



SECURITIES AND EXCHANGE COMMISSION
Protecting Investors in the Capital Markets



UNDERSTANDING CLIMATE CHANGE

The Science, History, Risks and Impacts

What is Climate Change?

Climate change refers to long-term shifts in temperatures and weather patterns, largely driven by human activities, especially the burning of fossil fuels (IPCC, 2023). These activities release greenhouse gases (GHGs) like carbon dioxide and methane, which trap heat in the atmosphere (IPCC, 2023).

A Brief Historical Context

Since the Industrial Revolution, human activity has significantly increased atmospheric GHG concentrations (IPCC, 2023). In 2023, global CO₂ levels reached over 420 parts per million the highest in over 4.3 million years (NOAA, 2023). This has led to global temperature rises, altered weather systems, melting ice caps, rising sea levels, and more frequent extreme weather events.

Why it Matters to Zambia

Agriculture: Over 70% of Zambians depend on rain-fed agriculture (Green Climate Fund, n.d). Droughts and erratic rainfall patterns now pose serious threats to food security.

Health: Rising temperatures have expanded the transmission range of diseases like malaria and cholera (World Health Organization Zambia, 2024).

Water: Reduced river flows and lower water tables are affecting hydropower generation, which contributes over 80% of Zambia's electricity supply (UNDP, 2025).

Livelihoods: An estimated 61% of rural livelihoods are at risk due to climate-induced events like floods and prolonged dry spells (European Investment Bank, 2022).

Risks and Impacts

Climate change amplifies risks across ecosystems, economies and communities:

- Natural disasters such as floods, droughts and heatwaves.
- Economic disruptions to agriculture, mining and energy sectors.
- Social displacement and increased poverty levels.



Figure 1: a) 2024 drought in Zambia. Source: AgriFocusAfrica; and b) Floods in Zambia, 27 January 2023. Source: DMMU Zambia.

Zambia, like many developing nations, is particularly vulnerable and must act decisively to adapt.

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