A leading panel of experts have warned that global warming has been very rapid, and unless large-scale global climate protection actions are taken minimizing it will not be possible.

They believe that the warming has been more rapid in Africa than the global average as the continent experiences extreme weather events, and this is projected to increase in the coming decades.

Dr Joseph Nzau Mutemi, one of the Lead Authors of the just-released 2021 Intergovernmental Panel on Climate Change (IPCC) report and Scientist at the University of Nairobi, said during a virtual media briefing dubbed: 2021 IPCC6th Assessment Report on Climate Change: Policy Implications forAfrica with Africa Science Media Centre (AfriSMC) on 18 August,2021.

He advised that key pathways for slowing and reversing the adverse impacts include implementation of the action programs of major Carbon Dioxide (CO2) and other greenhouse gas emissions from the atmosphere, with an emphasis on national actions on Nationally Determined Emissions (NDEs) and timelines for Monitoring, Learning and Evaluation (MLE).

Basically, Dr Mutemi explained that climate change is caused by excess gases in the atmosphere which retain energy escaping from the earth’s surface, then returning it back to the surface thus making the surface warmer.

The main gaseous components of concern which re-emit energy from the sun to the surface are Carbon Dioxide (CO2), Methane, and other gas pollutants like Nitrous Oxide and substances containing chlorine like chlorofluorocarbons.

The Scientist mentioned that in the last 30 years, global climate has been successively warmer. Moreover, current evidence shows that the climate is nearly 1.1 Celsius warmer than pre-industrial era especially in Africa where it is much higher than the global average.

According to Dr Mutemi, human influence has warmed the climate at a rate that is unprecedented in the last decades. However, there is hope that the warm climate can be minimized before the end of the current century.

He further explained that the observed warming is driven by emissions from human activities, with greenhouse gas warming, partly masked by aerosol cooling, he also

affirmed that Carbon Dioxide is the major driver of global warming, followed by Methane, among others.

“When it comes to fossil fuels, both petroleum and liquefied gas is one sure contributor of emissions. While green energy which is non CO2 like wind-generated do not produce emissions.”

Therefore, he suggested that limiting cumulative CO2 emissions along with other greenhouse gas emissions by raising awareness could help reduce the future climate change. Also, strong rapid and sustained reduction in Methane emissions could limit the warming effect resulting from declining aerosol pollution.

At the moment, Dr Mutemi said: “Climate change is already affecting every inhabited region across the globe, with human influence contributing to many observed changes in weather and climate extremes. For instance, there is emergence of hot weather conditions across the globe including sub-Saharan Africa, Asia, Europe, among others.

Another observed change he talked about is the increased heavy precipitation in Southern Africa and other parts of the Northern Hemisphere. An additional observed change is agricultural and ecological drought with regards to our livelihood like water, food, pasture, among others.

With every increment of global warming, Dr Mutemi described that changes get larger in regional mean temperature, precipitation and soil moisture. Furthermore, precipitation is projected to increase over high latitudes, the equatorial Pacific and parts of the monsoon regions, but decrease over parts of the subtropics and in limited areas of the tropics.

In South Eastern Africa, the intensity of heavy precipitation and pluvial flooding is expected to increase, while snow and glaciers are observed and projected to decrease. As a result, coastal flooding could increase.

In East and Southern Africa, he said that the assessment revealed that severe extremes including droughts and intensity of cyclones which afflict many parts of the region are projected to increase.

Therefore, regional and international action programs on climate change and reversal of adverse implications are strongly urged.

He suggested that there is need to upscale international and national partnerships in weather and climate change science for actional information services and delivery as these are crucial for capacity and capability in the science.

This is because in order to address climate change, the science of weather is core in the attribution. “We must understand the weather, what derives it, and how it will be like from local to large scale and from few minutes to weeks. We have to research, measure and forecast it well with socio-economic application sectors.”

According to the Scientist, the Intergovernmental l Panel on Climate Change (IPCC) is an international inter-governmental agency consisting of three established Working Groups and panels who undertake tasks on climate change from the physical science basis- done by Working Group 1; the impact of climate change by group 2; and mitigation response by group 3.

The lead authors who assessed the physical science basis of climate change comprised of 234 authors from 65 countries, with 28% of women and the remaining 72% by men. Whereas 30% of the experts from (IPCC) were new to the team.

The team of authors assessed 14,000 scientific publications, with 78,000 review comments from 46 countries on Final Government Distribution.

The team having hands on working sessions, bared in mind what is happening adversely to the climate from various geographical areas globally. While a large proportion of authors were from Europe (39%), there was a strong geographical diversity with 21% of authors from Asia, 15% from North America, Central America, and the Caribbean, 9% from Africa, 9% from South-West Pacific, and 8% from South America.

Dr Mutemi acknowledged that one of the paradigms shift of the final phase of this work was the virtual assessment due to COVID-19 pandemic, which happened in early 2020.

Besides, in February 2020, the IPCC adopted its Gender and Policy and Implementation which outlines the organization’s dedication to mainstreaming gender in its work with focus on inclusivity, respect, participation, and opportunity.

The current IPCC leadership reflects more gender diversity than ever before, with two female Vice-Chairs (out of three) and two female Co-Chairs of working groups

(out of six). The proportion of women authors of IPCC has increased from less than 10% in 1990 to around 30% today, over a quarter of authors (27%) in Working Group I are women.