau of Statistic

- Production and Dissemination Social Statistic
- Production and Dissemination Economic Statistic
- Production and Dissemination other Statistical
- Production and Dissemination Technical Statistic

Environmental Information Monitoring System (EIMS)

Environmental Information Monitoring System

General Objective:

- Provide accrued information on Sudan State of Environment to support Decision Makers

Specific Objectives:

1. Monitoring and Assessment Environmental Situation in Sudan
2. Determine Project priorities or Suitable Intervention add to enforce Laws
3. Provide Indicators on sustainable Social, Economic and Environment to integrate into national plan and strategies
4. Projection for future Environment status, Natural Resource and possible scenarios.
5. Provide Information and Data for Planning and Research process.

EIMS Components:

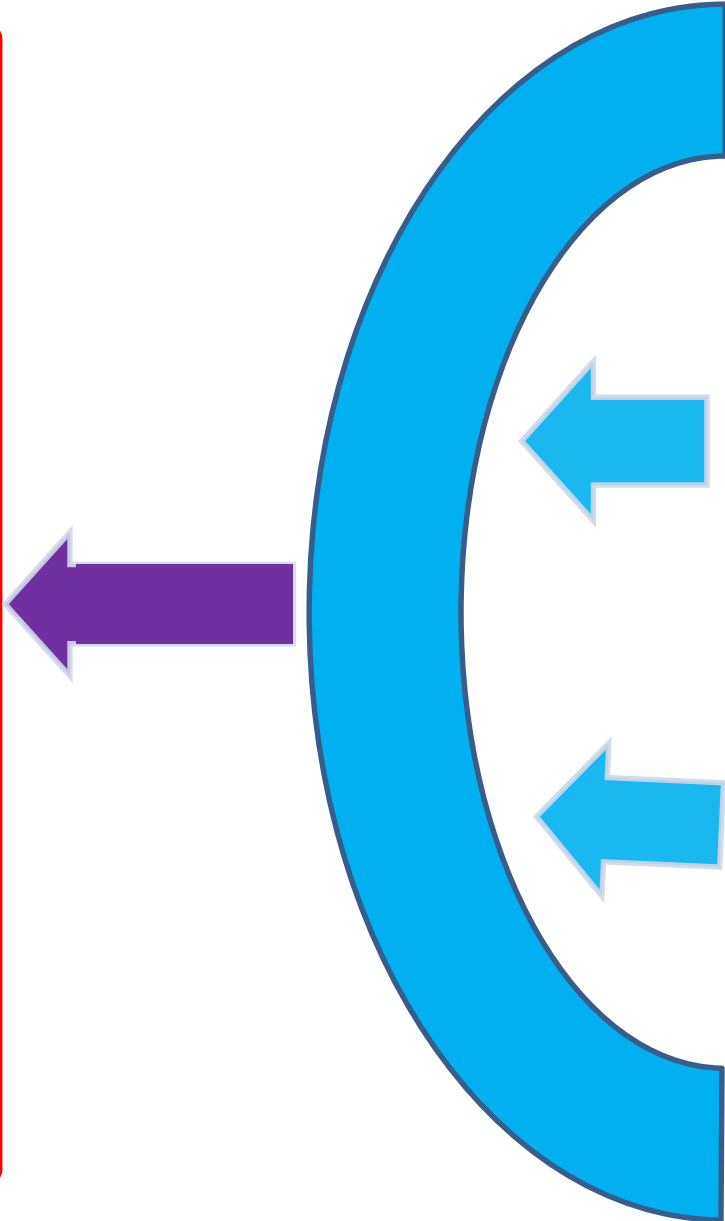
State of Environment and Outlook Report

Environmental Information Network

Rehabilitation of Environmental Information Center

Capacity building on Environmental Indicators

Periodic Surveys



Environmental Indicators

Environmental Indicators (EI):

- Start in 2010 with Ministry of cabinet
- In 2012 prepare report to Arab league

El List:

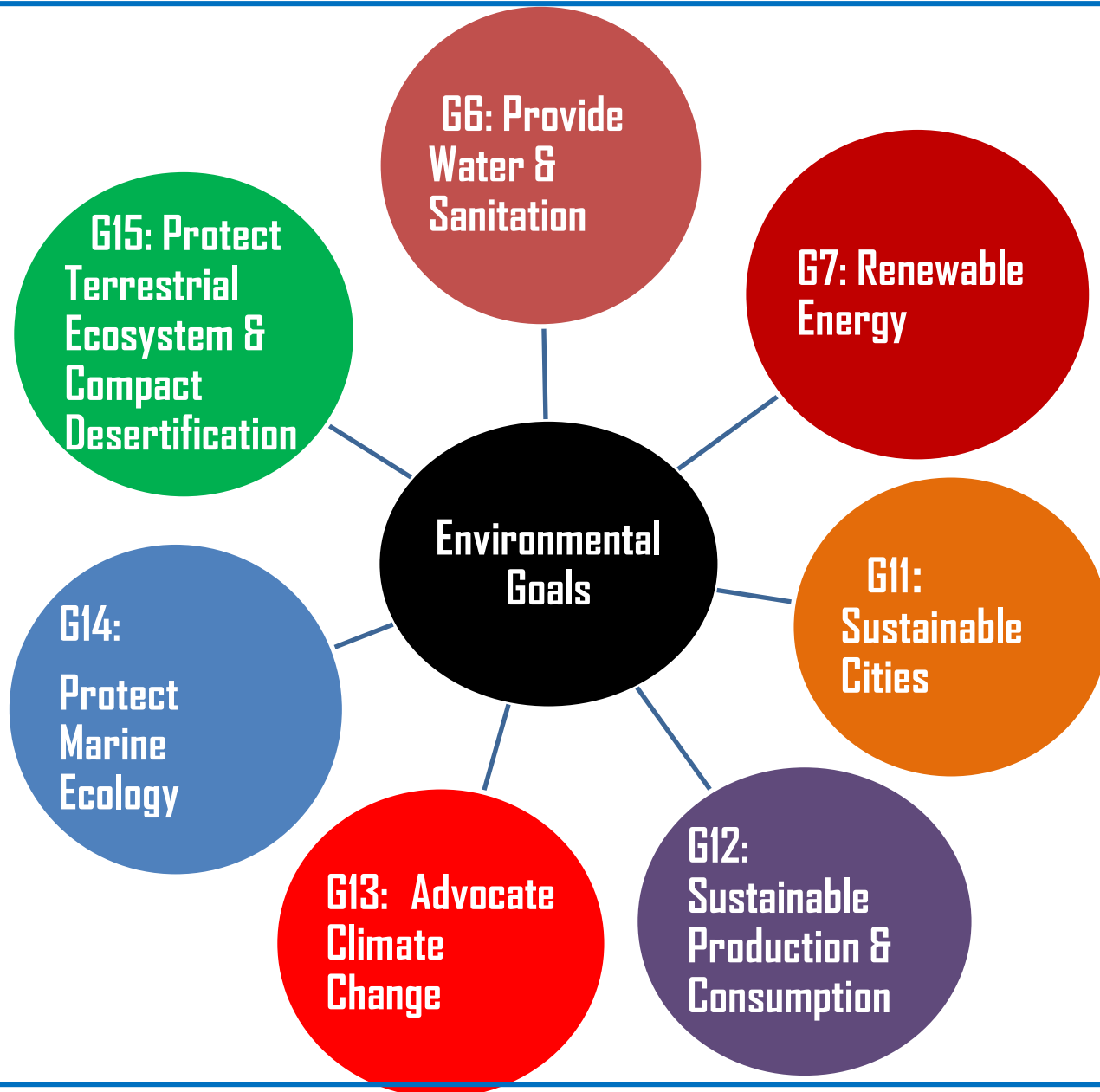
- First List Prepared in 2010 based on UNEP + Davos Indicators

- Addition Indicator to list in 2015 from UNSD

- In 2016 SDGs Indicators added to the list (Environmental Goals)

Articles	Main Indicators
Ecosystems	Air, Water, Soil, Biodiversity, Coastal Zone
Services	Health, Education, Energy, Transport, Security, Human Settlement
Institutions Capacity	EMS, Disaster Management, NGOs, Private Sector
International Corporation	Agreements and international Corporation

SDGs – Environmental Goals:



Progress:



Workshop Output:

- ✓ Distribution Indicators upon relevant Agency
- ✓ Added Indicators from national Agencies
- ✓ Insure measurement of Indicators
- ✓ Establish focal point for each agency
- ✓ Agreed on template to Collection Indicators

El Structure:

Team Members:

1- NCE

2- CBS

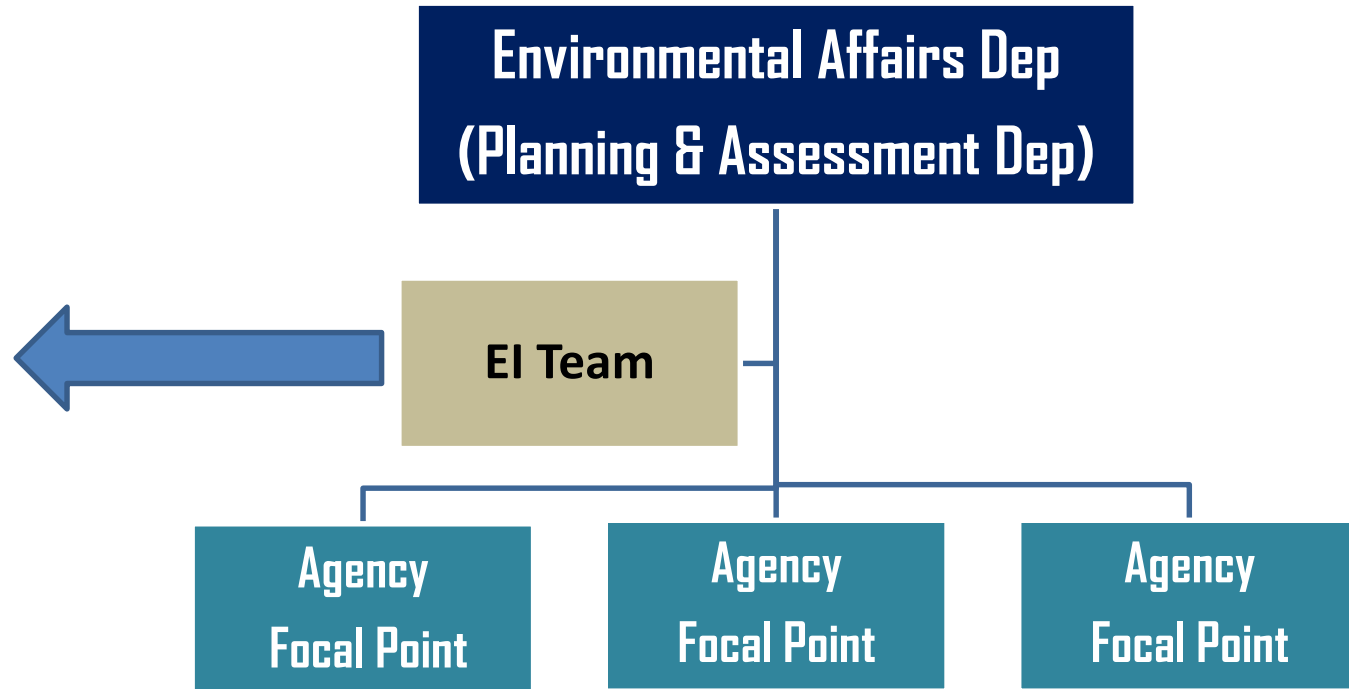
3- NCPD

4- NCBS

5- GMA

6- NFC

7- HCENR



El Template:

ملحوظات	القيمة الفعلية للمؤشر	الهدف المحدد طبقاً للتشريعات	مصادر المعلومات	معدل تحديث المؤشر	وحدة القياس	وصف المؤشر	المؤشر~
تشمل التعليقات علي النتائج مقارنة بالحدود المستهدفة و السنوات السابقة.	القيم الحقيقية للمؤشر عن فترة محل القياس.	- الحدود المسموح بها طبقاً للقانون الوطني - الحدود او المعايير المتفق عليها عالمياً.	تحديد مصدر المعلومات اما ان : المؤشر تم حسابه بواسطة وزارة البيئة او تم حسابه باستخدام بيانات تم الحصول عليها من مصدر آخر او المؤشر تم الحصول عليه من مصدر اخر	الفترة الزمنية التي يتم خلالها تحديث المؤشر	وهي الوحدة التي يتم بها قياس المؤشر (عدد ، كم، كجم، طن،..الخ)	تعريف المؤشر تعريفا وصفيا اضافة الي المعادلات التفصيلية المستخدمة لقياس حسابه الي جانب توضيح المتغيرات المختلفة.	مسمي المؤشر يتم تحديده بطريقة متخصصة

Outputs



وزارة البيئة والموارد الطبيعية والتنمية العمرانية
الإدارة العامة لشئون البيئة
إدارة التقييم البيئي



تقرير المؤشرات البيئية الوطنية الأولى

إعداد:

فريق الوزارة المعني بالمؤشرات البيئية

✓ we get 85% out of 121 Indicators.

✓ **We find Gaps in 3 area:**

• Air quality

• Waste

• Land Degradation

✓ Main Challenge

1. Human & Institutional Capacity Building

2. Fill the Gaps

CBS achievements:

- In 2017 Establish Department responsible to SDGs Indicators in CBS
- The Environmental Dimension have priority
- CBS implement Gap assessment for Environmental indicators related to SDGs
- CBS collect data related to tier one
- Prepare SDGs indicators Matrix
- Inter indicators for **Goal 6 and 11** into Questionnaires for MICS 2019

حزمة مؤشرات البيئة والتنمية المستدامة									
الاهداف	الغايات	اسم المؤشر	فئة الموافقة	وحد مصر ولوكالة المنهج	2016	2015	مسح 2014	2013	
الهدف 1	الغاية 1.1	المؤشر 1.1	1	نسبة الـ Wrold			36.1		
	الغاية 2.1	المؤشر 1.2.1	1	نسبة الـ Wrold					
		المؤشر 3.2.1	2	نسبة الـ Nation					
	الغاية 3.1	تتضمن بين كل	2	نسبة الـ ILO					متوفر جز غير متوفر
	الغاية 4.1	المؤشر 4.1	3	نسبة الـ UN-H					7 5 2 وطنى
		المؤشر 3.4.1	2	نسبة الـ Wrold					4 7 3 عالمي
	الغاية 5.1	المؤشر 5.1	2	عدد الـ UNISD		244	231	199	Repeat of 11.5.1 and 13.1.1
		المؤشر 2.5.1	2	نسبة الـ UNISD	9E+07	2E+07	#####	#####	Repeat of 11.b.1 and 13.1.2
		المؤشر 3.5.1	1	عدد الـ UNISDR					Repeat of 11.b.2 and 13.1.3
		المؤشر 4.2	2	عدد الـ UNISDR					
	الغاية 1.1	المؤشر 3.1.1	3	نسبة الـ UNSC					
	المؤشر 1.2.1	2	نسبة الـ UNESCO						
	المؤشر 3.3.1	3	عدد الـ UNESCO						
	الغاية 1.1 و b.1	المؤشر 3.1.1	3	مليون الـ UNESCO					93
									66
									68
									5
									232
الهدف 2	الغاية 1.2	المؤشر 1.1.2	1	نسبة الـ FAO			33.0		
		المؤشر 1.1.2	2	نسبة الـ FAO					
	الغاية 2.2	المؤشر 1.2.2	1	نسبة الـ UNICE					Formerly 2.b.2; Removed original 2.b
		المؤشر 1.2.2	1	نسبة الـ UNICE					
	الغاية 3.2	المؤشر 3.3.2	3	الـ FAO					متوفر جز غير متوفر
		المؤشر 3.3.2	3	نسبة الـ FAO					9 0 5 وطنى
	الغاية 4.2	المؤشر 3.4.2	3	نسبة الـ FAO					3 3 8 عالمي
	الغاية 5.2	المؤشر 3.5.2	1	عدد الـ FAO					
		المؤشر 3.5.2	1	نسبة الـ FAO					
	الغاية 2.a	المؤشر 3.1.2	2	عدد الـ FAO					
	المؤشر 1.2.2	1	عدد الـ OECD						
الغاية 2.b	المؤشر 3.1.2	1	نسبة الـ WTO					Formerly 2.b.2; Removed original 2.b.1	
الغاية 2.b	المؤشر 3.2.2	1	نسبة الـ FAO						
الغاية 1.c	المؤشر 3.1.2	2	نسبة الـ FAO						
الهدف 3	الغاية 1.3	المؤشر 1.1.3	1	نسبة الـ UNICE					
	الغاية 1.3	المؤشر 1.1.3	1	نسبة الـ UNICE					
	الغاية 2.3	المؤشر 1.2.3	1	لكل الـ UNICE					IAEG-SDG 6th meeting
	الغاية 2.3	المؤشر 1.2.3	1	لكل الـ UNICE					
	الغاية 3.3	المؤشر 1.3.3	2	لكل الـ UNICE					
	الغاية 3.3	المؤشر 1.3.3	1	لكل الـ UNICE					

Sudan SoE Report

Background

- Sudan has never produced a State of the Environment report. - Published:
 - 1- Sudan Post Conflict Environmental Report 2007
 - 2- Sudan Environment Outlook (SEO) 2010
- The need for SoE was conceived within the realization plan of ADAPT Project (Funded by DIFD and implement through UN Environment) and specifically within the outputs of Outcome 2.
- ✓ **The Initiation of the first SoE report is concomitant with and is supported by the efforts exerted by the Ministry of Environment, Natural Resources and Physical Development (Now NCE) to establish the Environment Information Monitoring System (EIMS).**

Assessment scope

- The SoE hinges on two pillars:
 - The state and trend of Sudan environment
 - The future outlook of Sudan environment.
- For both time dimensions have been delineated.
- The assessment process commenced with the year 2011 (the current Sudan).
- The process includes assessment of the baseline situation and the trend up the year 2018.

The second part of the report, the outlook, extends to the year 2030 coinciding with the **finalization of the SDGs**.

Report Theme

Environment for Peace and **Sustainable Development**

Report Framework

The report will be produced using Integrated Environmental Assessment and Reporting (IEAR)

-Approach analysis based on **(DPSIR)** Model:

Drivers

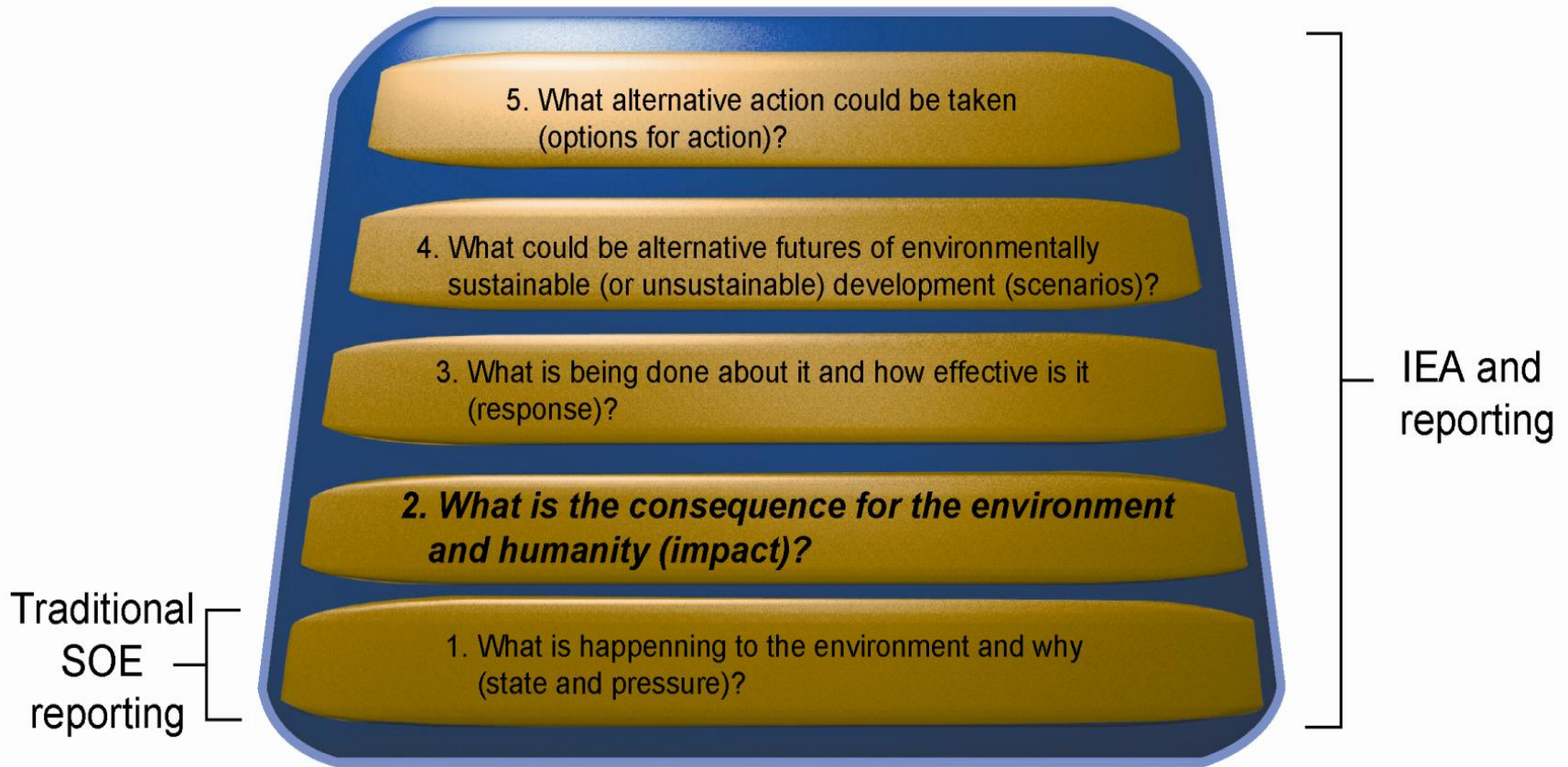
Pressure

State

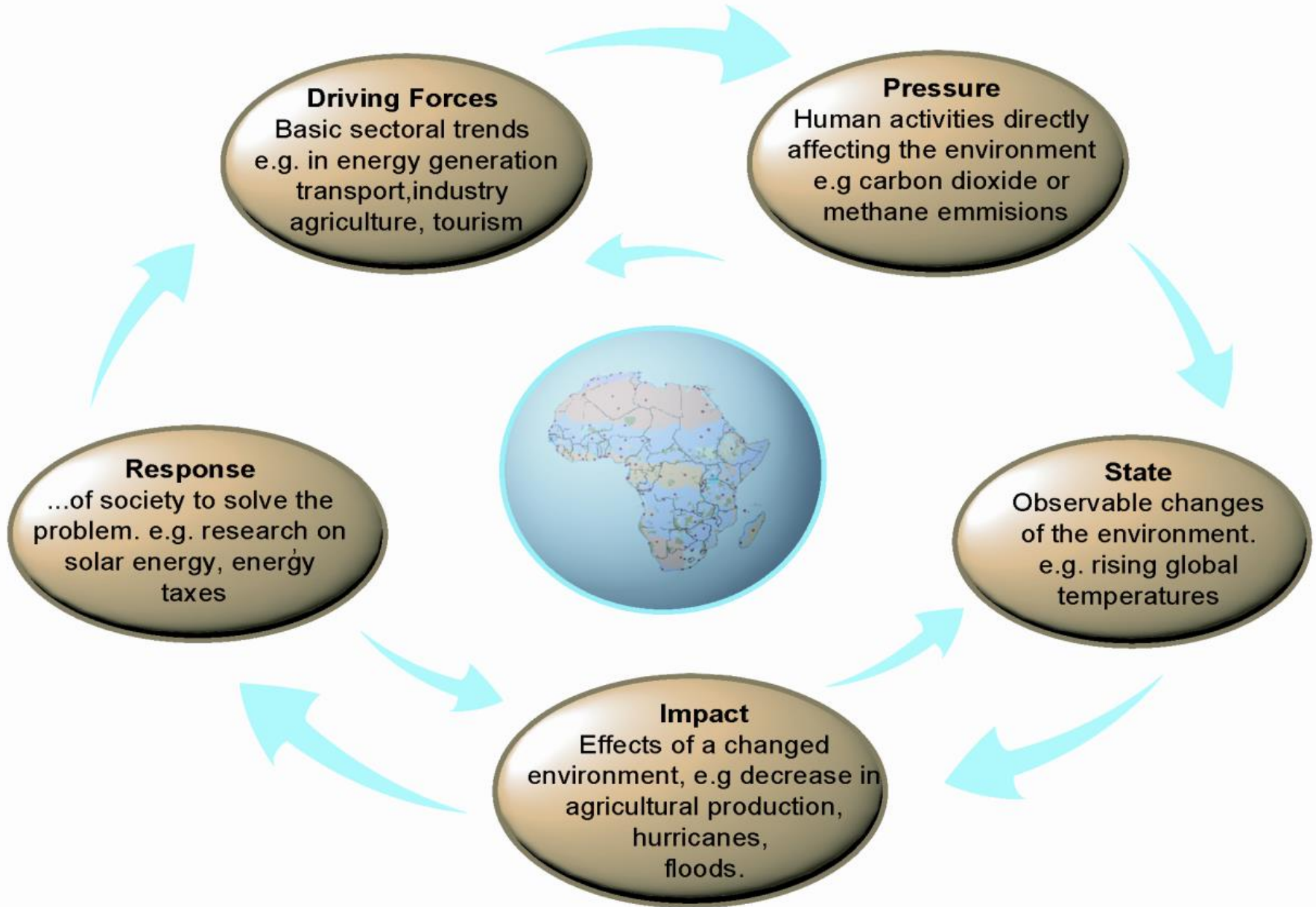
Impact

Response

Integrated Environmental Assessment



DPSIR Model



Report Structure:

Part one: Environment – Human Society- Economy Nexus

Chapter 1: Socio-economic status and the Environment

Chapter 2: Governance

Part two: State and Trend of the Environment

Chapter 3: Atmosphere

Chapter 4: Land

Chapter 5: Water

Chapter 6: Biodiversity

Part three: Persistent and Emergent issues

Chapter 7: Persistent issues

Chapter 8: Emerging issues

Part Four: Environmental outlook

Chapter 9: Policy Analysis

Chapter 10: Scenarios and Policy Options

Contributors and participants

Each chapter was assigned to one Lead Author (ChLA)

The ChLA will be overseeing a number of contributing authors (CAs) as the need dictates

Reviewers: National/International

Translators

Website and IT expert

RS & GIS

Designer and editor

THE REPUBLIC OF THE SUDAN



MINISTRY OF ENVIRONMENT, NATURAL RESOURCES AND PHYSICAL DEVELOPMENT

THE FIRST STATE OF ENVIRONMENT AND OUTLOOK REPORT

Environment for Peace and Sustainable Development

First Draft Report

June 2018



Chapter One: SOCIOECONOMIC STATUS AND ENVIRONMENT

- Introduction
- Population Trend
 - 1- Demography
 - 2-Ethnic and Culture Diversity
- Health and Environment
- Education and Environment
- Poverty and Environment Nexus
- Human settlement
- Urbanization
- Agricultural
- Environmental Policies and Environment

Gender and Environment

- Sudanese Women Profile
- Women Decision Making
- Women and Legal Framework
- Women and Economic Rights
- Gender Environment
- Women Peace and Security
- Gender Based Violence
- Women Education and Employment
- National Strategies and Policies for Women Empowerment

Chapter Two: Environmental Governance

- The Sudan is currently governed by the Transitional 2006 Constitution, which is based on the Comprehensive Peace Accord (CPA) signed between the Government of the Sudan and the Sudanese People Liberation Movement in January 2006 but has been subjected to many amendments since the severance of Southern Sudan in 2009.
- Two types of laws: The Islamic Law and the Customary Law are main sources of legislation in the Sudan. A third set of laws is included in the Statutory Law.
- The majority of enacted environmental and natural resources laws, such as those relating to fisheries, game and wildlife, forestry legislation, etc., fall under statutory law.

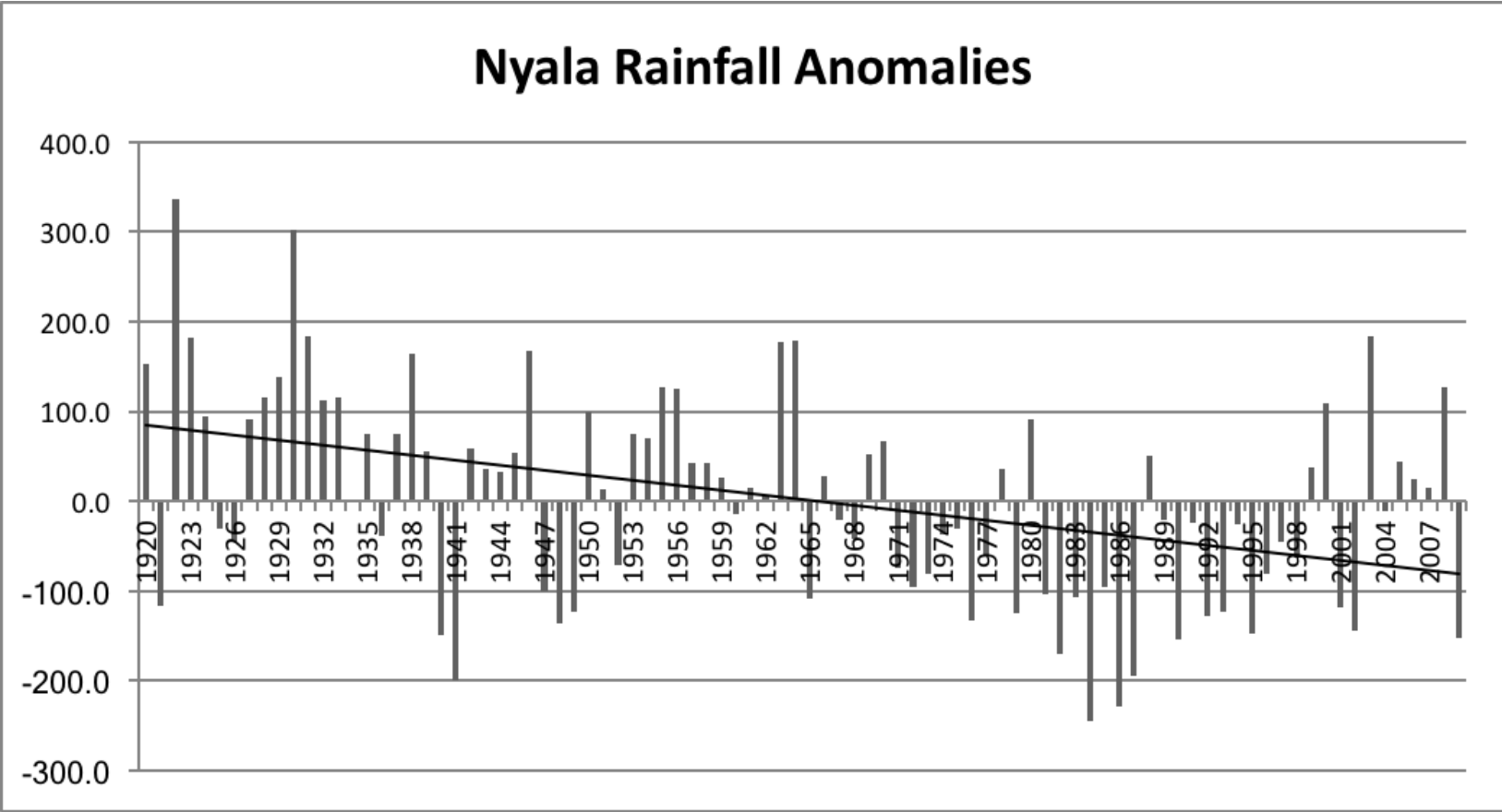
- International Conventions and agreements
- National Conventions and Agreements
- Environmental Management Structure
- SDGs and Sudan
- **Policy Analysis**
 - 1-Post-independence Policies
 - 2-Environment-related policies connected with international conventions
 - 3-Institutional, policy, and regulatory framework
- Findings (GAPs)

Chapter Three: Atmosphere

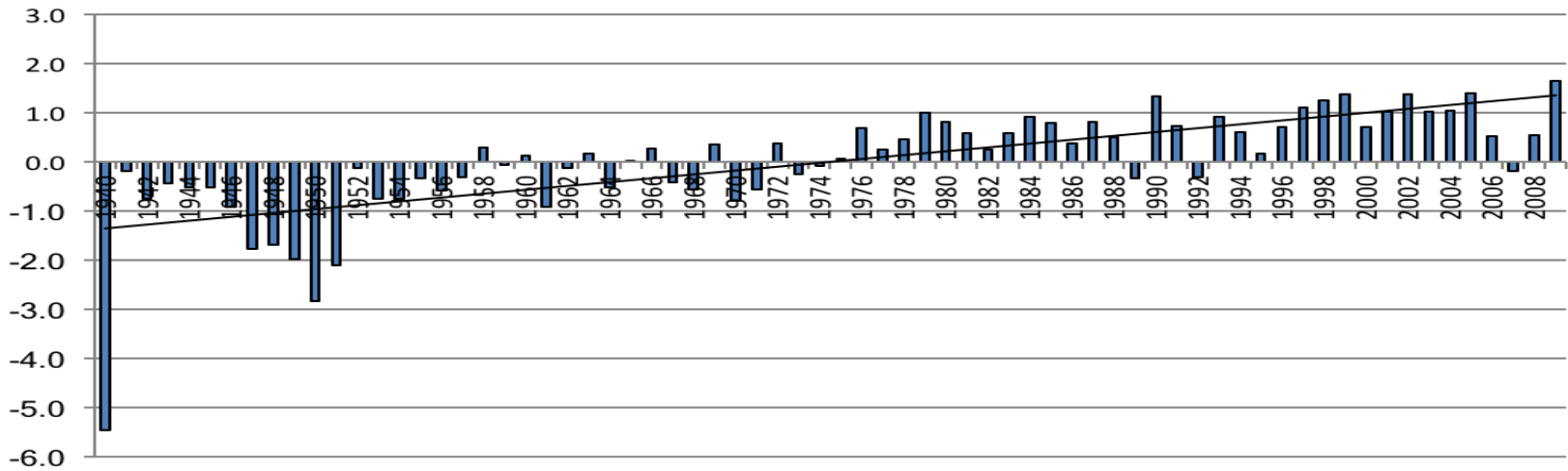
- Environmental pollution has recently become one of the important issues that gain much concern in the Sudan. Air pollution is the most identified forms of pollution through vision, smell or even taste, travel from a place to another and has impact on health and the environment.
- In the Sudan air pollution constitute particular problems in areas near its source for the surrounding residential areas.

- Air Pollution Sources
- Environmental effects of air pollution
- **Air Pollution in the Sudan:**
 - 1- Sources of air pollution in the Sudan
 - 2- Case studies
- Response

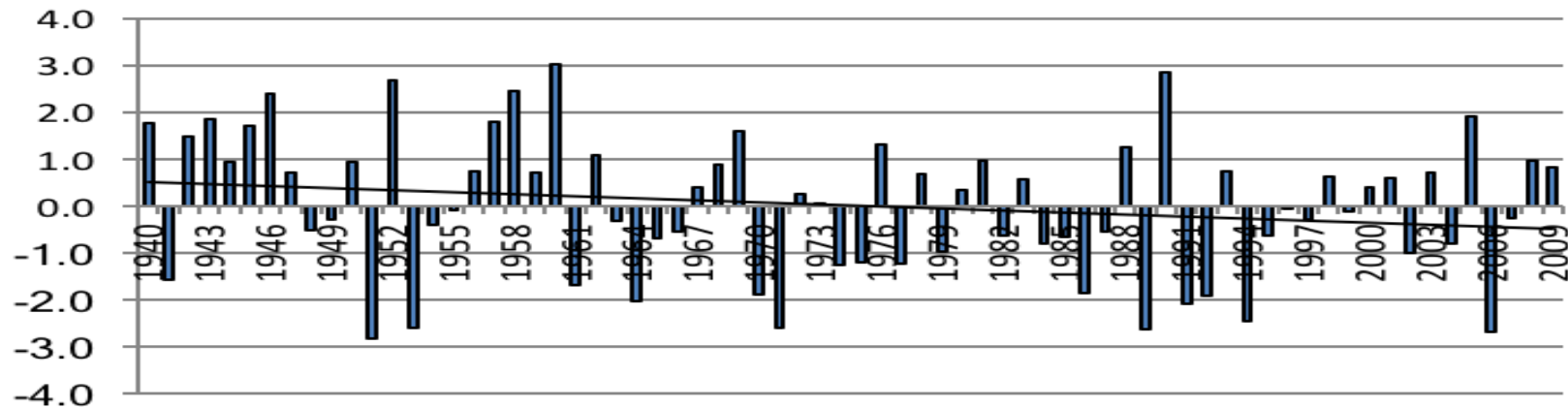
Atmosphere:



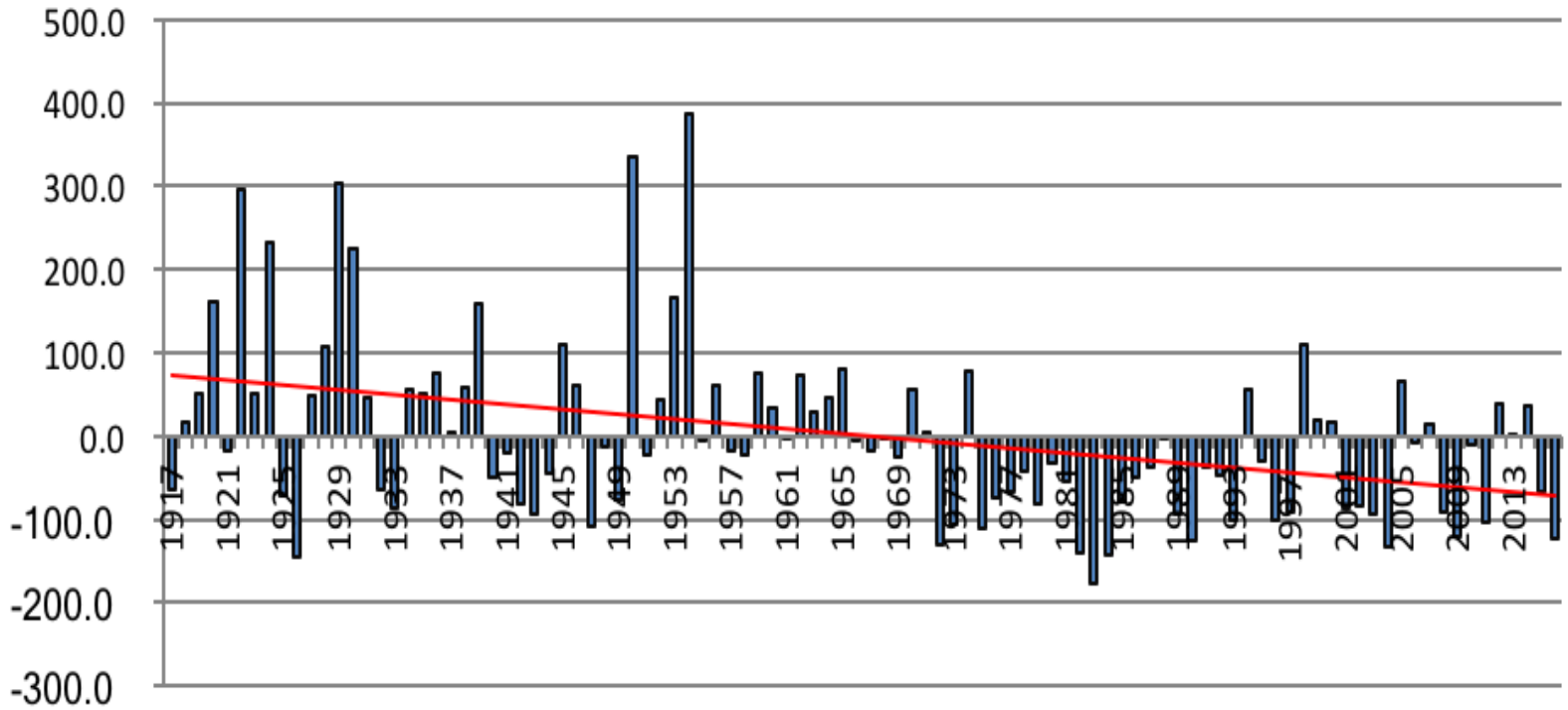
Nyala Minimum Temperature Anomalies



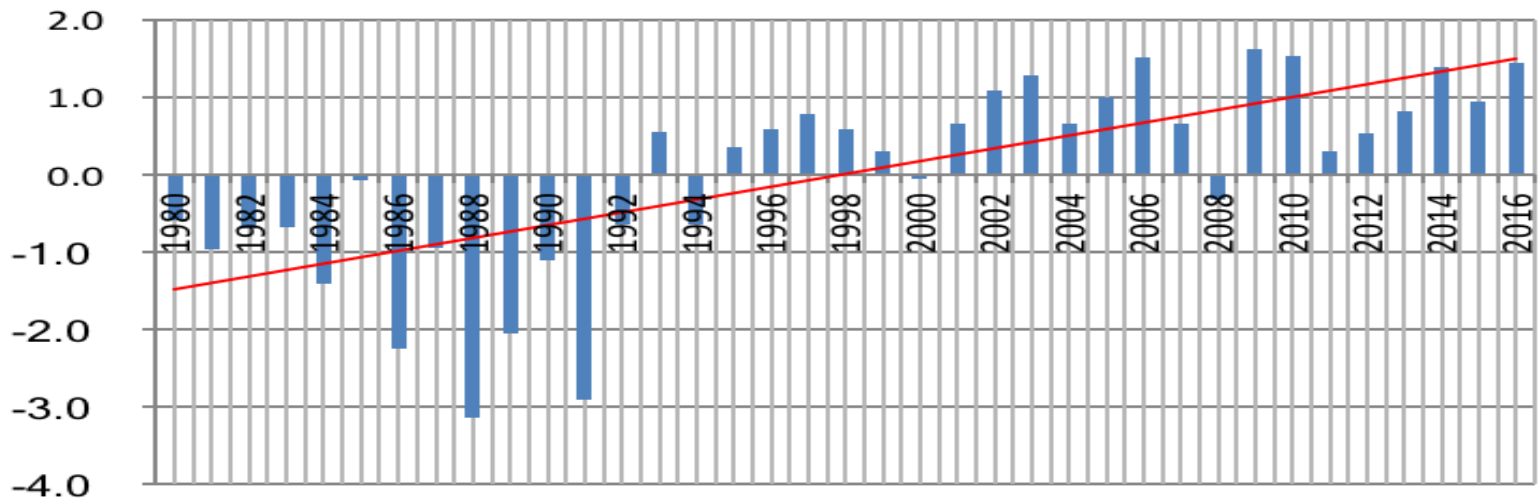
Nyala Maximum Temperature Anomalies



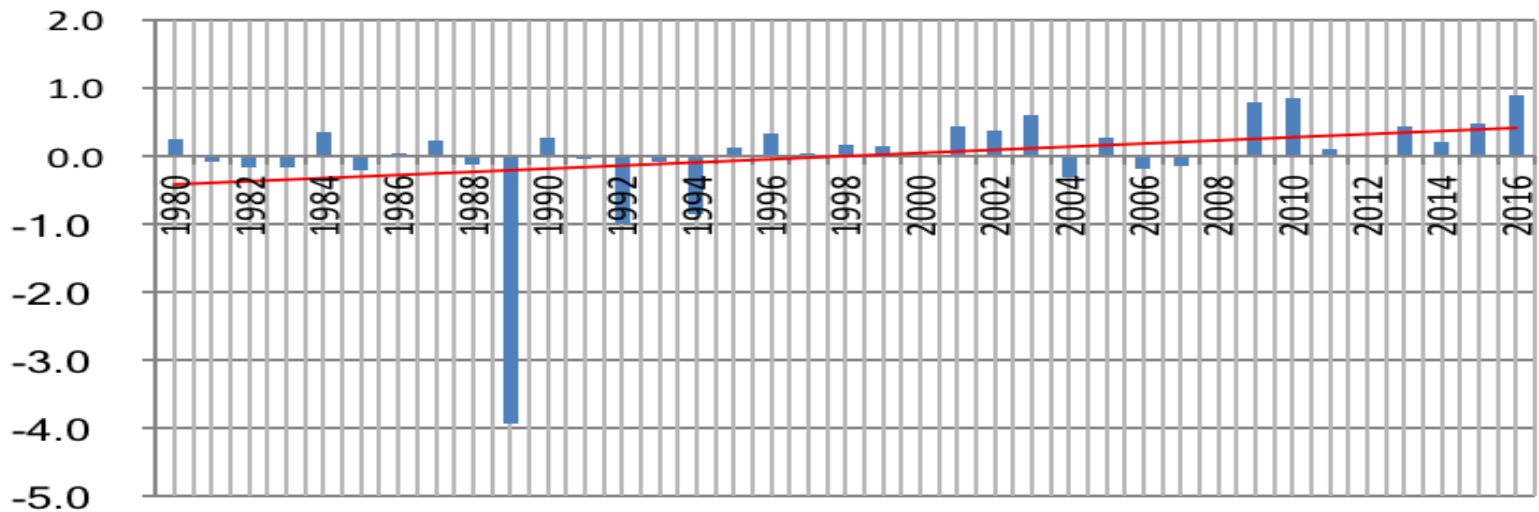
Elfasher Long term Rainfall Anomalies



El Fasher Minimum temperature anomalies



El Fasher Maximum temperature anomalies



Chapter Four: Land

- BACKGROUND
- STATE OF LAND NATURAL RESOURCES
- NON-SUSTAINABLE NATURE OF LAND USE
 - 1- Land tenure
 - 2- Land use transformation
 - 3- Land degradation
 - 4- Population instability
 - 5- Poverty and food insecurity
 - 6- Artisanal gold mining
 - 7- Conflict over land and resources
- Displacement and refugees

Chapter Five: Water Resources

- Overview
- Available Water for Sudan
 - 1- The Nile System
 - 2- The Seasonal Streams or *Wadis* or *Khors* Water Resources
 - 3- Groundwater
 - 4- Marine Waters
 - 5- Lakes
 - 6- Nonconventional Waters
- **Current and Committed Uses of Water in Sudan:** Irrigated Agriculture, Domestic and Industrial Use, Hydropower Generation, Navigation and Recreation, Floods and Draughts
- Threats and Challenges to Water Resources
- Opportunities for Sustainable Water Management

Chapter 6: Biodiversity

Sudan's major ecosystems include forests that extend across several agro-ecological zones, and are home to a variety of fauna and flora.

The overall objective of the chapter is to scrutinize the literature, validate and publicize information related to the importance of biodiversity contribution in food security and the national economy.

- **The chapter is organized into nine sections as follows:**
- **Section one** deals with Overview of State of Biodiversity in Ecological Zones- Ecosystems of Sudan: It hubs on the following issues:
 - Ecosystems and habitats:
 - State of Forest resources in Sudan.
 - Mangrove Forests:
 - Riverine and islands flora:
 - Marine and Coastal Biodiversity:
 - Avifauna and waterfowl:
 - Fisheries biodiversity
 - Rangelands and livestock in Sudan:
 - Agro-biodiversity

- **Section Two** is mainly concerned with Ecosystem services
- **Section Three** covers the drivers and pressures
- **Section Four** is mainly concerned with responses:

Chapter Seven: PERSISTENT ISSUES

- **Desertification**

- 1-The Driving Forces, Pressures, State, Impact and Response Model

- 2-Impact

- 3-Response

- **Pesticides**

- 1- DPISR

- 2- Pesticides users

- 3- Pesticides Management in Sudan

- 4- Persistent organic pollutants pesticides

- 5- Pesticides Waste and Management

- 6- Impact

- 7- Response

Chapter Eight: Emerging Issues

- This chapter discusses a number of emerging environmental issues in Sudan starting from artisanal mining which is progressively expanding in most states of the country.
- Other emerging issues are represented in transportation (2-stroke vehicles), E-waste, oil field waste water and hydrocarbon gases flaring and emission.

Chapter Nine: Policy Analysis

- Background
- Assessment-scope of the environmental issues and indicators-trends
- Assessment of the period 2011-2017
- The key policy gaps
- Key policy inter-linkages and their positive and negative implications
- Assessment of Future outlook - 2018 – 2030

Chapter 10: Scenarios and Policy Options

Business as Usual Scenario

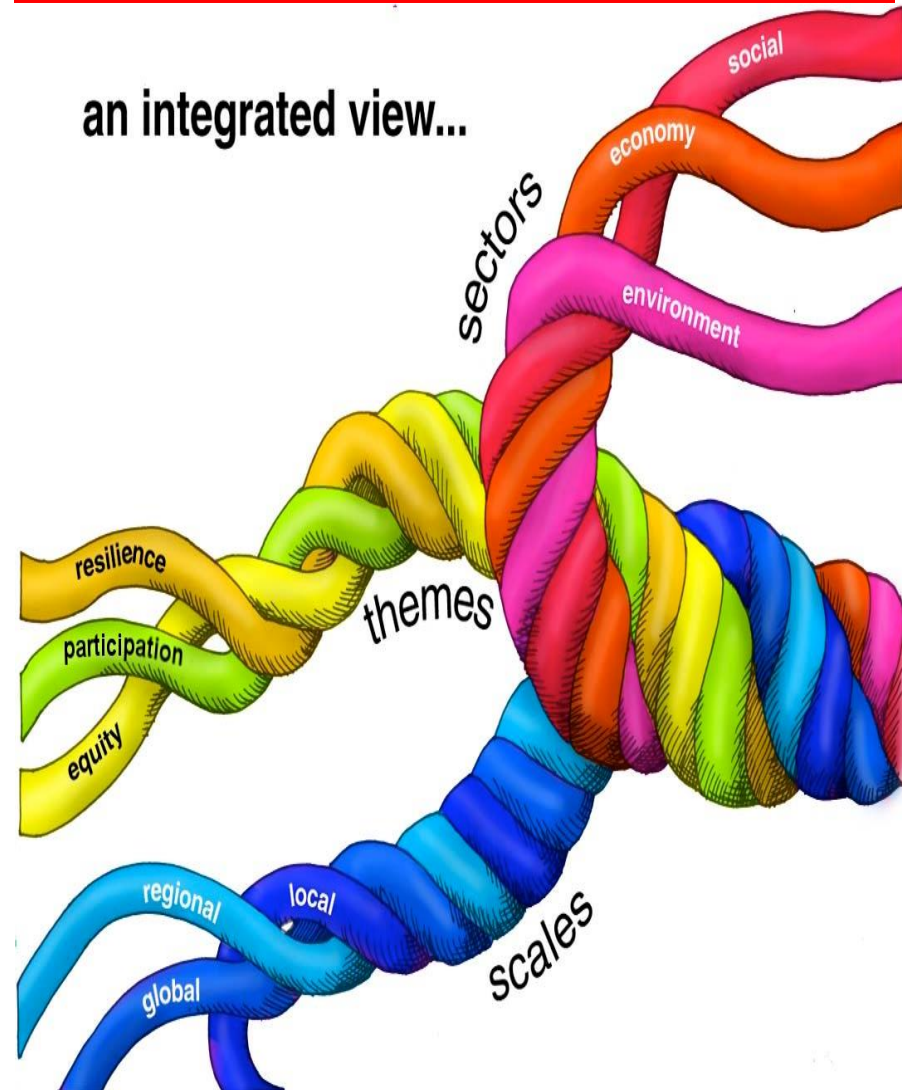


Gold -rush



Bending the Curve Scenario

an integrated view...



Thanks