Monsoons: monsoon and southern hemisphere

Science, Geography

MONSOONS Topic sentence-“ This essay will focus upon the both the beneficial and the detrimental impacts of monsoonal weather systems in the Asia pacific region. ”

INTRODUCTION:

Monsoons are an annually recurring weather phenomenon, triggered by the earth’s tilt in relation to the sun. Although they return every year, it is still impossible to tell the timing, duration, and quantity of rain each season, a fact that leaves impacted areas without accurate storm information

The major monsoon systems of the world consist of the West African and Asia-Australian monsoons. The wind generally blows for six months from the northeast and six months from the southwest. A major wind system that seasonally reverses its direction—such as one that blows for approximately six months from the northeast and six months from the southwest. The most prominent monsoons occur in South Asia, Africa, Australia, and the Pacific coast of Central America. Monsoonal tendencies also are apparent along the Gulf Coast of the United States and in central Europe; however, true monsoons do not occur in those regions.

ORIGINS:

Strengthening of the Asian monsoon has been linked to the uplift of the Tibetan Plateau after the collision of the Indian sub-continent and Asia around 50 million years ago. [9] Many geologists believe the monsoon first became strong around 8 million years ago based on records from the Arabian Sea and the record of wind-blown dust in the Loess Plateau of China. More recently, plant fossils in China and new long-duration sediment records

from the South China Sea led to a timing of the monsoon starting 15-20 million years ago and linked to early Tibetan uplift. 10] Testing of this hypothesis awaits deep ocean sampling by the Integrated Ocean Drilling Program

STRUCTURE:

CAUSES/PROCESS:

SUMMER MONSOONS:

When the Sun rays fall on the Earth, they get reflected by the land and cause heating of the air present above it. The water sources like oceans, rivers, etc. , absorb this heat from the air, due to which the air present above these water sources is relatively cool. * Example is the zone of Asia, where major part of the northern hemisphere is land and southern hemisphere is ocean.

During summers, the Earth makes a perfect angle with the Sun; as a result, the Sun rays directly strike on the northern hemisphere landmass. These Sun rays get reflected and cause warming of the air. This hot air rises up into the atmosphere and the cooler air of the southern hemisphere from the ocean rush to fill the gap. This cool air contains moisture which is the main source of summer rains in Asia. This process is known as summer monsoon or southwest monsoon.

WINTER MONSOONS:

Sun rays are more dominant at the southern hemisphere. They are completely reverse of summer monsoons as the lands are cooler than the oceans.

The air circulation is completely opposite as the warm air moves from ocean to land and cold air move from land to ocean. This cold air entraps the moisture when they pass over the tropical waters and releases the moisture over northern Australia, Sri Lanka, the Indian coast and Indonesia. They are also known as north-east monsoons.

IMPACTS:

Over 60% of the world’s population depend on monsoon rains, but despite their regularity, there are year-to-year variations which place enormous strain onfoodand water resources. Food production in seasonally arid areas is inherently risky.

By the end of the dry season, the soil is parched and planting cannot begin until the rains arrive. A late or weak monsoon can lead to a short r poor growing season and hence low yields, as happened during the drought of 1987. An excessively strong monsoon can be just as detrimental. For example, in Pakistan, heavy rain during September 1992 flooded cotton plantations and caused the crop to fail. Agriculturalfailurehas a profound effect on the economy of monsoon-affected countries, such as India, where farming accounts for 30% of the gross domestic product and 67% of the workforce.

BENEFITS: paragraph3 * The benefits of monsoon rain are immense - they provide water for a country whose dry, arid climate destroys and dries out the water supply. In the hotter and drier months of the year in India, people are sometimes forced to travel by foot for miles just to get clean water for

their families. Some just collapse from heat stroke and lack of energy. The monsoons change this - the water from the monsoon rain saves lives.

DESTRUCTIVE POTENTIAL:

Monsoons can put communities in danger.

The winds can knock down trees and even do some damage to people's houses or buildings - windows may be broken and trees may fall on houses. The floods also cause people serious problems. People may be walking down the street, wading through waist-deep water. The floods from the extreme rain can spread bacteria as well. The dirty water that hundreds of other people have been wading through can be a good breeding ground for harmful bacteria and it helps spread deadly diseases. Mosquitoes breed in water, so there might be an over-population of mosquitoes that can carry diseases, as well.