**Monsoons**

A monsoon is a seasonal change in the direction of the prevailing, or strongest, winds of a region. Monsoons cause wet and dry seasons throughout much of the tropics. Monsoons are most often associated with the Indian Ocean.

Monsoons always blow from cold to warm regions. The summer monsoon and the winter monsoon determine the climate for most of India and Southeast Asia.

**Summer Monsoon**

The summer monsoon is associated with heavy rainfall. It usually happens between April and September. As winter ends, warm, moist air from the southwest Indian Ocean blows toward countries like India, Sri Lanka, Bangladesh, and Myanmar. The summer monsoon brings a humid climate and torrential rainfall to these areas.

India and Southeast Asia depend on the summer monsoon. Agriculture, for example, relies on the yearly rain. Many areas in these countries do not have large irrigation systems surrounding lakes, rivers, or snowmelt areas. Aquifers, or supplies of underground water, are shallow. The summer monsoon fills wells and aquifers for the rest of the year. Rice and tea are some crops that rely on the summer monsoon. Dairy farms, which help make India the largest milk producer in the world, also depend on the monsoon rains to keep cows healthy and well-fed.

Industry in India and Southeast Asia also relies on the summer monsoon. A great deal of electricity in the region is produced by hydroelectric power plants, which are driven by water collected during the monsoons. Electricity powers hospitals, schools, and businesses that help the economies of these areas develop.

When the summer monsoon is late or weak, the regions economy suffers. Fewer people can grow their own food, and large agribusinesses do not have produce to sell. Governments must import food. Electricity becomes more expensive, sometimes limiting development to large businesses and wealthy individuals. The summer monsoon has been called Indias true finance minister.

Heavy summer monsoons can cause great damage. Residents of such urban areas as Mumbai, India, are used to the streets flooding with almost half a meter (1.5 feet) of water every summer. However, when the summer monsoon is stronger than expected, floods can devastate the region. In cities like Mumbai, entire neighborhoods can be drowned. In rural areas, mudslides can bury villages and destroy crops.

In 2005, a strong monsoon devastated western India. As the summer monsoon blew in from the southwest, it first hit the state of Gujarat. More than 100 people died. Then, the monsoon rains hit the state of Maharashtra. Flooding in Maharashtra killed more than 1,000 people. On July 26, 2005, the city of Mumbai, Maharashtra, received almost a meter (39.1 inches) of rain.

**Winter Monsoon**

The Indian Oceans winter monsoon, which lasts from October to April, is less well-known than its rainy summer equivalent. The dry winter monsoon blows from the northeast. These winds start in the air above Mongolia and northwestern China.

Winter monsoons are less powerful than summer monsoons in Southeast Asia, in part because the Himalaya Mountains prevent much of the wind and moisture of the monsoons from reaching the coast. The Himalayas also prevent much of the cool air from reaching places like southern India and Sri Lanka, keeping them warm all year. Winter monsoons are sometimes associated with droughts.

Not all winter monsoons are dry, however. Unlike the western part of Southeast Asia, the eastern, Pacific coast of Southeast Asia experiences its rainy season in the winter. The winter monsoon brings moist air from the South China Sea to areas like Indonesia and Malaysia.

**Other Monsoons**

The Asian-Australian monsoon, which includes the Indian Ocean, stretches from northern Australia to Russias Pacific coast. This huge monsoon wind system then stretches into the Indian Ocean. Finally, it reaches its end on the Indian coast of Africa.

Monsoon winds exist in other parts of the world, too. The North American monsoon happens once a year, usually in the middle of summer. Warm, moist air from the Gulf of California blows northeast, while warm, moist air from the Gulf of Mexico blows northwest. These two winds meet over the Sierra Madre Occidental mountains in central Mexico. The monsoon brings moisture to the mountain ecosystem before continuing north to the U.S. states of Arizona, New Mexico, and Texas.

The North American monsoon can be a natural aid to firefighters. Summer temperatures in Arizona regularly reach more than 100 degrees Fahrenheit, making wildfires difficult to contain. The North American monsoon is also the primary water source for most desert ecosystems in the region. However, it can also confuse and interrupt daily life for people and businesses not used to dealing with heavy rain.