

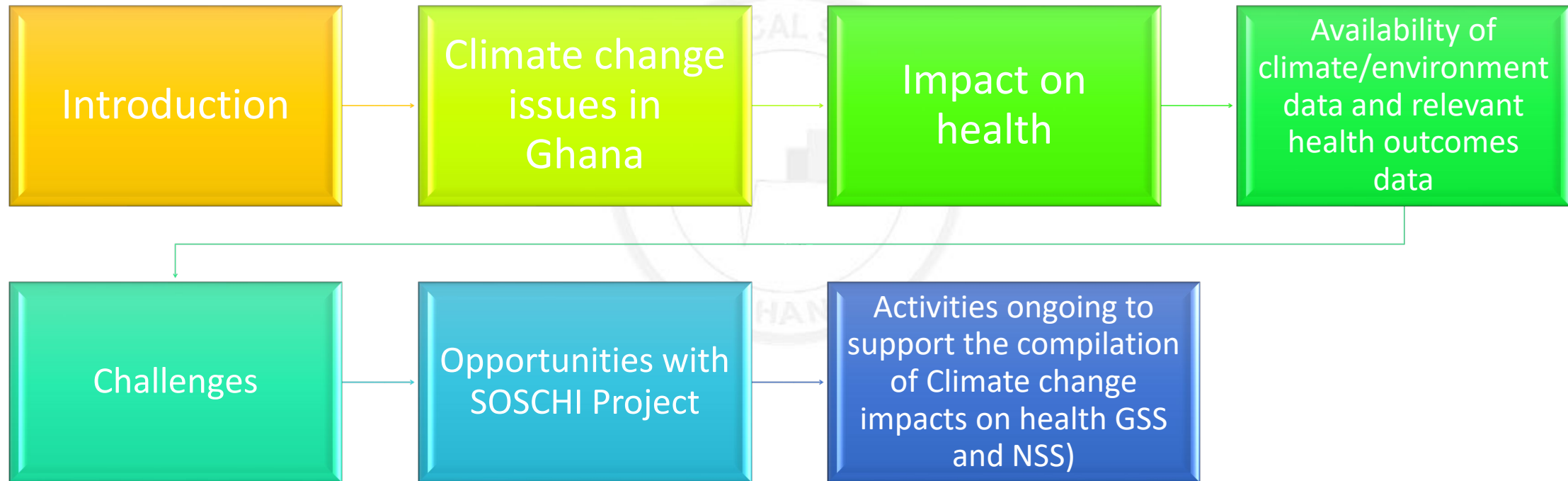
Monitoring of climate change impacts on health in Ghana

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Content



Introduction

- There is already evidence of the direct manifestations of climate change in Ghana.
 - increasing temperatures;
 - rainfall variability;
 - unpredictable extreme events; and
 - sea-level rise.
- These manifestations affect various facets of Ghana's socio-economic structure, especially with its high reliance on sectors that are particularly sensitive to climate change — agriculture, forestry and energy production, and health.
- The Government of Ghana recognizes that climate change must be mainstreamed into policies and sectoral activities to achieve sustainable growth. As such, the vision outlined in the NCCP is:

To ensure a climate-resilient and climate-compatible economy while achieving sustainable development through equitable lowcarbon economic growth for Ghana.

Climate change issues affecting Ghana (1/4)

- These issues can be categorised into these 3 areas:
 - Ocean-related;
 - Land-related; and
 - Human-related and emissions.



Ocean-Related Issues (2/4)

Sea-Level Rise & Coastal Erosion:

- Eastern coast (Keta, Ada Foah, and Anloga) is losing homes, schools, and farmlands to the sea.
- Over 4,000 residents were displaced in Keta (Volta Region) due to tidal waves in 2021.

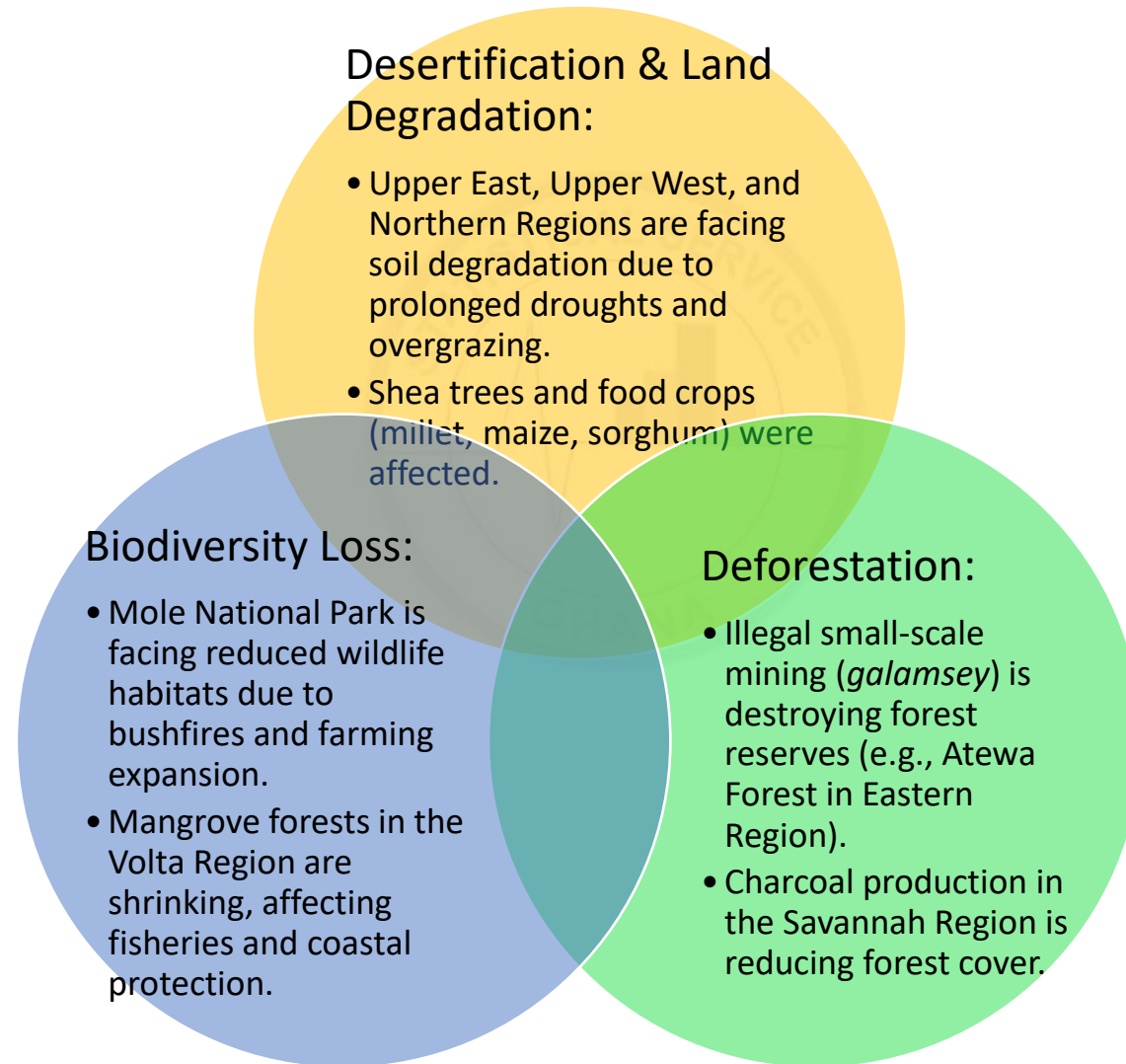
Coastal Flooding:

- Frequent flooding in Cape Coast and Takoradi is affecting fishing harbors and coastal infrastructure.
- Tidal surges damage roads and settlements along the Accra-Tema coastline.

Marine Ecosystem Stress:

- Declining fish catches in Tema and Elmina linked to rising sea temperatures and overfishing.
- Small-scale fishermen reporting longer travel distances for fish.

Land-Related Issues (3/4)



Human Activities & Emissions (4/4)

Agricultural Practices:

- Slash-and-burn in the Ashanti and Bono Regions is worsening soil degradation.
- Rice farming in Northern Ghana contributes to methane emissions.

Transportation Emissions:

- A growing number of used vehicles in Accra, Kumasi, and Takoradi is causing air pollution and smog.
- PM2.5 levels in Accra exceeding WHO limits → linked to respiratory illnesses.

Industrial Activities:

- Oil exploration in the Western Region (Jubilee Field) is raising environmental concerns.
- Cement factories in Tema are releasing dust and CO₂ emissions.

Urbanization & Waste:

- Accra generates over 3,000 tons of waste daily, with poor disposal causing methane emissions and flooding.
- Plastic waste blocking drainage systems and polluting lagoons (e.g., Korle Lagoon).

Energy Use:

- About 70% of households still rely on charcoal and firewood for cooking (especially rural areas).
- Increasing use of diesel generators during power shortages → adding to emissions.

The main identified climate-health in Ghana

Respiratory/ Air-borne diseases: Asthma and bronchitis cases are rising in Accra and Kumasi due to vehicle emissions and industrial pollution.

Vector-borne diseases-causing pathogens are transmitted from one host to another. : Meningitis outbreaks in Upper West Region linked to rising dry-season heat; malaria incidence linked to stagnant floodwaters.

Mental and psychosocial health: Communities in Keta and Ada are suffering psychological distress due to repeated displacement from tidal waves.

Zoonoses are caused by germs that spread between animals and people.

Waterborne diseases and other water-related health impacts: Cholera outbreaks in Accra and Cape Coast after floods.

Malnutrition and food-borne diseases: Erratic rainfall and land degradation lower the production of staple foods such as maize, affecting household nutrition.

Injury and mortality from extreme weather events

Availability of climate/environment data

Source (owner / custodian)	Type of data (examples)
DHIMS2 (District Health Information Management System) — Ghana Health Service	Routine health service data: outpatient visits, admissions, malaria, maternal & child health
NHIS claims database (National Health Insurance Authority)	Claims/encounter records, diagnostic codes, service utilization and costs
Integrated Disease Surveillance and Response (IDSR)/ National Surveillance (Ministry of Health / GHS)	Notifiable disease surveillance (cholera, meningitis, outbreaks)
Ghana Demographic & Health Survey (GHS/GSS / DHS Program)	Population health indicators: mortality, nutrition, malaria, WASH, socioeconomic variables
Ghana Meteorological Agency (GMet)	Observed & gridded climate data: temperature, rainfall, humidity, station records
Ghana EPA / Air quality monitoring & national AQI dashboards	Air quality data: PM2.5, PM10, NO2, CO, AQI indices
Research institutes & labs (Noguchi, universities, MRC-Ghana, etc.)	Lab surveillance (malaria, cholera), cohort datasets, air/water testing
Statsbank/Statsghana - Ghana Statistical Service)	Household socio-economic data, gridded population data, poverty statistics

Challenges

Challenge Area

Description

Weak coordination and fragmentation of Data Sources

Climate and health data are produced by separate agencies with limited integration.

Limited Data Coverage

Sparse monitoring networks and weak reporting from some areas.

Technical & infrastructure Constraints

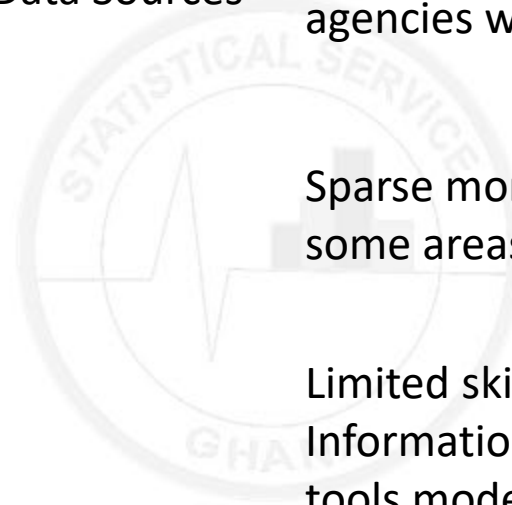
Limited skills in climate-health analysis using Geo Information System, satellite imagery, remote sensing tools modeling.

Timeliness & Accessibility

Data often delayed, and access is sometimes restricted.

limited resources and over-reliance on donor projects

Low prioritisation of environment-health statistics; donor-dependency.



Opportunities

- Standards for Official Statistics on Climate- Health Interactions (*SOSCHI*) Project offers Ghana a chance to **move from fragmented, donor-driven climate-health data** toward an **integrated, nationally-owned system** aligned with FDES and CCSI.
- **The objective of the SOSCHI Project is to:**
 - i. Provide a **structured methodology** (FDES + CCSI) to integrate climate and health statistics
 - ii. Support **capacity building** in NSS (GSS, GMet, EPA, GHS, NADMO, academia)
 - iii. Provide **standardised definitions** for **international comparability**, so Ghana's data can feed into global monitoring (SDGs, Paris Agreement, Sendai Framework)
 - iv. Develop a transparent and globally generalisable **framework** for official statistics on climate change health
 - v. Explore statistical methods to provide estimates of climate-related health risk using real world data sources, including novel and big data, and modelling local impacts.
 - vi. Develop an **online platform** that enables access and sharing of the framework and data sources
 - vii. Helps **bridge the evidence gap** between climate impacts and health outcomes for policymaking.
 - viii. Enables policymakers to better assess how climate change is affecting health, e.g. to track disease burdens attributable to heat, or how extreme rainfall is affecting waterborne disease.

Activities ongoing to support the compilation of Climate change impacts on health

- Integrating **climate and environment modules** into national surveys:
 - Ghana Living Standards Survey (*GLSS*) now tracks household energy use, WASH, and sources of water
 - Ghana Core Agriculture and Production Methods and Environment Survey (*CorePME*) tracking farming sustainability, irrigation and drainage, waste management, GHG and environmental issues, climate and environmental shocks, and adaptation.
 - *MICS & DHS* collect nutrition, child health, and water/sanitation indicators linked to climate vulnerability.
 - Integrated and Business Establishment Survey (*IBES*) tracking producers and users of environmental goods and services.



THANK YOU FOR YOUR KIND ATTENTION