

# Strengthening Ghana's Climate (Environmental) Resilience: The Role of the Environmental Protection Authority (EPA)

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# AIR POLLUTION

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- Air pollution remains Ghana's number one environmental health risk and the sixth-ranked cause of death (out of 19 total risk factors) nationwide.
- According to WHO, 100% of Ghana's population is exposed to PM2.5 levels exceeding recommended limits.





# AIR POLLUTION

- Household air pollution from firewood and charcoal cooking (causing ~8,800 premature deaths annually).
- Ambient air pollution from vehicles, industries, dust, and open burning (causing ~7,200 premature deaths).
- These pollutants cause respiratory illnesses, asthma, heart disease, and lower productivity. Infants and the elderly are most vulnerable.
- The economic cost of air pollution is estimated at 4–5% of Ghana's GDP annually due to health and productivity losses.





# EPA's Interventions

- EPA leads Ghana's fight against air pollution through a combination of regulation, data monitoring, partnerships, and public education.
- Air Quality Monitoring Network
- The EPA has installed continuous Air Quality Monitoring Stations in cities such as Accra, Kumasi, Tema, Takoradi, and Tamale.
- These stations measure pollutants like PM2.5, PM10, CO, and NO and publish daily Air Quality Index (AQI) reports to the public.
- Data collected informs environmental policy and emergency health responses.







# EPA's Interventions

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- Clean Air Accra Project
- Implemented in collaboration with the World Bank, Accra Metropolitan Assembly, and Ministry of Environment, Science, and Technology (MEST).
- Focus areas include promoting non-motorized transport (cycling/walking), regulating vehicle emissions, and reducing open burning.
- The project also supports urban tree planting and promotes green public transport.



## •**Vehicular Emission Regulation**

- The EPA works with the Driver and Vehicle Licensing Authority (DVLA) and Ghana Standards Authority (GSA) to introduce vehicle emission tests as part of roadworthiness certification.
- There are ongoing talks to phase out the importation of old, high-emission vehicles.



## •**Clean Cooking and Household Energy Transition**

- The EPA promotes the use of Liquefied Petroleum Gas (LPG) and improved biogas and biomass stoves under the Clean Cooking Initiative.
- Over 100,000 households have transitioned from charcoal to LPG in the last five years, reducing indoor smoke exposure.





# •Public Education and Research

- Through the “Breathe Clean, Live Green” and “Clean Air for Accra” campaigns, the EPA raises public awareness about air quality and responsible waste burning.
- Research collaborations with universities help generate local data to guide future air quality policies.







# WATER POLLUTION

Water pollution costs Ghana nearly 3% of GDP annually and leads to about 10,600 premature deaths each year. Once-pristine rivers such as the Pra, Offin, and Ankobra are now polluted.



# EPA's Interventions

- **Water Quality Monitoring and Assessment**

- The EPA conducts routine testing of both surface and groundwater in collaboration with the Water Resources Commission (WRC).
- The National Water Quality Monitoring Program checks for heavy metals, pH, biological oxygen demand (BOD), and other indicators.
- Findings are published in the State of the Environment Report to guide national decisions.

- **Effluent Discharge Permitting System**

- Industries must obtain Effluent Discharge Permits before releasing wastewater.
- The EPA enforces strict standards under the Environmental Assessment Regulations (L.I. 1652).
- Non-compliant industries are fined, closed, or ordered to install treatment plants.



## •**Anti-Galamsey Enforcement**

- The EPA partners with the Ghana Armed Forces, Minerals Commission, and NIMOS to stop illegal mining.
- Polluted rivers are being rehabilitated, and communities are encouraged to engage in re-afforestation and alternative livelihoods such as aquaculture and sustainable farming.

## •**Collaborative Restoration Projects**

- The EPA has partnered with the UNDP and WaterAid Ghana to restore riparian zones and strengthen local governance for water resource management.





# WASTE AND PLASTIC POLLUTION

- Ghana generates approximately 3,000 metric tons of plastic waste daily (1.1 million tons annually) — 86% of which is mismanaged.
- Only about 5% is recycled, and 11% is burned, releasing greenhouse gases and toxic chemicals.
- Impacts include:
  - Urban flooding due to clogged drains.
  - E-waste contamination releasing heavy metals like mercury, cadmium, and lead into the environment.





# EPA's Interventions

- National Plastics Management Policy (NPMP)
- Extended Producer Responsibility (EPR)
- Support for Recycling Enterprises
- E-Waste Regulation and Control
- Public and Private Sector Partnerships
- Marine Debris Monitoring



The background of the slide is a collage of three images. On the left, a factory with several tall smokestacks is shown against a hazy, orange-tinted sky, with thick black smoke billowing from one of the stacks. In the center, there is a large, messy pile of discarded plastic waste, including bottles, containers, and other debris. On the right, an axe is shown resting on a freshly cut tree stump, with a blurred background suggesting a forest. The bottom of the slide shows a wide expanse of dry, cracked earth, emphasizing the effects of drought.

# CLIMATE CHANGE

- Air, water, and waste pollution collectively worsen Ghana's climate change vulnerability.
- Greenhouse gas emissions from waste burning, fossil fuel use, and deforestation have raised average temperatures by over 1°C since 1960.



# CLIMATE CHANGE

- Floods & Storms
  - Urban flash floods (Accra), riverine flooding; coastal surge
- Coastal Erosion
  - Hotspots like Keta; shoreline retreat & exposure
- Heat Stress
  - Rising wet-bulb risks in cities & workplaces
- Drought & Agriculture
  - Northern savannah crop stress; water scarcity
- Public Health
  - Vector/water-borne disease sensitivity to climate
- Critical Infrastructure
  - Roads, power, water systems in risk corridors









# EPA's Interventions

- **National Climate Change Policy (NCCP)**
  - The EPA leads Ghana's implementation of the NCCP, focusing on resilience, mitigation, and sustainable growth.
  - It ensures that environmental policies are integrated into national development planning.
- **Nationally Determined Contributions (NDCs)**
  - EPA coordinates Ghana's NDC targets under the Paris Agreement, aiming to reduce 64 MtCO<sub>2</sub>e by 2030.
  - Key measures include renewable energy, reforestation, and sustainable agriculture.



- **National Adaptation Plan (NAP)**

- This plan focuses on climate-resilient agriculture, water resource management, and disaster risk reduction.
- The EPA trains local authorities in climate adaptation planning.

- **Renewable Energy and Green Projects**

- EPA collaborates with the Energy Commission and Ministry of Energy to promote solar and biogas solutions for schools, markets, and hospitals.

- **Coastal Protection and Reforestation**

- The EPA supports sea defense walls and mangrove restoration projects in Keta and Ada.
- Through the Greening Ghana Initiative, over 10 million trees have been planted since 2021.



# CONCLUSION

- Ghana faces complex environmental challenges — from air and water pollution to waste mismanagement and climate change.
- The EPA continues to play a vital leadership role in:
  - Enforcing environmental laws and emission standards,
  - Promoting cleaner technologies and renewable energy,
  - Monitoring environmental quality,
  - Supporting recycling, reforestation, and restoration programs, and
  - Educating the public on environmental responsibility.
- **To achieve a cleaner, healthier, and climate-resilient Ghana.**