At time many developed nations are celebrating themselves for the insufficient finance they have pledged to the loss and damage fund on the sidelines of the ongoing climate negotiations in Dubai, scientists warn that if the world does not agree on a fossil fuel phase out, floods and droughts will become even more severe, more people will die, and the finance to pay for the losses and damages won't ever be enough especially for Africa.

"After 27 COP summits, we simply don't have time for vague promises and agreements. We need fossil fuel phase out," says a new report released by a group of scientists from different universities across Africa, UK, the Netherland and the United States.

Joyce Kimutai, researcher at the Grantham Institute – Climate Change and the Environment,Imperial College London, noted that at just 1.2°C of warming, we are already seeing devastating climate impacts in Africa. "With every fraction of a degree of warming, life in Africa will become more dangerous. We saw it in the past with the drought and we're seeing it again now with the floods," she said.

According to the new study, there is new evidence that climate events such as the Indian Ocean Dipole or El Niño can greatly affect the weather in East Africa.

The findings show that yet these are natural events which happen every few years, climate change, on the other hand, is acting on the weather all the time, making these natural cycles more extreme and unpredictable.

The heavy rainfall that led to devastating flooding in Kenya, Ethiopia, and Somalia during October and November was made up to two times more intense by human-caused climate change, according to a rapid attribution analysis by an international team of leading climate scientists from the World Weather Attribution group.

The study found that the positive phase of Indian Ocean Dipole (IOD), a naturally occurring climate phenomenon, also doubled the intensity of the rainfall that hit East Africa, meaning a combination of climate change and the positive IOD made the rainfall an unusually extreme event.

The rainfall is ongoing and follows a three-year drought in the region, which a previous World Weather Attribution study found was worsened by climate change.

The period between October and December is known in East Africa as the "short

rainy season”. While rainfall is not unusual this time of the year, its frequency and intensity is highly variable and influenced by two natural climate phenomena: the El Niño–Southern Oscillation (ENSO) and the IOD. Both ENSO and the IOD alternate between positive, neutral and negative phases. In positive years, such as 2023, rains are more abundant in East Africa.

To quantify the effect of climate change on the heavy rainfall, scientists analysed observed weather data and climate model simulations to compare how the event has changed between today’s climate with approximately 1.2°C of global warming, and the cooler pre-industrial climate, following peer-reviewed methods.

The researchers found that the heavy rainfall over East Africa between October and December was one of the most intense ever recorded in the region for the time-period of the data analysed. The analysis of historical data indicates that the IOD played an important role in these rains, increasing their intensity about two-fold. In today’s climate, such rainfall events are still rare, and are expected to happen only once every 40 years.

Commenting on the new findings, Simphiwe Stewart, Red Cross Red Crescent Climate Centre, the Hague, Netherlands, observed that attribution studies continue to shine a light on the complex crises faced by vulnerable groups who are simultaneously exposed to the impacts of climate and extreme weather events as well as the dynamics of displacement, migration, and various forms of conflict.

“Despite anticipatory action and early warning systems, the increasing frequency and intensity of weather disasters will strain government and humanitarian response capacity. Addressing the underlying dynamics of vulnerability including land use, urbanisation planning, peace and resilience building will be crucial in the Horn of Africa and elsewhere on the continent,” he said.

Friederike Otto, Senior Lecturer in Climate Science at the Grantham Institute – Climate Change and the Environment, Imperial College London, said: “Africa has contributed just 4% of global carbon emissions, but is disproportionately suffering losses and damages.

“If the world does not agree on a fossil fuel phase out, floods and droughts like these ones will become even more severe, more people will die, and the finance to pay for the losses and damages won’t ever be enough,” he said while reacting to the latest commitments made at COP28.