|| Volume 5 ||Issue 9 || September 2020 ||ISSN (Online) 2456-0774
INTERNATIONAL JOURNAL OF ADVANCE SCIENTIFIC RESEARCH
AND ENGINEERING TRENDS

CLIMATE CHANGE EFFECT ON SOUTHEAST ASIA'S MONSOON RAINFALL

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Abstract: Climate change and global warming are among the most widely debated and discussed topical issues related to the environment. While the presumption that climate change is a natural phenomenon has been reinforced by comprehensive historical evidence, all scholars vary on the anthropology of the increase in temperature in the 20th century. The implications of this are global variability in precipitation and cyclones. There is a varying degree of fluffiness in South East Asia in the relationship between global warming and seasonal moonlight. The thesis discusses the influence of climate change on the seasonality of Monsoon Asia and its implications on the variability of monsoon rainfall in South East Asia. Before the 1970s, there were typically marked changes when decadal variations in precipitation and temperatures were contrasted. But since the 1970s, anomalous global precipitation has nearly surpassed shifts in the same period of temperature fluctuations in the world. The Indian Summer Monsoon is always shifting to the west. While 70% of precipitation is below normal, the topography in some areas has an effect on the rate of precipitation. These changes during the other monsoon season in that region have an effect on precipitation intensity and on the onset of monsoon in Southeast Asia and are provisionally expected to prolong the onset of monsoon for 15 days in the future. The variability of monsoon precipitation in the SEA region is due to temperature patterns and there are major human, environmental, infrastructural and food safety effects on the degree and intensity of sporadic flooding in some areas during the monsoon season.

Keywords: *Climate change, Monsoon, Global warming, Temperature, Rainfall.*

I INTRODUCTION

Seasonal rainfall circulation is an important aspect of Earth's system characteristics. It helps to regulate the temperature of the Earth by carrying heat from the tropics to the higher latitude. However, this process, more commonly referred to as climate change, is vulnerable to long-term temperature fluctuations. Climate change is currently being debated as an anthropologically improved phenomenon. Many experts today have tried to quantify climate change and relate it to other processes. The monsoon season in Southeast Asia is possibly one of the most weather-dependent seasons. While much literature on monsoon season interaction is available, there has been little exposure to the impact of climate change on elevated temperatures on monsoon rain in Southeast Asia.

The goal of this study is to link global warming to changes in precipitation and to understand the influence of climate change on the dynamics of the Asian monsoon season and its effects on plumage differences in South Asia. Climate change is mainly discussed by comparisons of observed temperature (° C) variations at the end of the 20th and beginning of the 21st century and seasonal rainfall anomalies observed in the East Asian summer monsoon. In order to understand the effects of climate change as a result of total variation and temperature division, secondary thermometric data from the last century have been studied and discussed in the context of global precipitation meteorological records, especially in the region of South-East Asia. The behaviours and outcomes of Southeast Asian monkeys and other sub-seasons in the South East Monsoon Season are observed for a great deal of precipitation and weakness. In recent years, the volatile nature of the mountains has caused major economic losses, damage to life and property, as well as environmental and agricultural degradation. This adds to the problems of

food shortages. In many Asian countries, therefore, forecasting and appreciation has become a priority. Precipitation patterns in Monsoon.

Objective: Study focus on the Monsoon Season and its interaction with other weather systems in Asia, Increased temperatures and seasonal monsoon changes in East Asia.

Monsoon seasons and its relation with other weather systems in Asia:

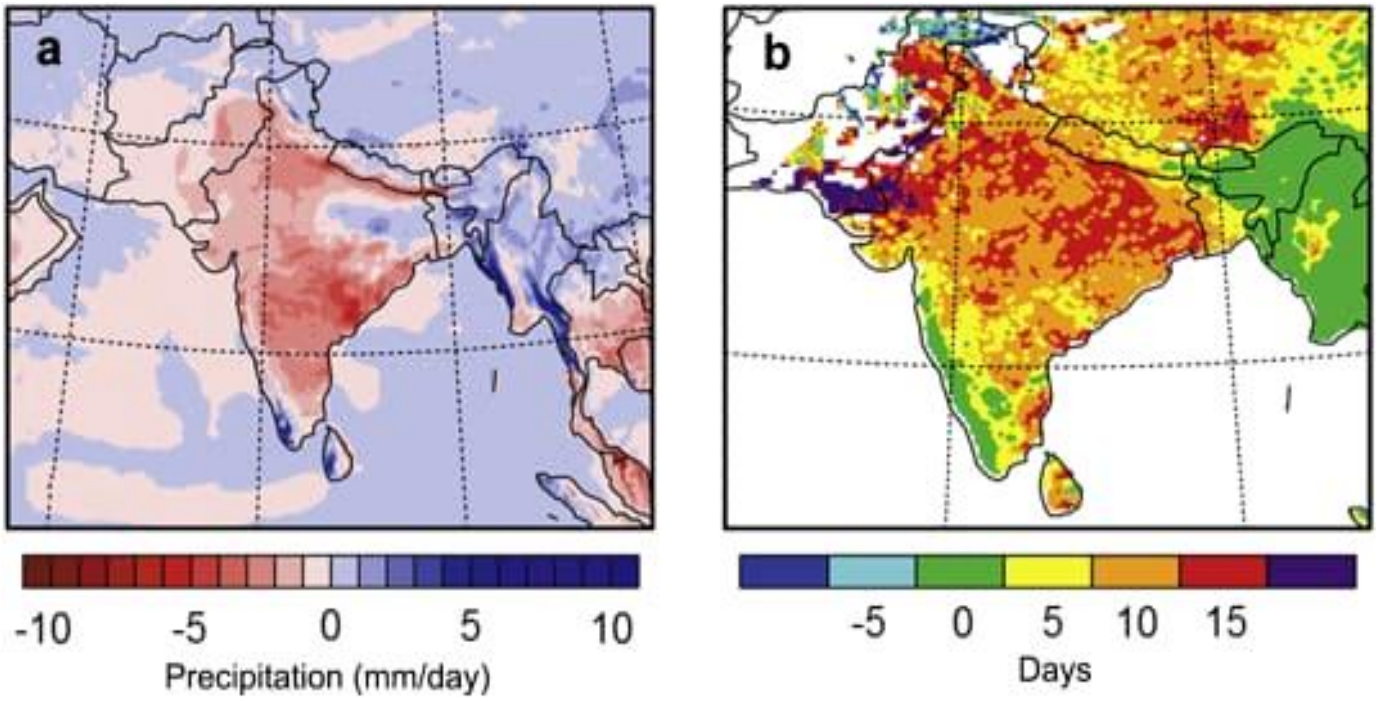
As shown in Figure 1 of the countries of South East Asia, the Philippines includes East India, South China, Myanmar, Thailand , Vietnam, Laos, Kampushea, Malaysia , Singapore , Indonesia, Borneo, Portugal and New Guinea. The Monsoon, which is the 'Major Seasonal Wind Reversal Regime,' is influenced by these countries, and the word derives from the Arabic word 'mousim' meaning seasonality. Summer rainfall maximums in monsoon areas and much of the double precipitation maximums. Monsoon affects not only Asian countries, but also tropical latitudes. Rainfall of monsoons would also have an effect on areas not considered to be monsoon at first. The two large mozons of the North-West Mozons are named from November to March and are named the South-West Mozons (Summer Mozons) from the end of May to September. October is also the month of transition from the south-west to the north-east. The EASM takes place in the boreal winter when there is maximum rainfall, while the EAWM occurs in the boreal summer when there is maximum rainfall. EAWM is an Asian atmospheric movement that relies heavily on the Siberian High, the Arctic Oscillations.

The Siberian High (SH) is a semi-permanent air system that accumulates cold , dry air in north-eastern Siberia. The greatest magnitude is reached in winter and the weather systems account for the lowest temperatures and the highest pressures. The Arctic oscillation is divided into two phases by looking at the features of wind circulating in the Arctic in a counter-clockwise direction, known as the annular mode of air circulation in the Northern Hemisphere. Circulation occurs throughout the Arctic Circle, when the wind is strong. The positive stage has been called. In the negative phase, the wind is blowing through the Tropics due to the high pressure on the North Pole and the low pressure at mid-latitudes. The Arctic climate and weather have an indirect effect on the seasonality of the mountains. The Arctic ice sheets are monitoring

the SH strength of the EAWM – a high SH that gives the EAWM a powerful effect. This is also known by methods used to measure grain loss size as an indicator of EAWM intensity by many scientists. A stronger wind will carry a gruesome ashes. Chinese documents revealed an increase in grain size which indicated that the strength of the EAWM improved during the Holocene period. Increased dust deposition was correlated with the more dry and cold conditions in EAWM.Accordingly, the Western Pacific Subtropical High (WPSH) is occupied by the EASM. Studies have shown that positive relationships between WPSH and the oceans can provide a source of predictability and emphasise the significance of subtropical dynamics in understanding the predictability of monsoon and tropical storms. The variation in the temperature of the atmosphere partially affected WPSH and had a direct effect on EASM. The western change of WPSH from the middle point on the western edge (133.5 ° E) has been unexplained since the end of the 1970s, 14 ° during the 1980–1999 period (119.5 ° E). From the western point of view, the waves are unknown. The western shift in EASM was suggested by the reaction of the atmosphere to the observed warming of the Indian Ocean – West Pacific (IWP). The Himalayan uplift, or the Tibetan plateau, is another interesting feature that affects monsoon precipitation. The Tibetan plateau is rising at a faster rate than its deforestation. The slow erosion process may be due to a drop in rainfall in key areas of the country. The assertion was made as a factor in the rise of the monsoon in Asia. Increased convection in the leeward region at high temperatures leads to more rainfall. Indigenous floods can also contribute.

Increased temperature and seasonal monsoonal changes in Southeast Asia:

Increased temperatures at the end of the 21st and early 22nd centuries will routinely trigger transitions and changes up to 70% lower than average. This will not only have an effect on the Indian Summer Monsoon, but could be delayed in the future by up to 15 days at the beginning of Monsoon in South East Asia. Fig.2 a and b display this extent, which induces decreased precipitation during the summer and prolonged start of the EASM, in terms of these distributional changes in monsoon and climate change. This is negative for the Indian population, as 75% of the summer monsoons in India make up the total annual rainfall. On 24 July, the situation was clear, with the early onset of the mousson and the maximum floods in North East India and Bangladesh causing almost a thousand deaths in South Asia.

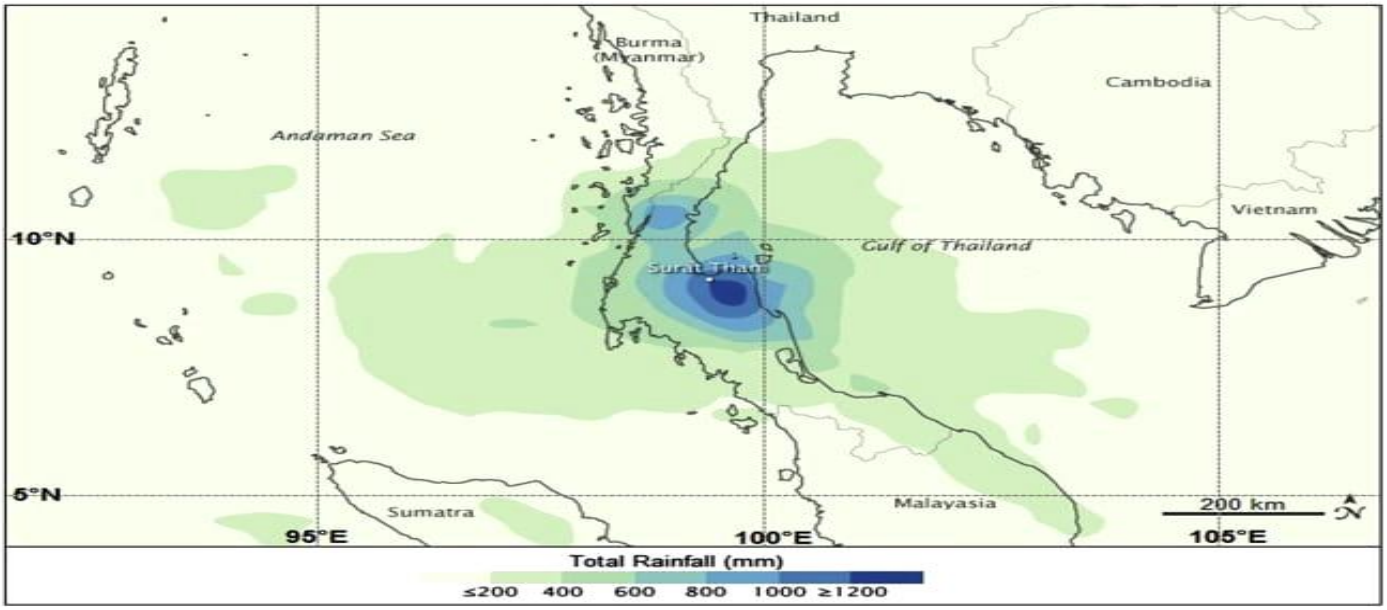


Regional small-scale precipitation is more vulnerable to changes in monsoon precipitation. A general estimate of the strength of the monsoon systems is not sufficient to explain the distribution of time and space. Monsoon variability has been correlated with ENSO (ENSO) by a variety of studies. However, ENSO can only be seen as having an effect on year-to-year variations in Asian monsoon precipitation patterns. In the future, monsoon precipitation has been found to increase in India. As carbon dioxide (CO2) rises in the environment, active-break times are likely to rise.

In a study on the variability of mousson rainfall in the Philippines from 1960 to 2010, the overall EASM and its precipitation distribution are decreasing. Accumulative precipitation decreased gradually every 10 years (0.016 to 0.075 per cent). In 1972, the annual rainfall in the Philippines was the highest (1702 mm). This was in line with the major floods in the Philippines in July. Extreme daily precipitation events are due to the convection of monsoon depression or midtropospheric cyclones. The EASM spreads to the west and the north, and the convection and circulation of precipitation processes fluctuates.

Southeast Asian EASM triggered the following floods:

The basic definition of flooding or flooding is the accumulation of rainwater that is high enough to submerge the surface of the earth. These flows come from rivers and streams, as well as from seas that spread downstream to fill lowland areas. Floods are said to be the most common in Asian countries , especially in Southeast Asian countries , including the Philippines, Indonesia , Bangladesh, Thailand , Vietnam and Cambodia. Most of the floods in Southeast Asia is linked with the EASM downpour. Flood occurrences, historically regarded as a positive contribution by farming communities, were rapidly amplified by global warming in the twentieth century. Since the 1970s, the rate of flooding has not increased. Flood events in South-East Asia can be seen as evidence that monsoon rainfall is changing. Rainfall trends have definitely changed globally over the last few years. The increasing precipitation of monsoon cycles not only triggers major floods in Malaysia and some of South East Asia, but also triggers major earthquakes. Monsoon rain has impacted a number of people in South East Asia, resulting in loss of life and destruction of resources. In August 2012, more than 170 people were killed in the last especially intense monsoon (300 mm) of rain in the Philippines. Although 580,445 people were evacuated from the flooded capital according to flood surveillance, Manila and 3035 houses were confirmed to have been lost. Typhoon Saola and then typhoon Haikui emerged from the flood incident, which had a full 600-year recovery period. Apart from the Philippines, in mid-December 2005 heavy EAWM rainfall (300 mm) occurred in Malaysian peninsula regions such as southern Thailand and northern Malaysia. A fig, guy. 3 indicates the precipitation level for the EAWM. Thailand is considered one of the 10 worst flood-affected countries in the world in September, October and 1980, with much of southern Thailand overlooked by the most recent monsoon floods in March and April 2011 (NASA-Earth Observation, 2011). Monsoon flood intensity continued in 2011 until the tropical storm Nock-ten struck the ground at the end of July. The flooded areas of Bangkok 's capital in October were destroyed and nearly 815 were killed by flooding across the northern and central provinces of Thailand and flooded areas of the capital. The agricultural sector has lost almost 20,000 km2. This has had a major effect on food security in the SEA region, as Thailand is the largest rice exporter in the region. The World Bank (2011) has estimated economic losses and flood risk at USD 45.7 billion. Significant floods in large areas triggered by monsoon rains are also normal in India and Bangladesh. They're also popular. However, in the rainy season from June to the end of September, North East India and Bangladesh have their annual monsoon rainfall.



CONCLUSION:

The study gave some insight into the parallels between global warming and monsoon precipitation. It is evident that a number of weather systems, such as Arctic variability, the Siberian High and Western Pacific Subtropical High and the complex Asian geography, i.e. the Tibetan plateau, have had a significant effect on the distribution of Monsoon rainfall. The Arctic ice, which governs the SH weather system, is controlled by the EAWM. The EASM is influenced by the western shift in the WPSH and, consequently, by the distribution and variability of monsoon precipitation. Overly frequent monsoon floods in areas of South East Asia have remained a problem to overcome in recent years. Understanding and predicting changes in the pattern of mountains will be crucial to managing floods that endanger millions of people, the loss of life and property, environmental and agricultural destruction and long-term food security effects.

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