

BAHRIA COLLEGE ISLAMABAD

(ZAFAR CAMPUS)

Social Studies
(Class VIII)

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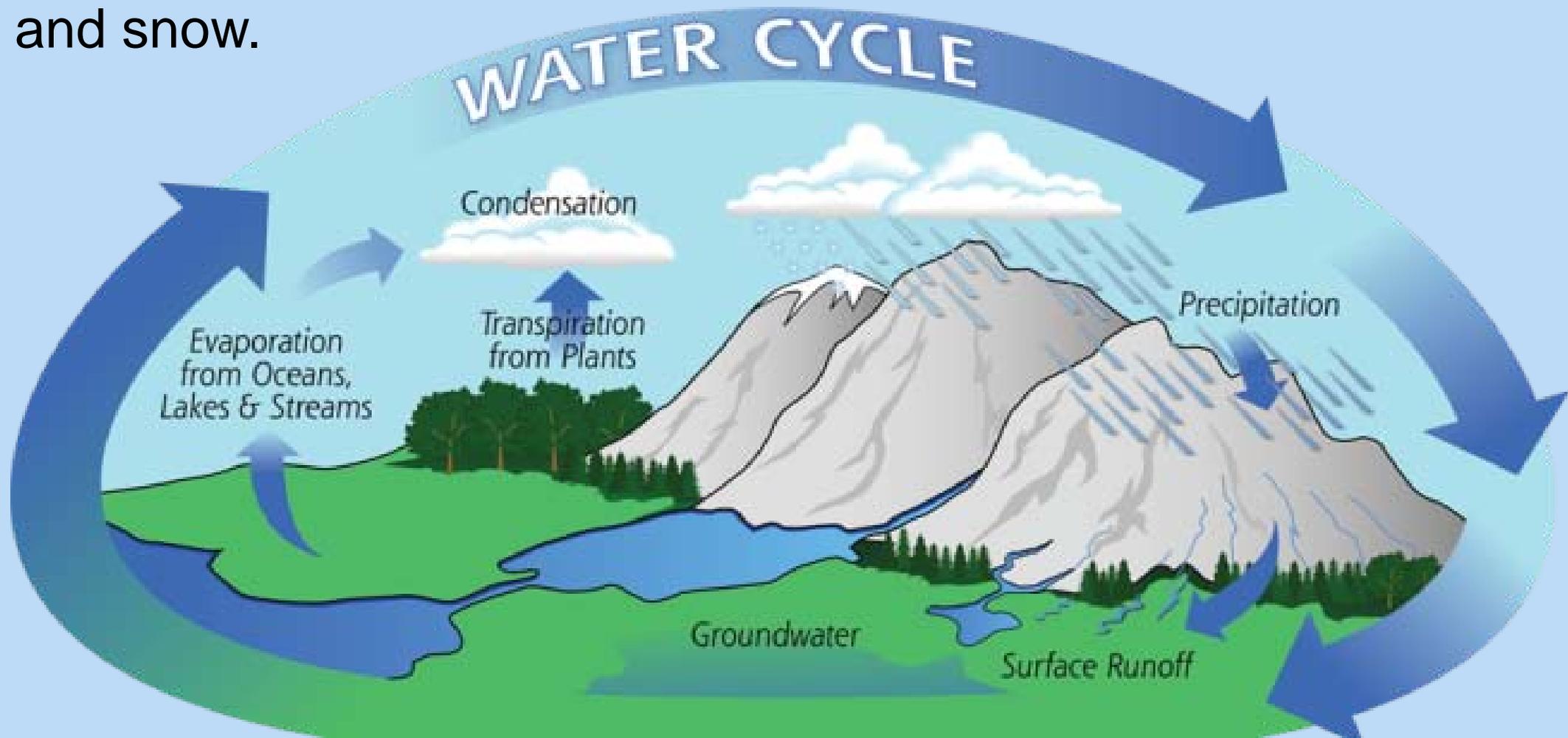
LECTURE SLIDES

CHAPTER- 2

CHAPTER- 3

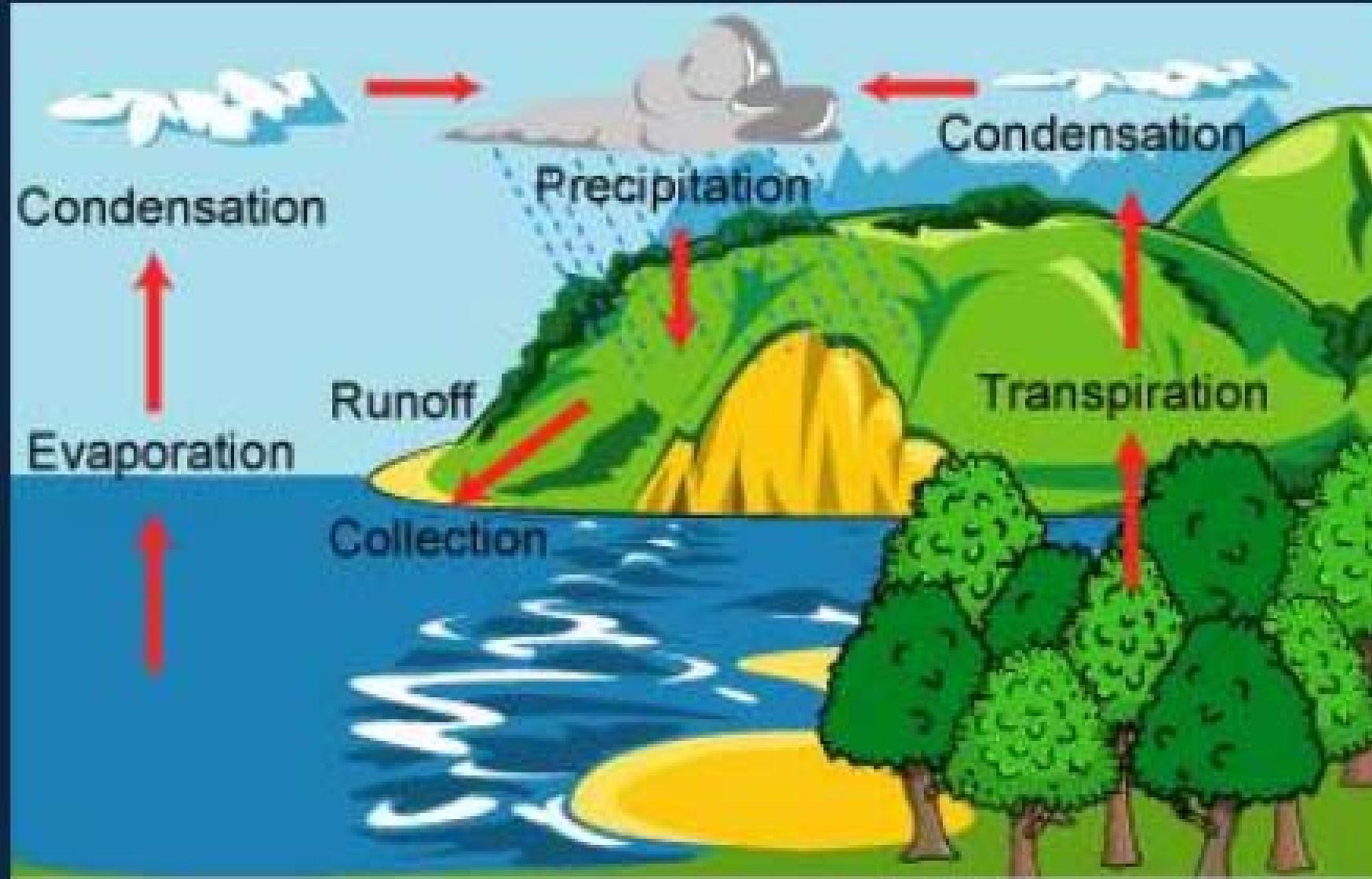
The **water cycle**

The **water cycle** shows the continuous movement of **water** within the Earth and atmosphere. Liquid **water** evaporates into **water** vapour, condenses to form clouds, and precipitates back to earth in the form of rain and snow.



COMPONENTS OF THE WATER CYCLE

- Evaporation & Transpiration
- Condensation
- Precipitation
- Infiltration
- Collection



Stage 1-Evaporation

Evaporation occurs when the sun heats up water in rivers or lakes or the ocean and turns it into vapor or steam. The water vapor or steam leaves the river, lake or ocean and goes into the air.

Condensation



Once the warm gas hits the cooler air it changes back into a liquid and forms a cloud.

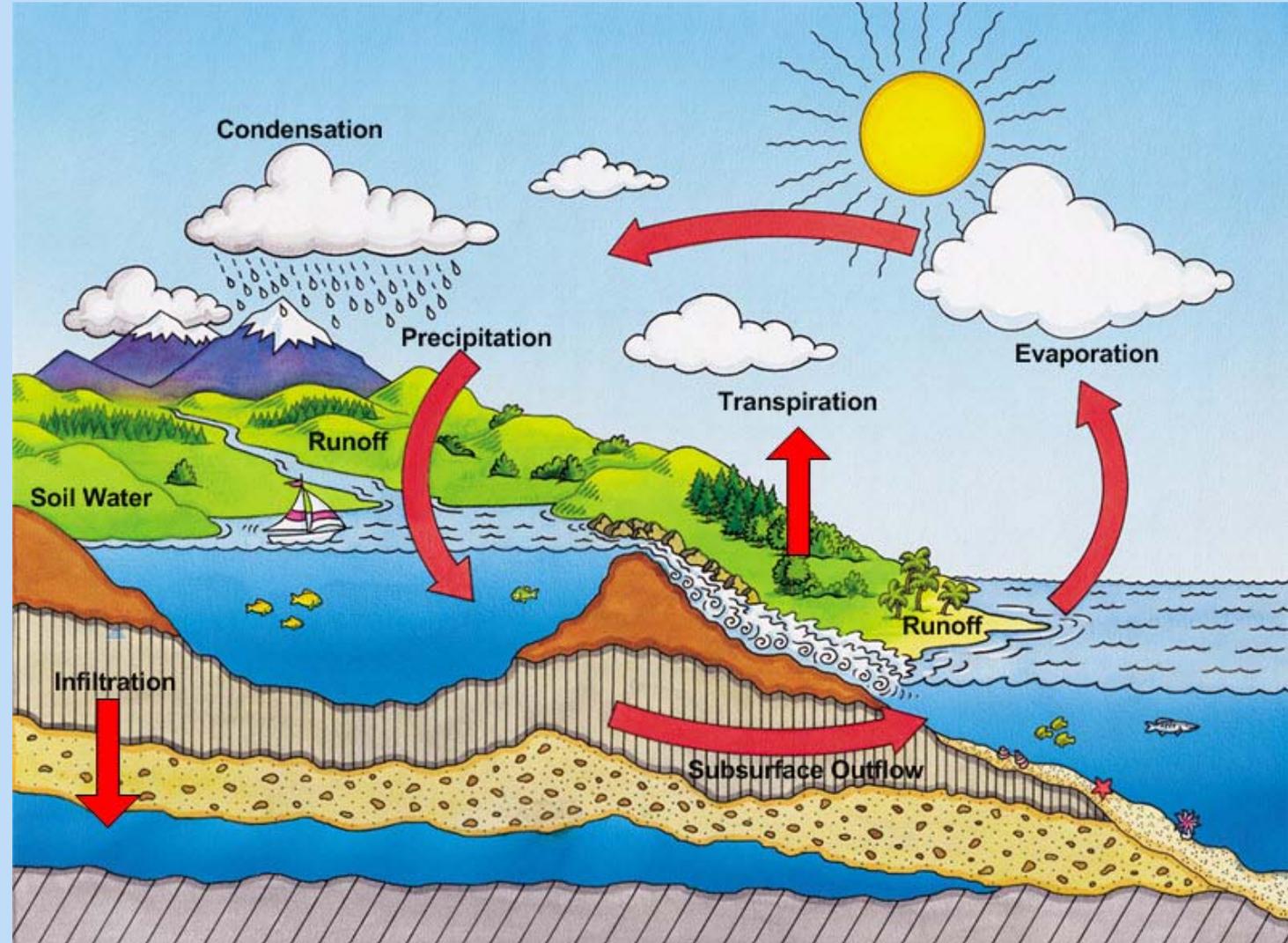
Stage 3: Precipitation

- Those water droplets that **CONDENSE** make up clouds. If those tiny water droplets combine with each other they grow larger and eventually become too heavy to stay in the air. Then they fall to the ground as rain, snow, and other types of precipitation.

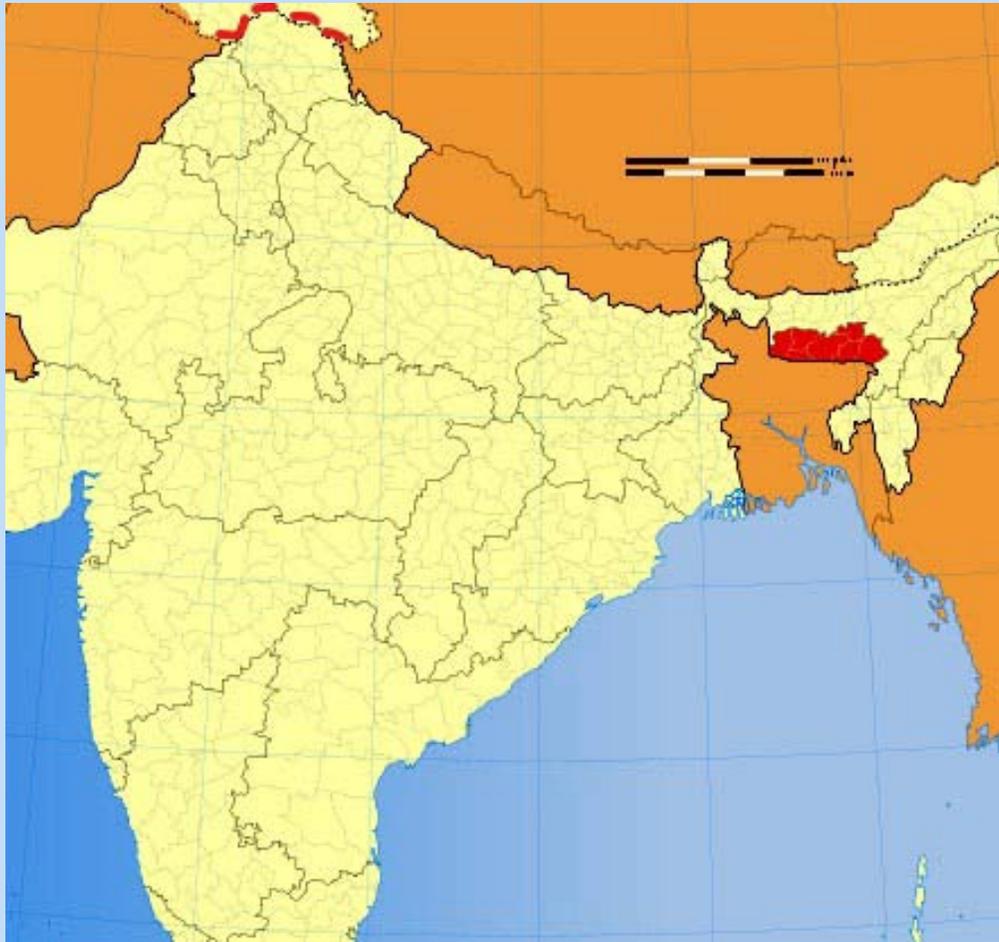
Stage: 4

Collection

The rain, when it falls, does not remain on the ground. 75 % of it goes back to the oceans by running into rivers, or soaking into the ground.



The heaviest rainfall ever recorded: Cherrapunji: (in India)
26,700 mm of rain in one year, 1860-1.



The highest rainfall in a single day was on Reunion Island in the Indian ocean (1870 mm rainfall on 5 and 6 March 1952.)



Atacama Desert: (western coast of Chile)
Driest place on earth,(only 0.5 mm of rain in 43 years)



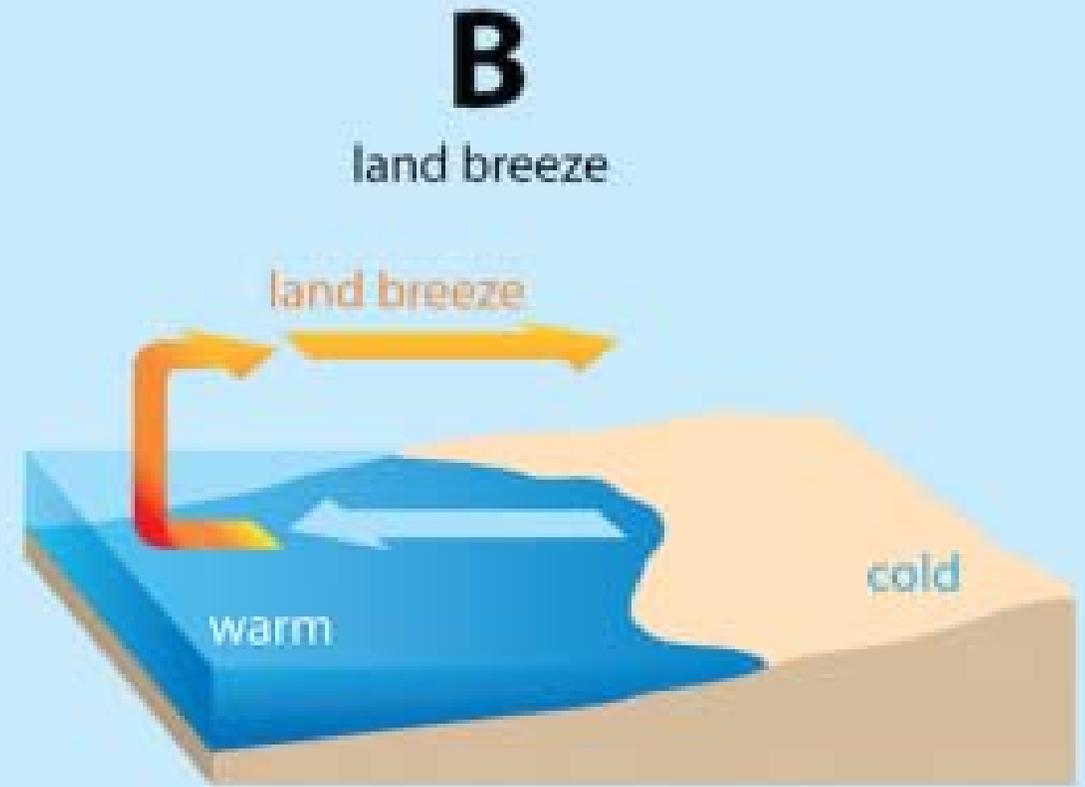
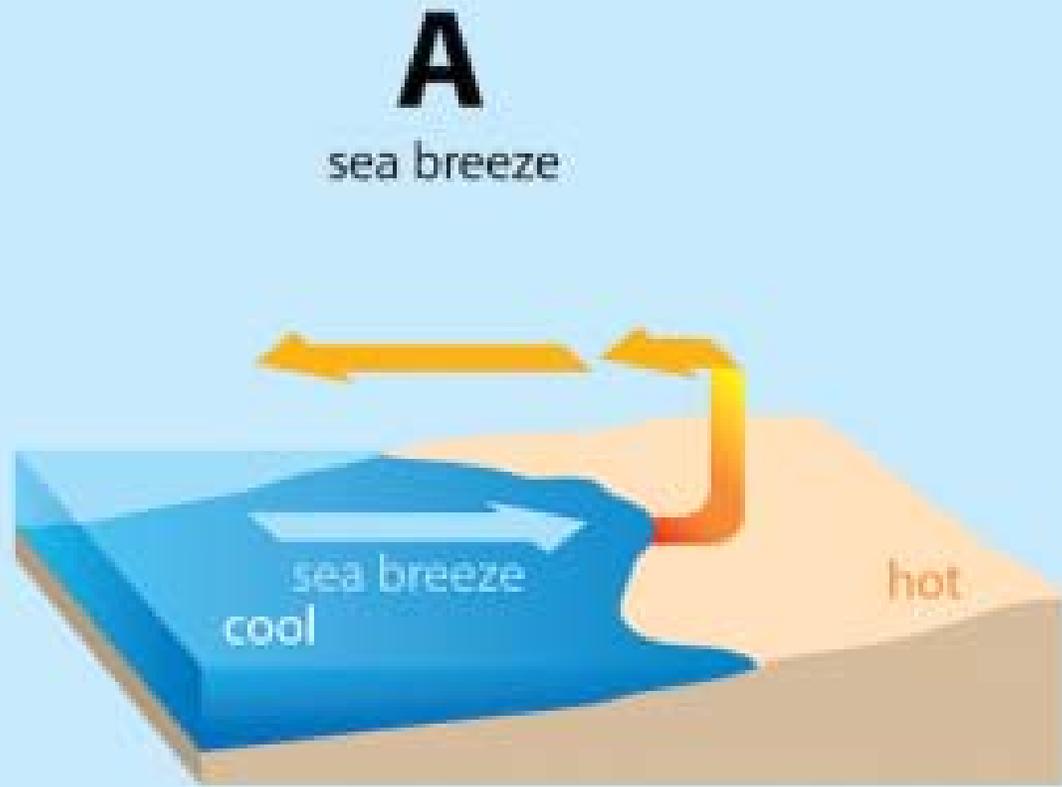
RAINFALL

- The world's average rainfall is about 700 - 800 mm a year, though there are great differences.
- The average rainfall in Pakistan is less than 250 mm a year.

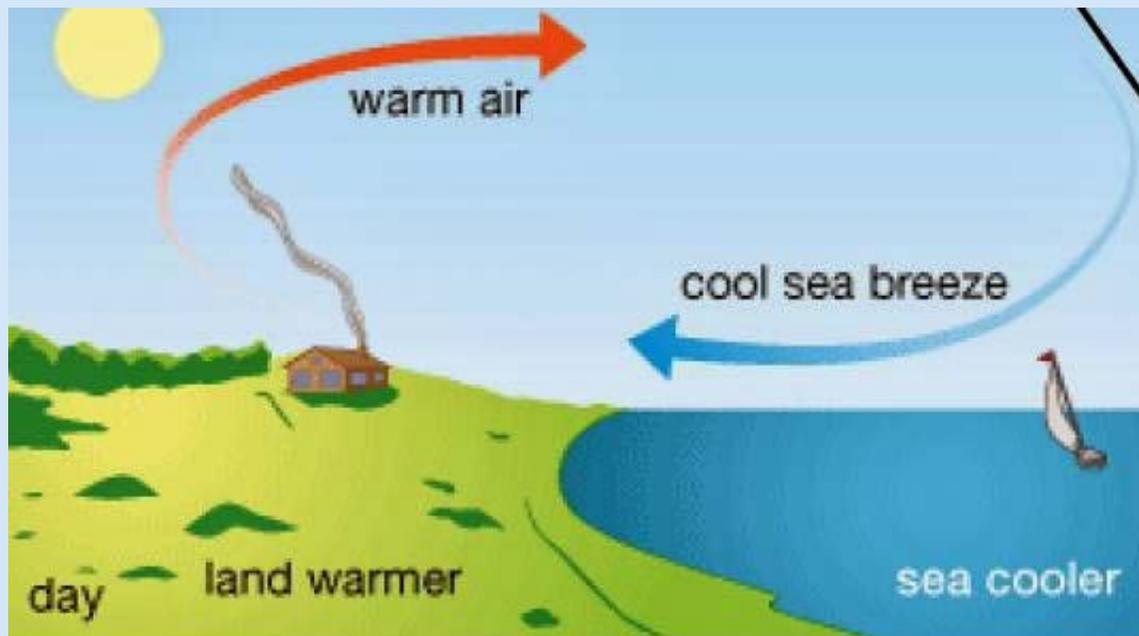
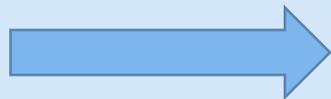
Oceans:

Regulating the Temperature:

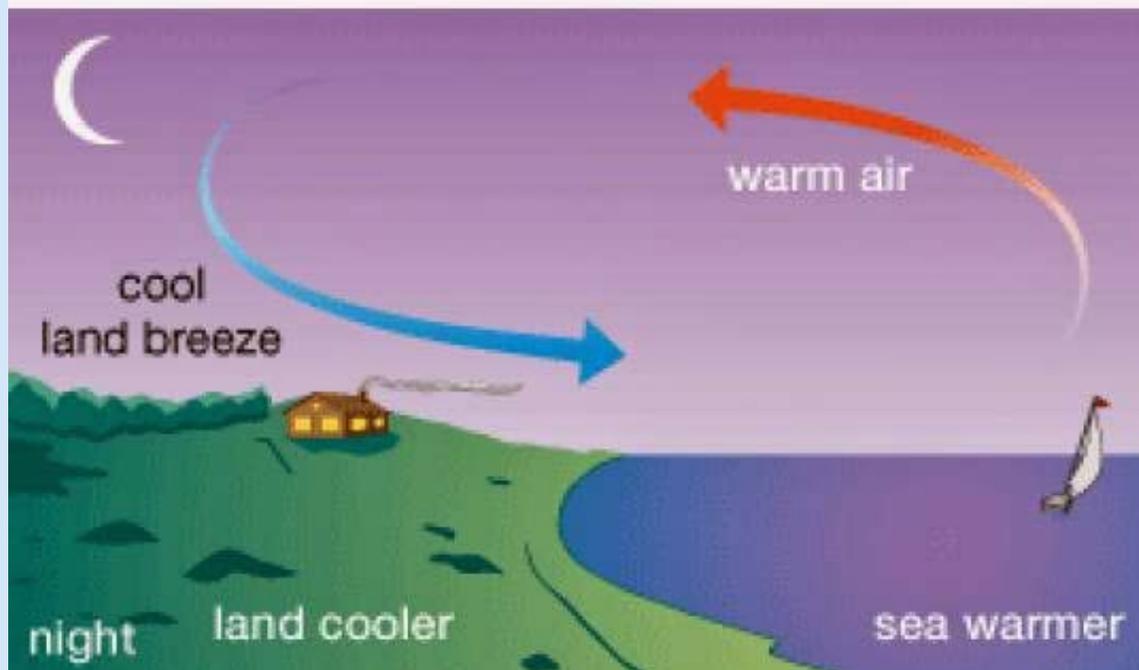
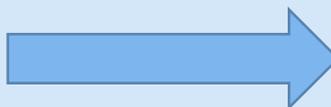
The water in the oceans heats up and cools down much more slowly than the lands. It influence the temperature of the nearby lands.



In Summer:



In Winter:



Distance from the sea and difference in the temperature

	JANUARY	JUNE	Difference
Karachi	17.7° C	31.4° C	13.7° C
Lahore	12.2° C	40.0° C	27.8° C

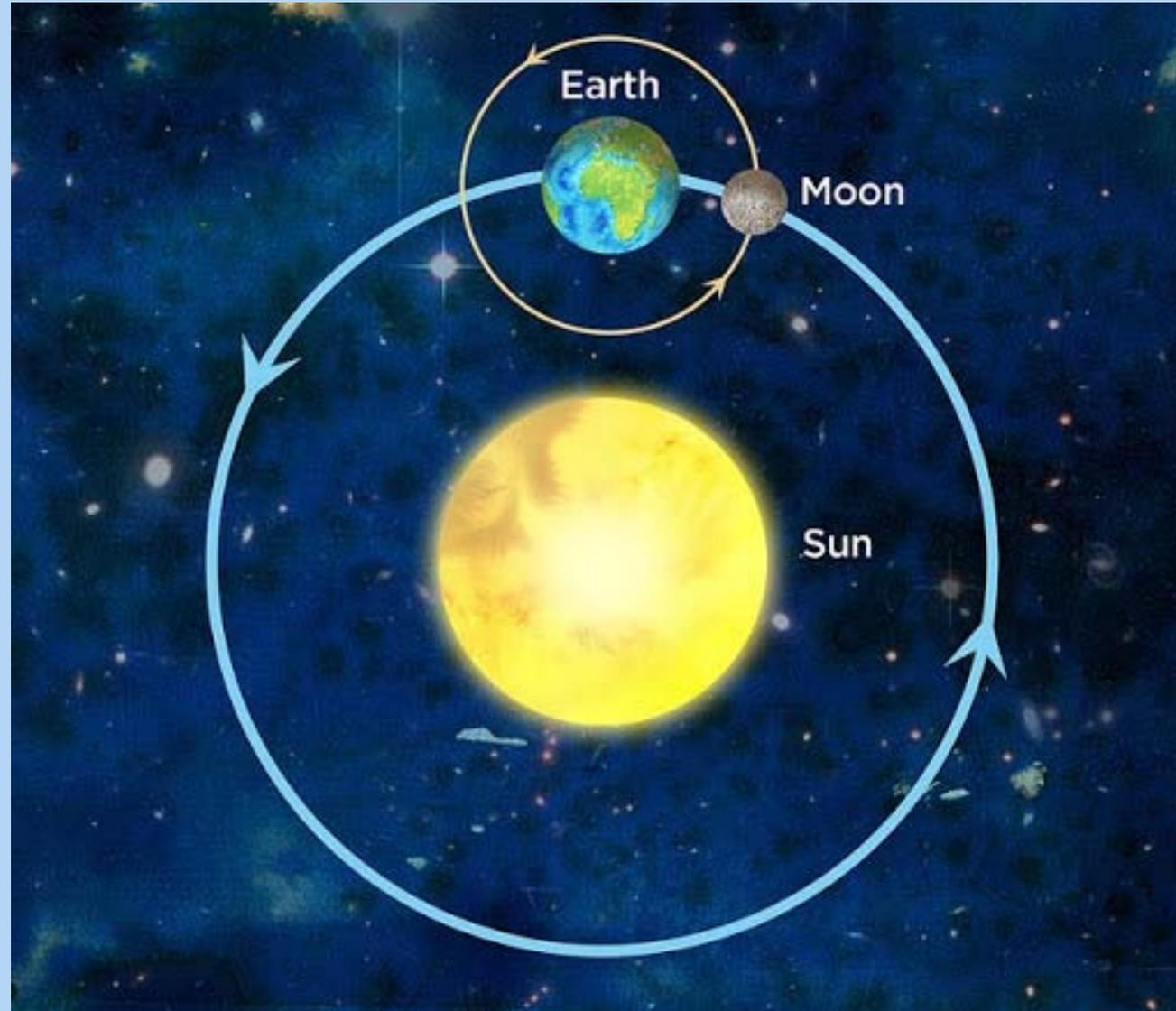
A photograph of the ocean with small, rhythmic waves. The water is a deep blue, and the sky above is a lighter blue with scattered white clouds. The horizon line is visible in the distance.

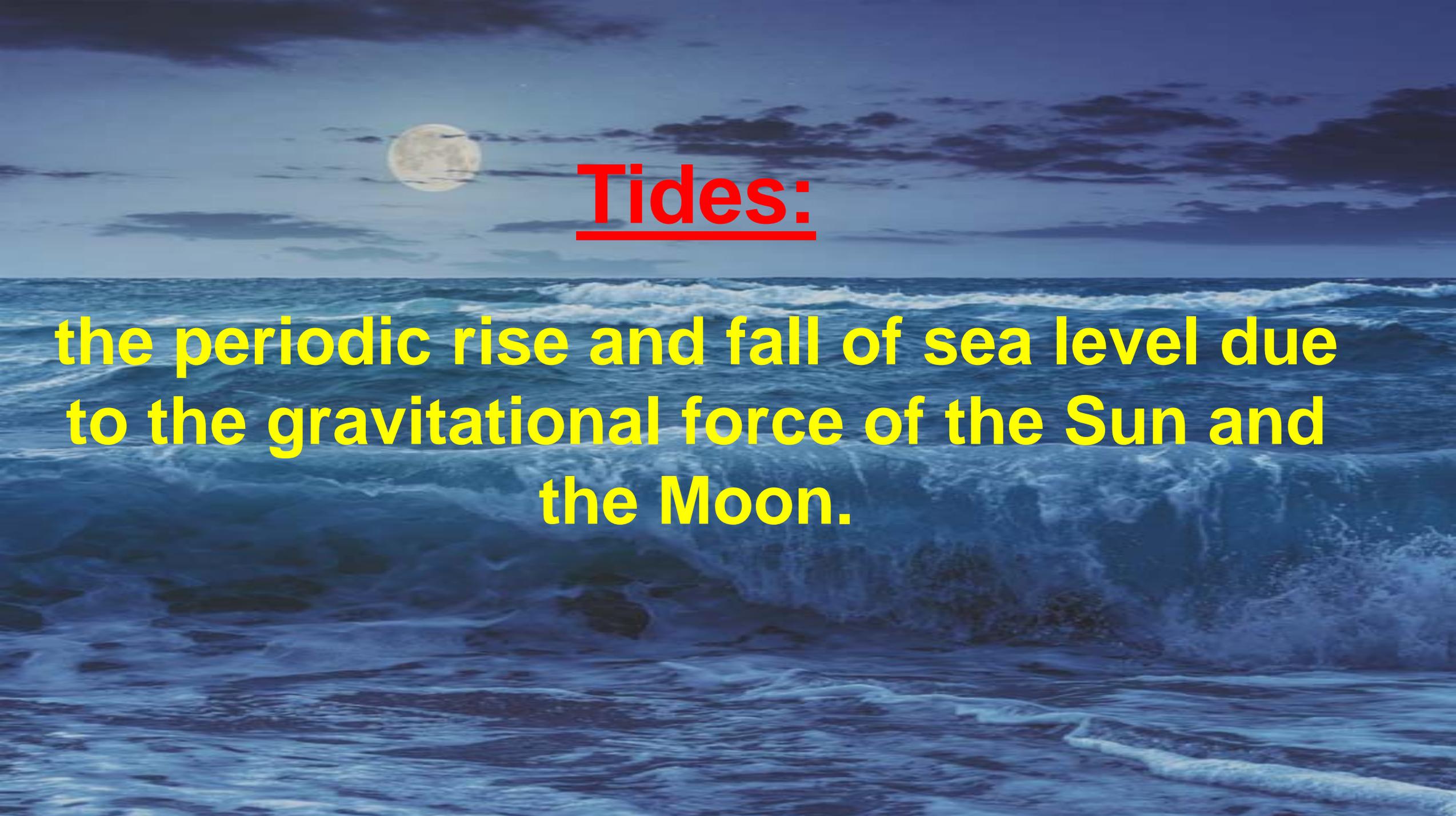
- Ocean Tides

- Ocean Waves

-Ocean Currents

The Sun, Earth and Moon

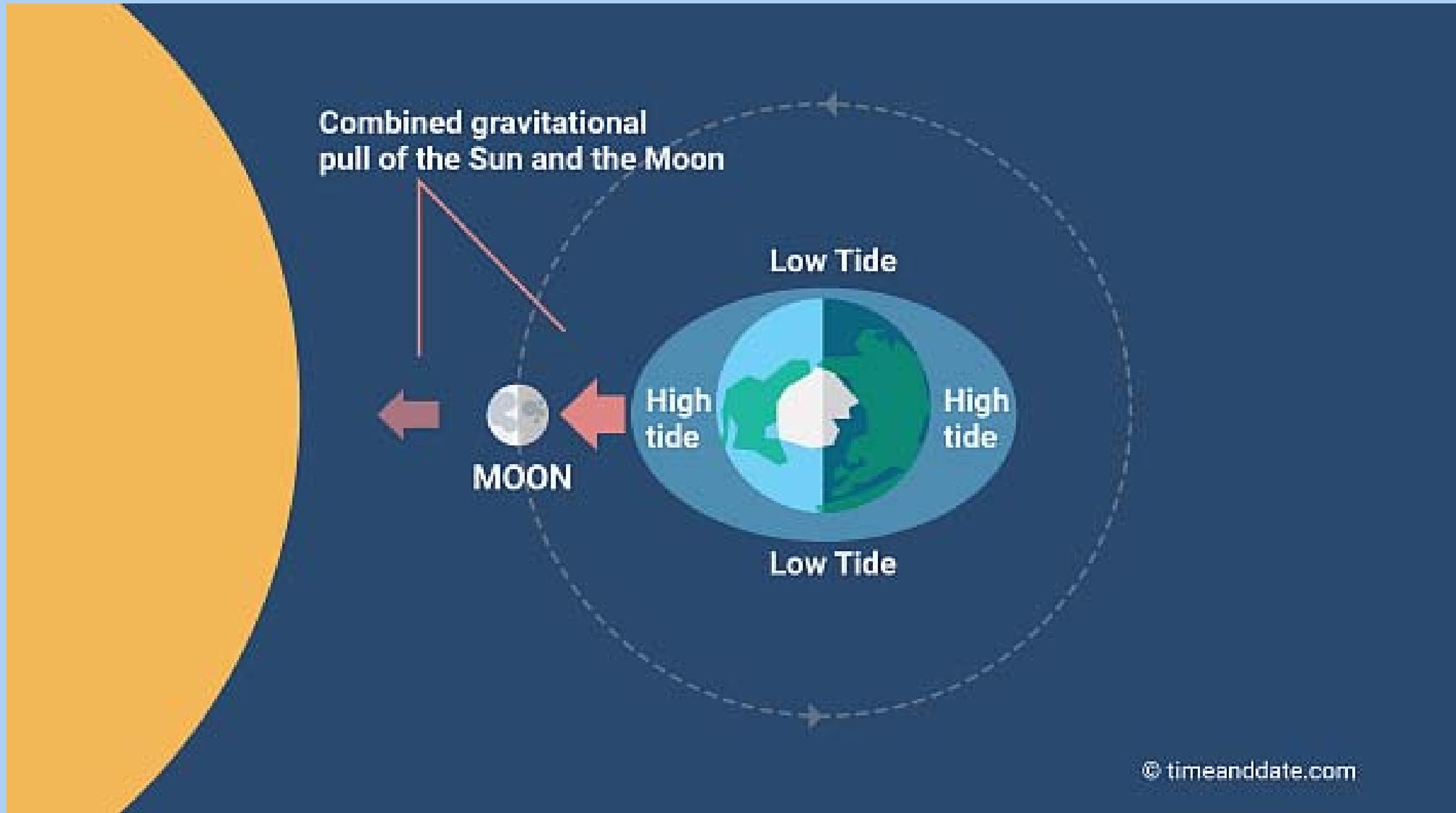




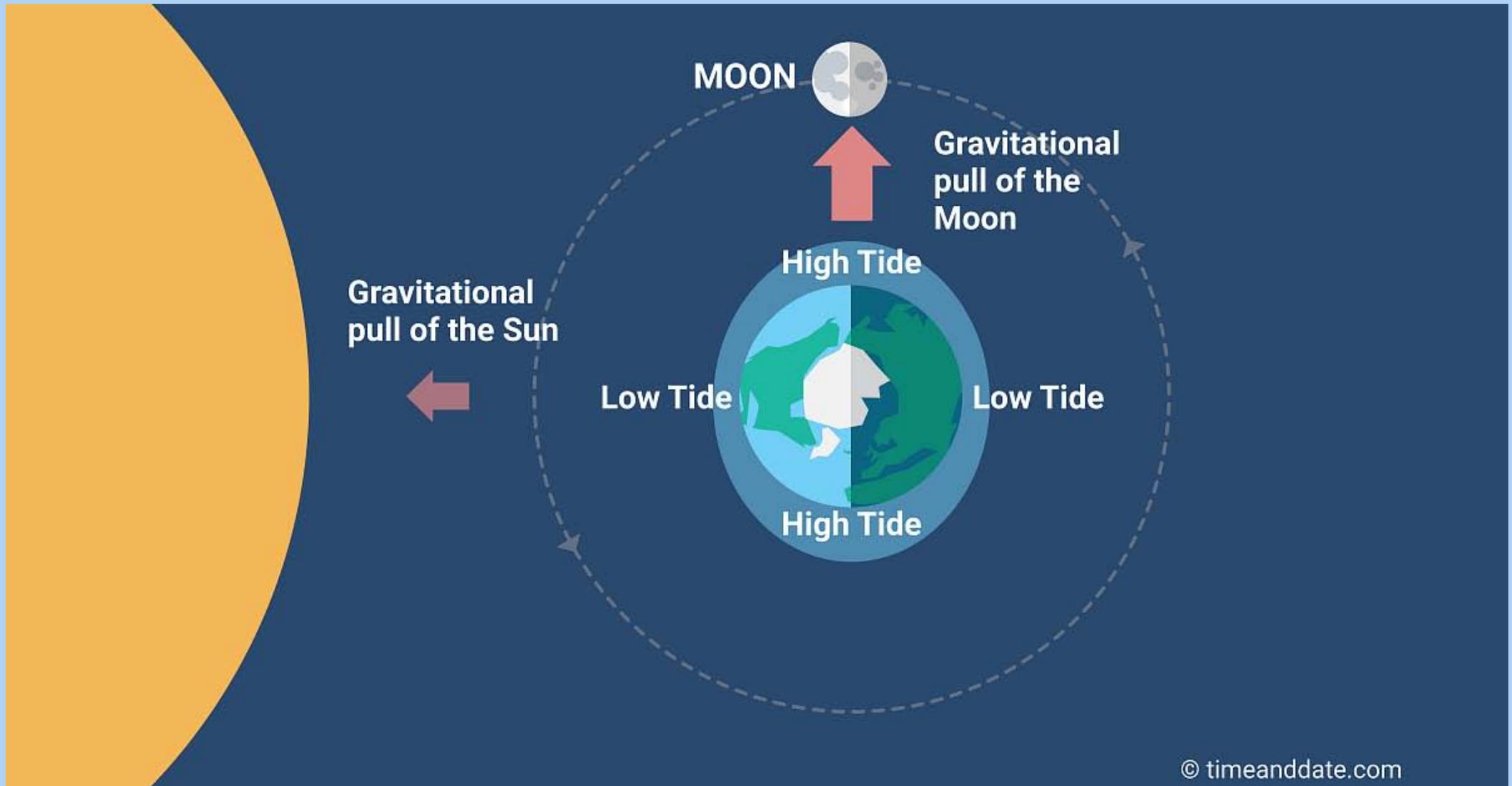
Tides:

the periodic rise and fall of sea level due to the gravitational force of the Sun and the Moon.

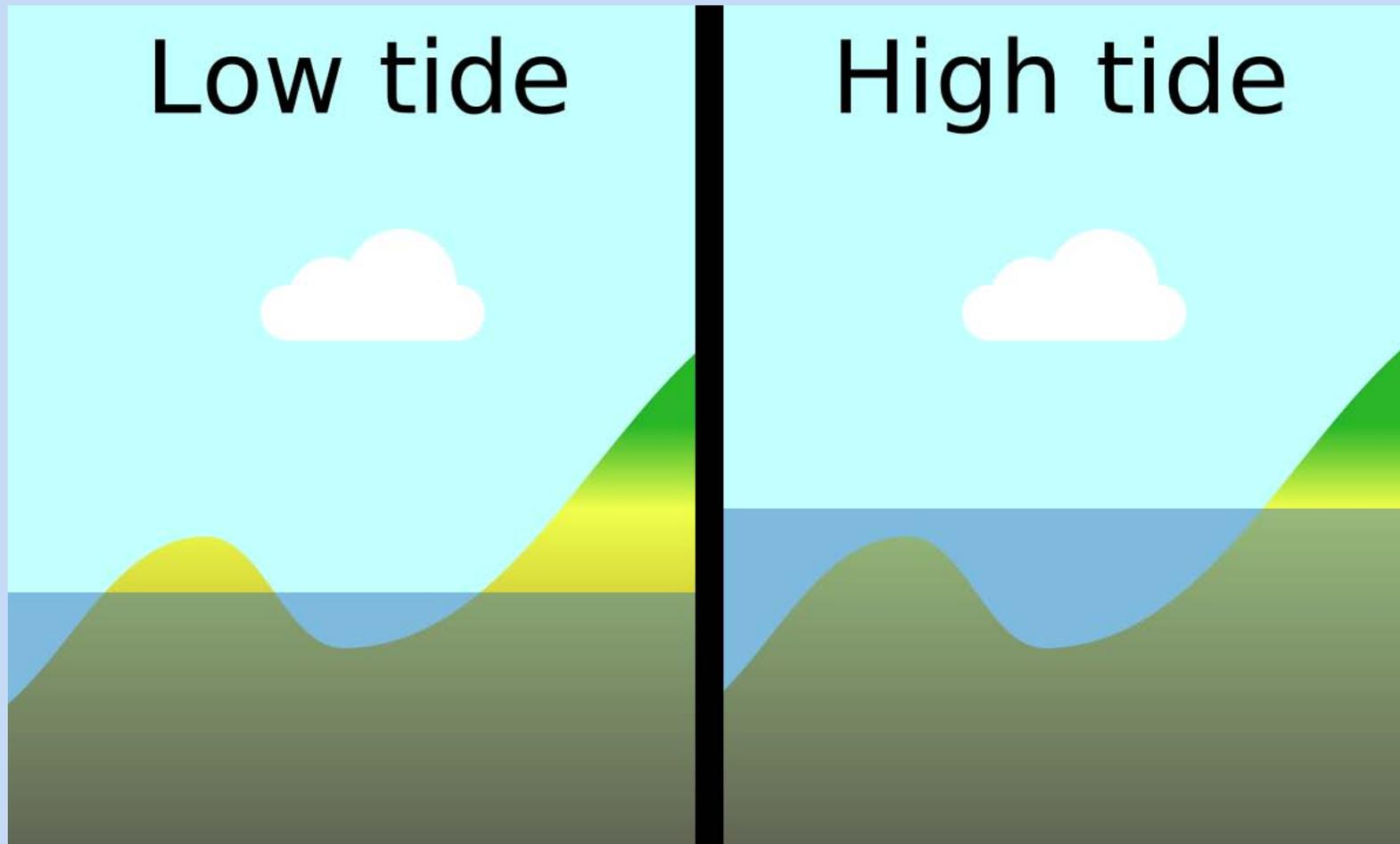
The Sun and the Moon are pulling in the same direction



The Sun and the Moon are pulling against one another:



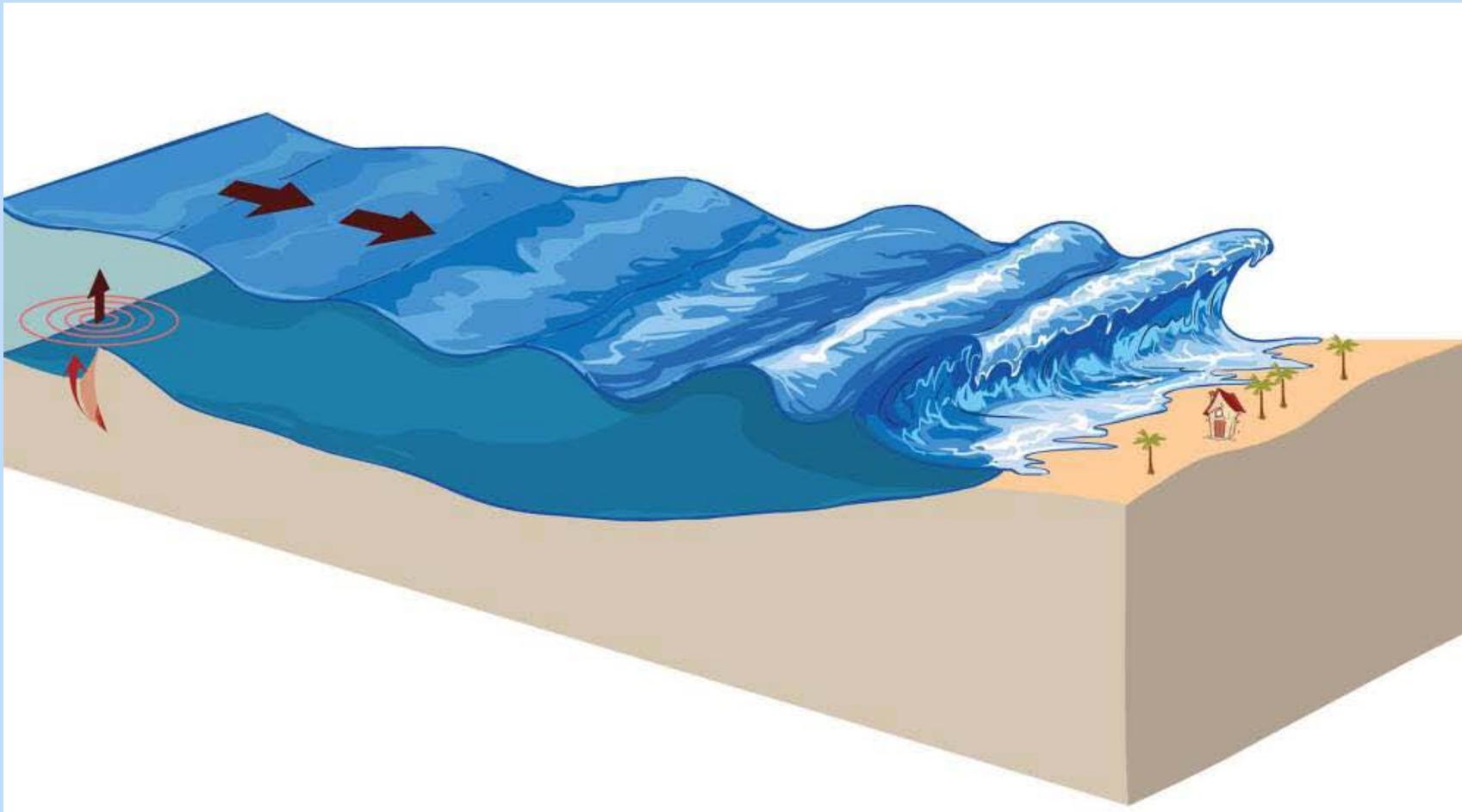
In the mid-ocean the tides are about one to three metres high, but when they come to the coast, there can be a difference of 12 to 15 metres between the high and low tide.



Difference between high and low tide.



Waves: are usually caused by the wind blowing along the surface and pushing the water into ' heaps '.In the waves, the water does not move along, but merely up and down.



In the mid-ocean, waves are usually less than one metre high. But as they near the shore the lower part of the wave is slowed down by the bed of the sea, so the upper part piles up. As the water becomes more and more shallow, the waves may be many metres high.



Waves can do immense damage to the coasts by undermining the cliffs and wearing away the land.

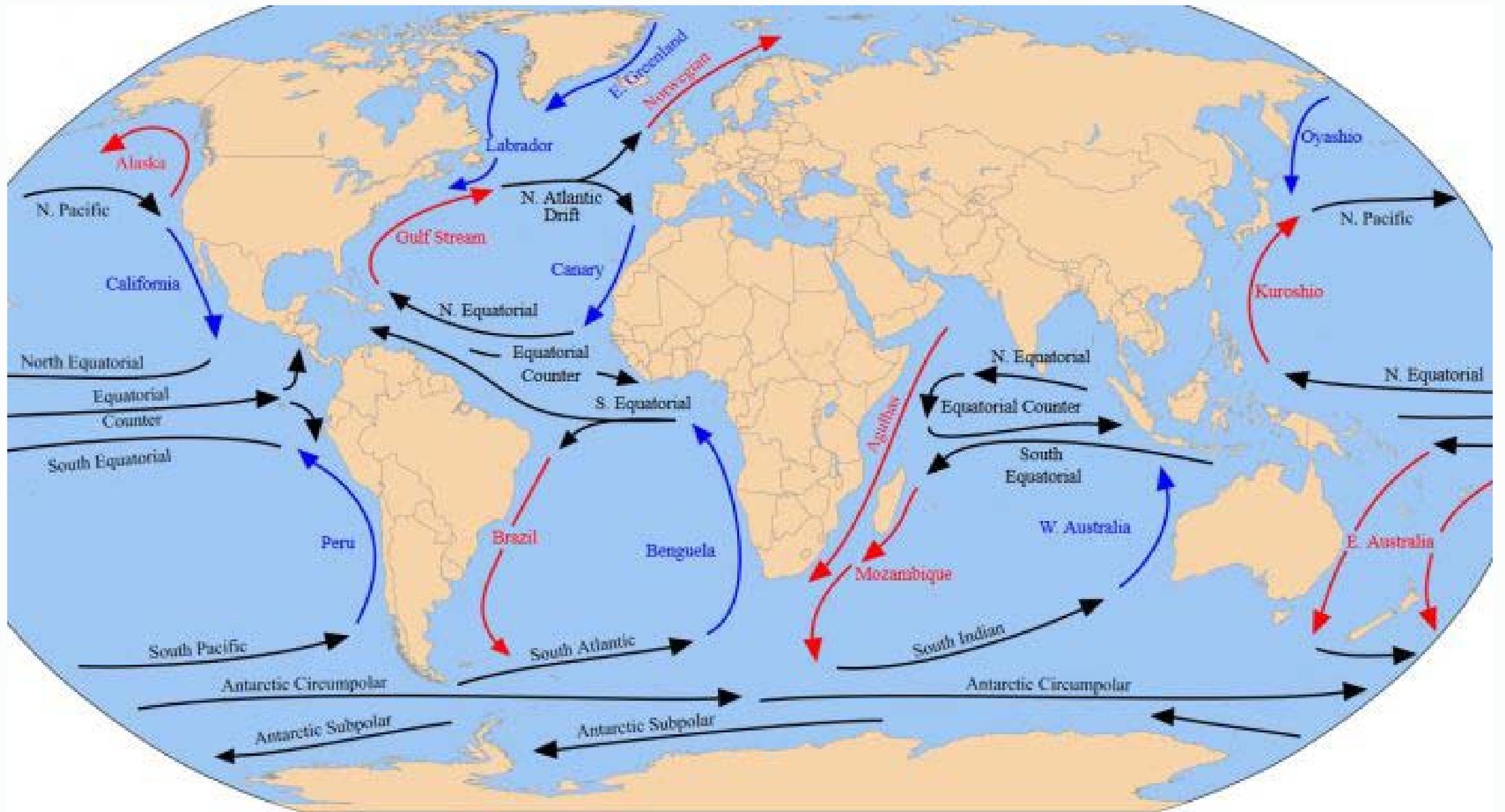


Wave-breaking barriers (huge concrete structures) are placed to slow down and break the force of water.



Ocean Currents

- ◆ Ocean currents are giant rivers of sea water flowing within oceans.
 - ◆ Ocean currents flow in circular paths:
 1. Warm currents carry water from low to high latitudes. These make land nearby warmer.
 2. Cool currents carry water from high to low latitudes. These make land nearby colder.
- 



Effects of ocean currents:

- 1- Currents act like a spoon _ they stir up the water and mix cold and warm, very salty and less salty water.



2- The cold currents coming from the Antarctic are very rich in Plankton and so attract many fish which feed on them.



3- Germination and growth of coconut palms along the Pacific and Indian oceans.



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4- Currents may help people in early times to move about the Earth.



Uses of the Oceans

1- FOOD:

The oceans and seas are a major source of food in the shape of fish and shellfish. It is estimated that 90 million tonnes of fish are caught each year.

-60 % used as human food:

-40% used for making into fishmeal for feeding animals or for processing into fertilizers.



2- Whaling:

- The hunting of whales for their oil, meat, bones and other by-products.



3- Seaweeds:

Seaweed or sea vegetables are forms of algae that grow in the sea.

Seaweed is a source of chemicals such as potassium and iodine.

The most important use of seaweed is a substance called algin.



4- Minerals

- 1- Source of salt in warmer countries:
- 2- Lumps of metal ores:
- 3- Oil and gas



Oil and gas:

Offshore sources of oil are probably very widespread throughout the world but they are difficult to find and it is extremely expensive to get oil out.



Energy in the oceans:

There is enough energy in the oceans--- tides, waves and currents:



Weathering and its main causes:

- **Weathering** is the breakdown of rocks at the Earth's surface, by the action of rainwater, extremes of temperature, and biological activity.
- Weathering is the process by which landforms such as rocks, cliffs, beaches and even soil are eroded, over a period of time.

1- WATER

a)- Streams running down a hill or mountain carry along little pieces of rock. These bump against the bed and sides of the river and break off more particles of rock.



b)- Rain also gets into the cracks in the rocks. When the water freezes, it expands and breaking up the rock.



c)- Rain dissolves gases in the air, especially carbon dioxide and makes a mild acid which dissolves the rocks such as limestone;

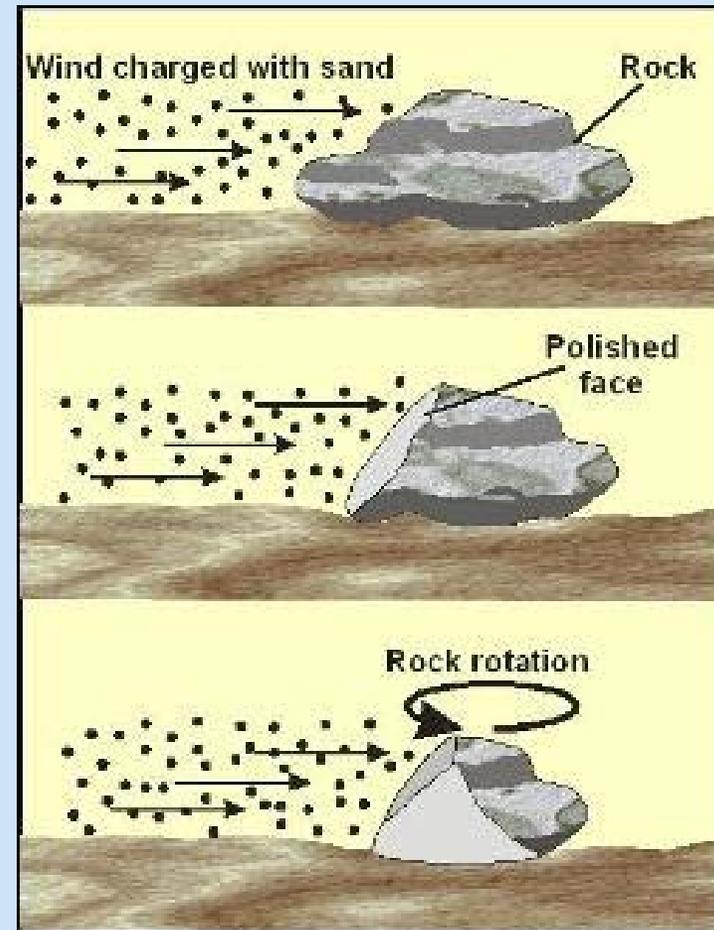


Waves are also an agent of erosion along the shores:



2- WINDS:

Strong winds carry along tiny particles of rock as sand and wear away the rocks they hit.



3- Sunshine

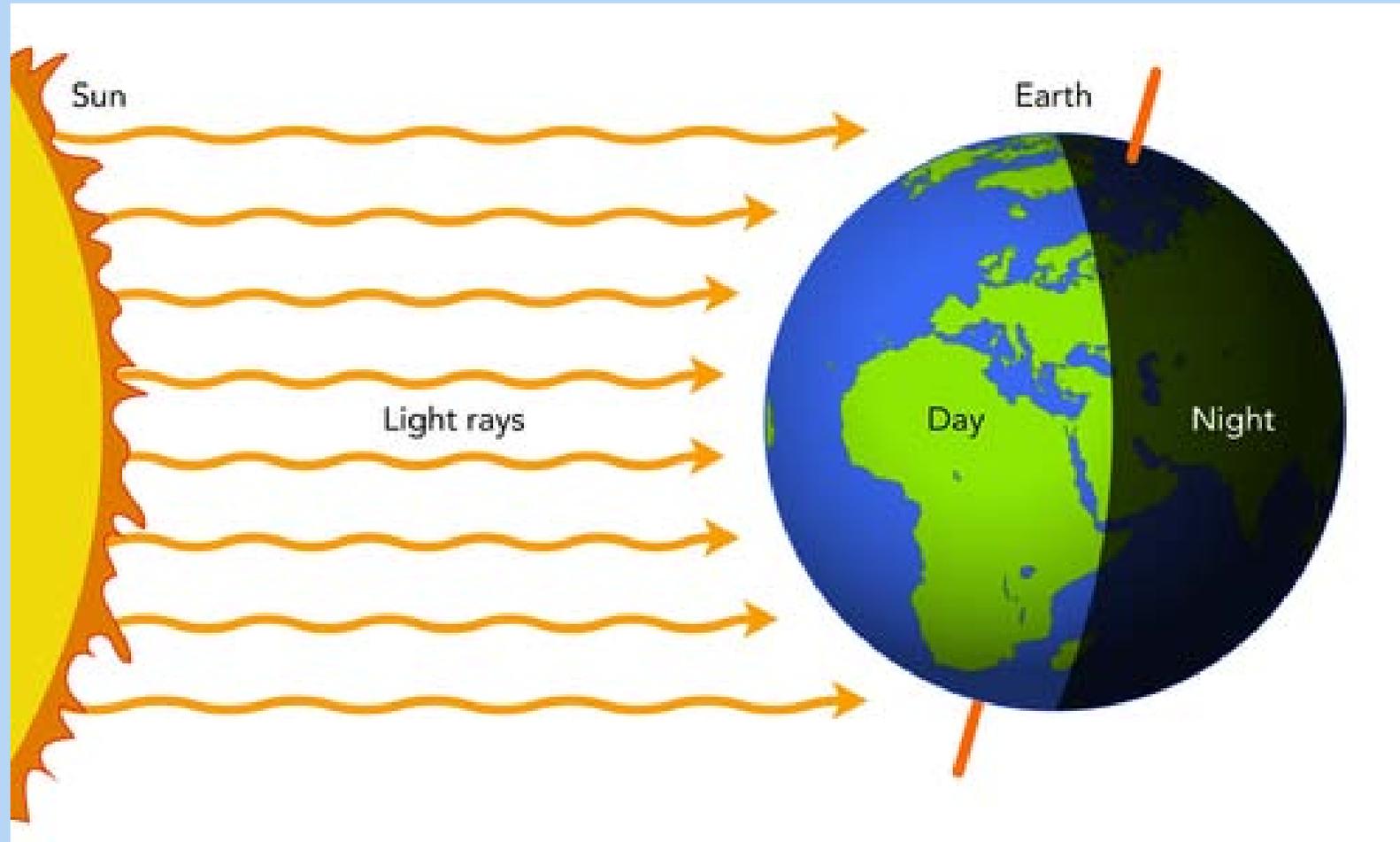
The Sun heats up the rock in the day time, but at night it cools rapidly. This constant heating and cooling, expansion and contraction, eventually breaks up the rock.



Chapter:3- Major Climatic Regions of the World



If our world were a plain, smooth ball of rock or water the climate would be simple— hot around the equator and getting colder and colder towards the poles.

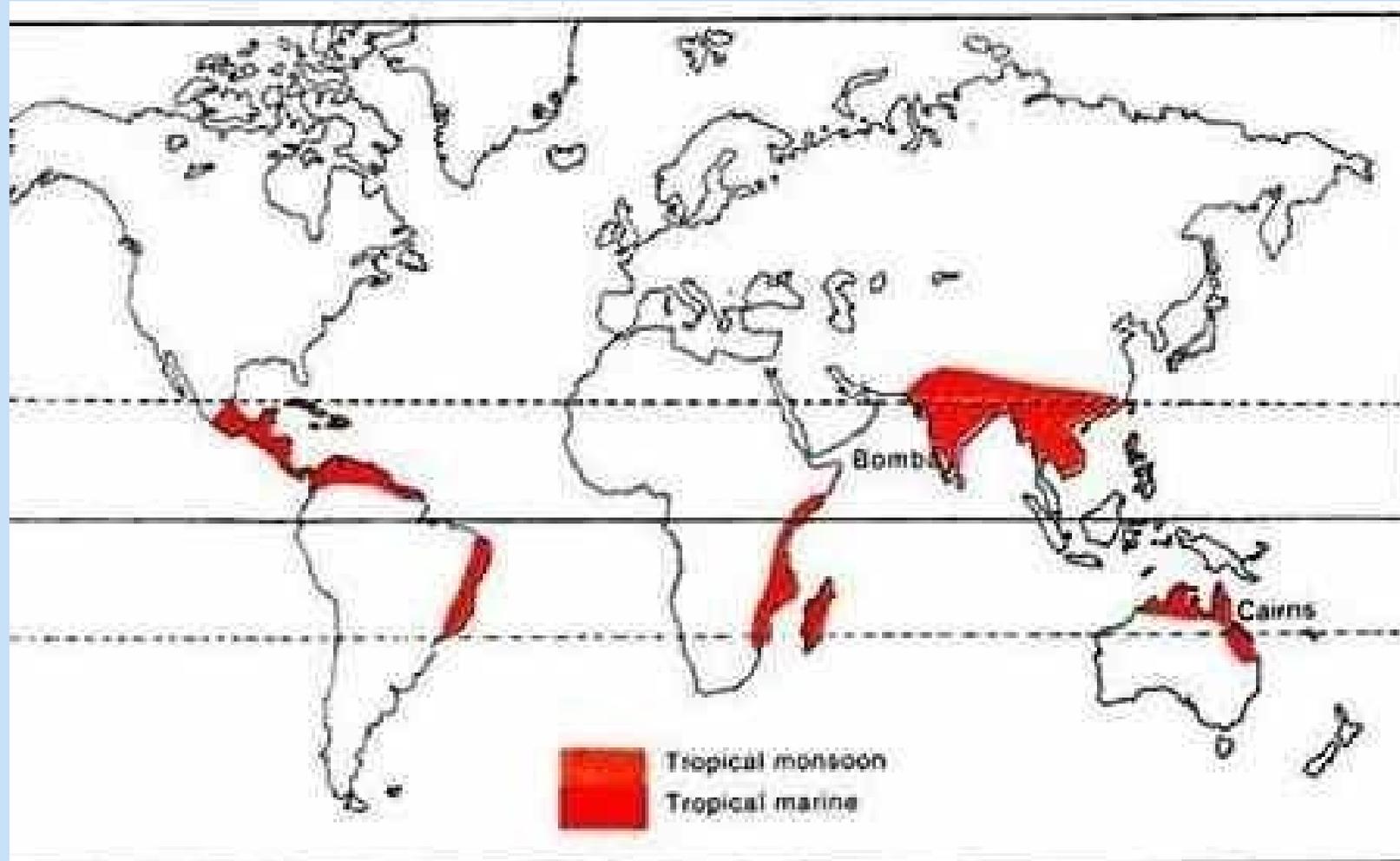


- These are the main climatic regions of the world:
 - Monsoon climatic region
 - Mediterranean climatic region
 - Tundra region
 - Equatorial region
 - Temperate grass lands

Monsoon climate

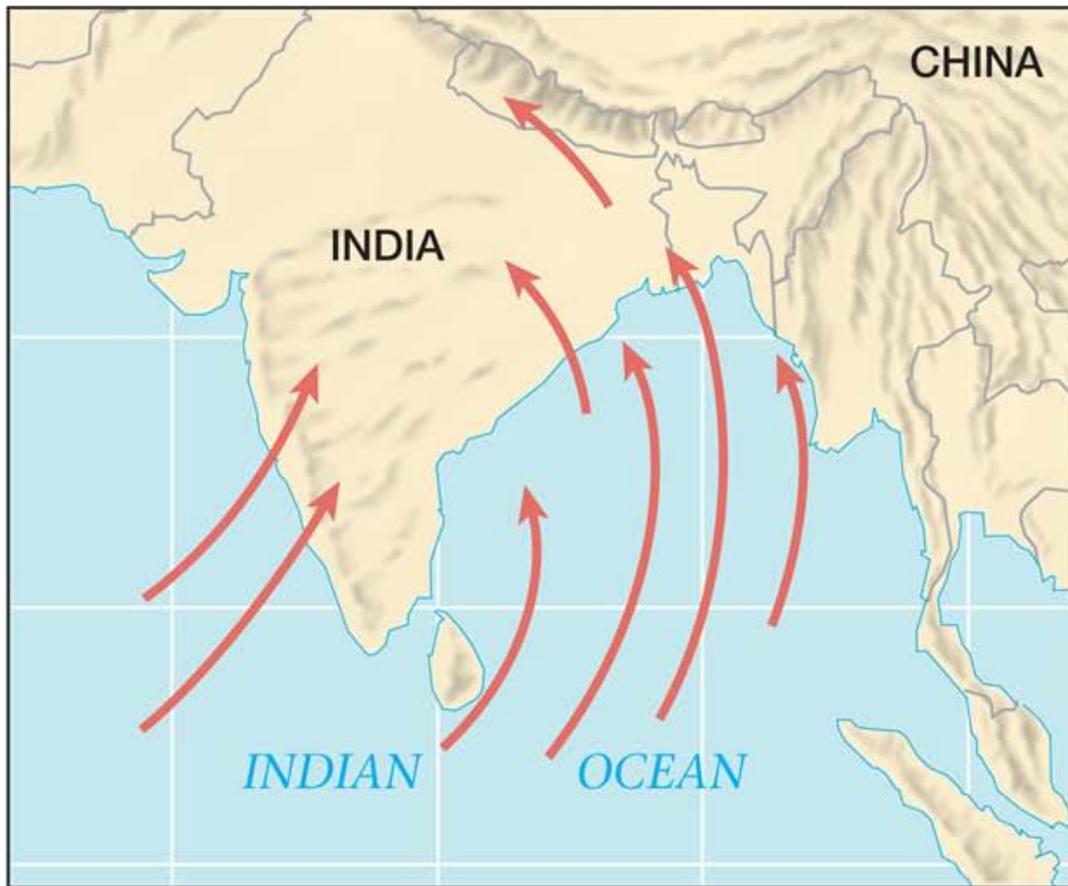
- A monsoon climate is one in which the wind blows from one direction (often south-west) for half the year and from opposite direction (north-east) for the other half. Monsoons are really land and sea breezes on a huge scale.
- Monsoon climates are found mainly in the subcontinent and South-east Asia, though there are very small areas in western Australia, western Africa and southern USA that have such a climate.

Monsoon Regions in the world

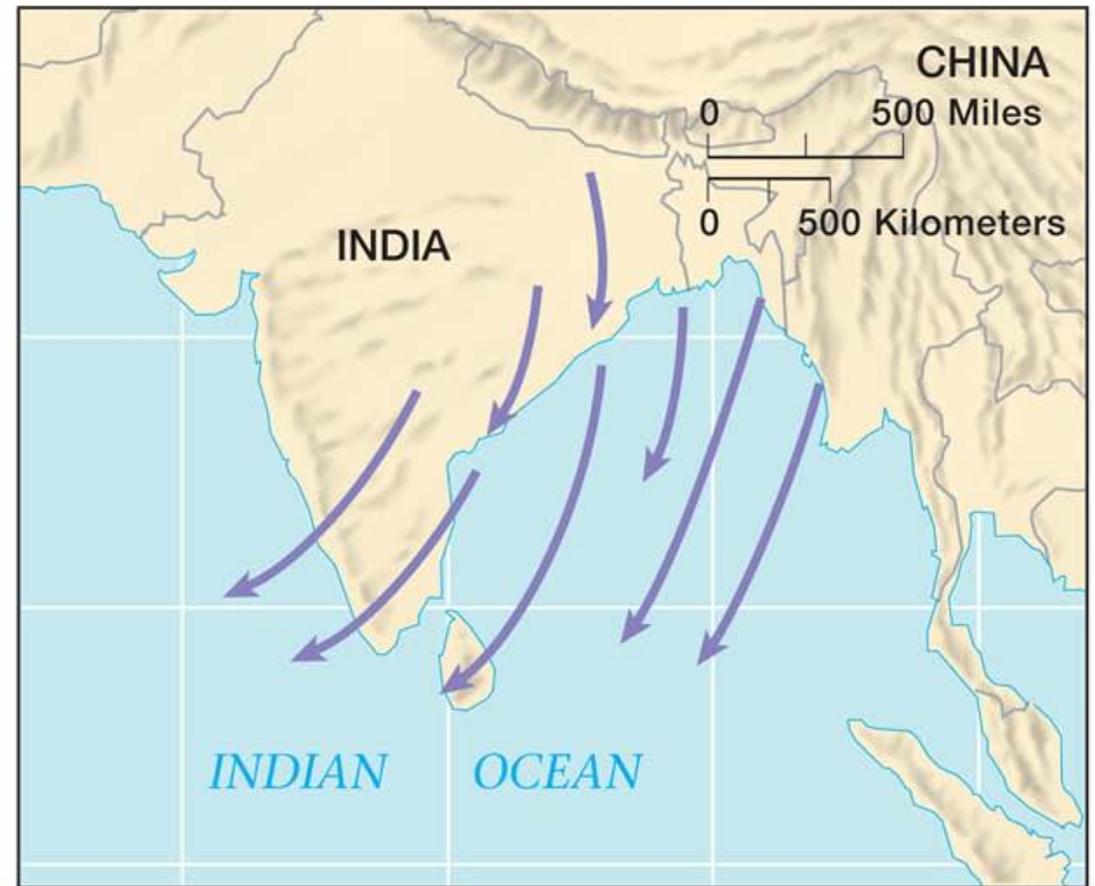


Monsoon climate in the subcontinent

Monsoons are really land and sea breezes on a huge scale.



Summer



Winter

- Monsoon occur normally in the tropics
- There is plenty of rain
- Monsoon forests provide valuable wood
- Fertile, agricultural regions
- Bamboo tree is typical of monsoon lands and is very useful.

The monsoon forest trees such as Teak and Bamboo are very useful and valuable.

Bamboo

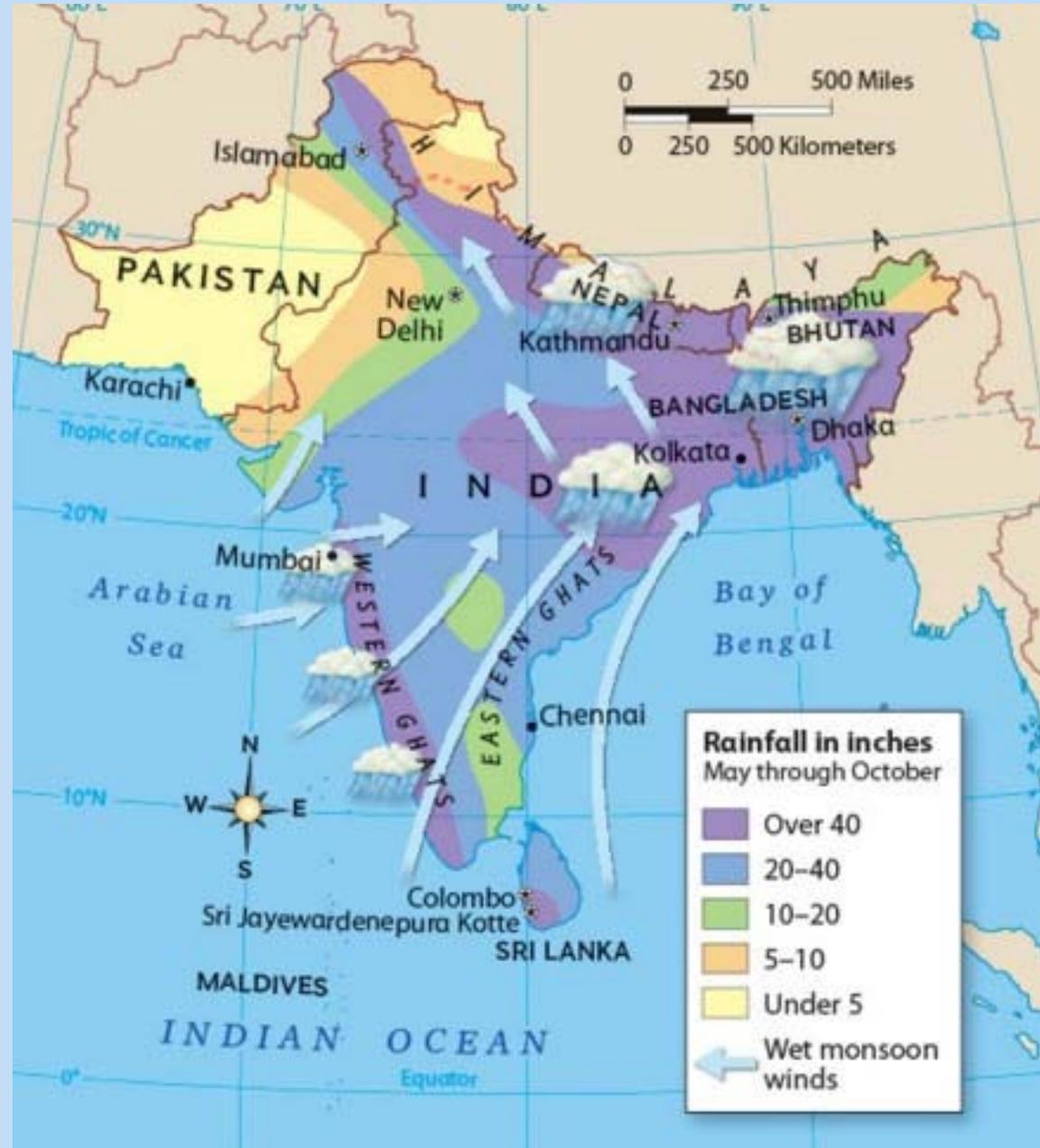


Teak tree



Pakistan and Summer Monsoon rain:

Most of the south-westerly winds carrying the rain have crossed much of India before they arrive in our country. As a result Pakistan has an average rainfall of 250 mm, whereas the western coast of India gets 450 mm.



Mediterranean climate:

This is one of the most favoured climate in the world. It is found generally between 30° to 45° latitude.



Mediterranean climate:

- Mild, wet winters with about 350- 900 mm of rain
- Hot- dry summers
- Ideal for agriculture, growing high price crops
- Cattle and sheep are raised on the higher and less fertile lands

- There are no true Mediterranean climate in the subcontinent.

Tundra:

- This is one of the world's waste spaces. These are ice and rock deserts, cover about 10% of the Earth's surface, but grow almost nothing of value to human beings, though some produce minerals, such as oil in Alaska.

There are two types of tundra:

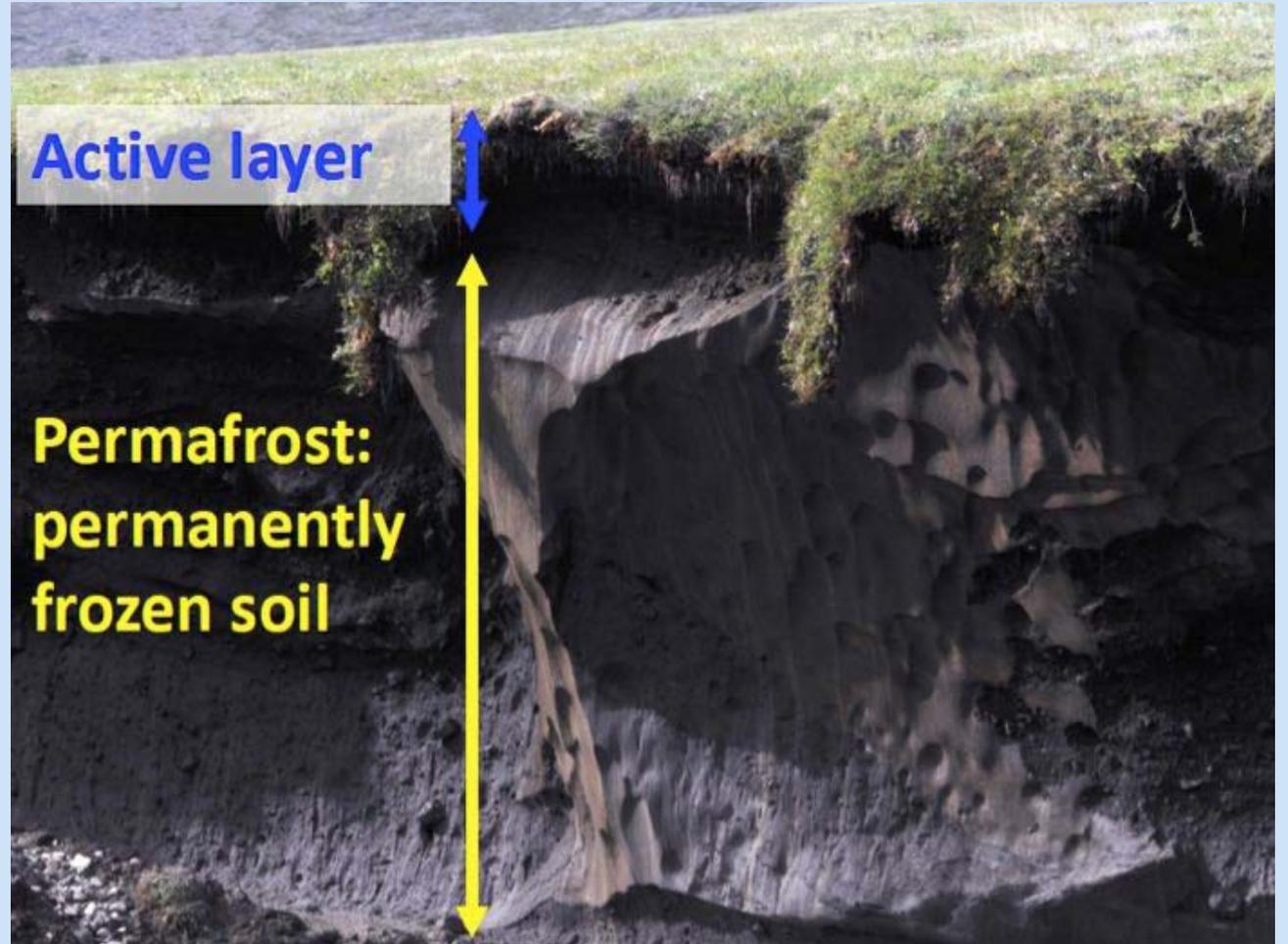
1-The Arctic tundra towards the poles:

2-The Alpine tundra, which is in mountains above the timber line where nothing much can grow.



Permafrost:

Below the topsoil, which may thaw in the ‘summer’ for perhaps 10 cm, there is the permafrost ---- land which has been frozen solid to a depth of 450 metres for hundreds of thousands of years.



1-The Arctic tundra



2-The Alpine tundra



Caribou and Reindeer have commercial value in Arctic region.

Reindeer



Caribou



There are small rat-like animals called lemmings, about 10-15 cm long. These live in holes under the snow, feeding on roots of the few plants.

MOSS



LEMMINGS



Alpine Tundra

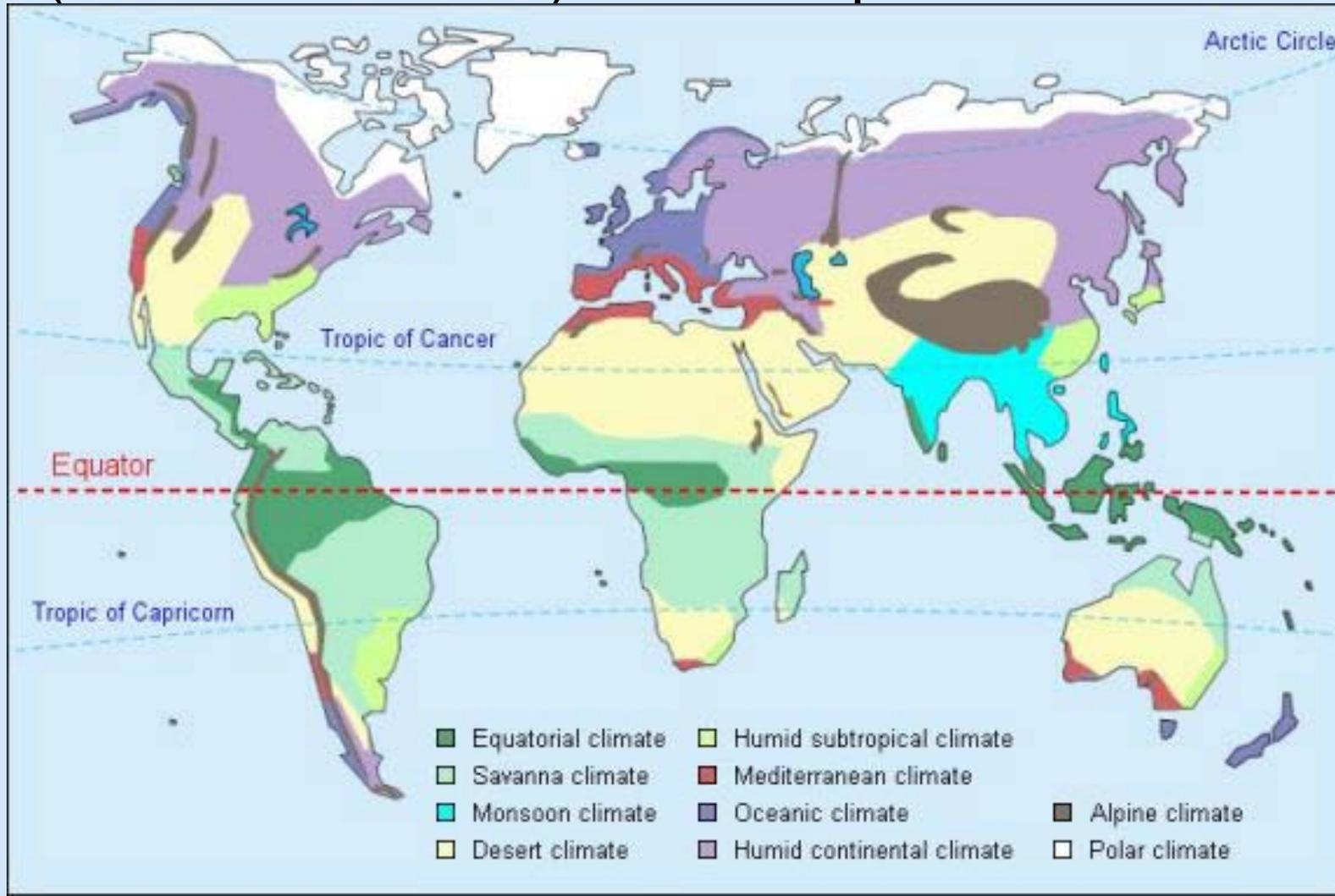


The Antarctic Region



EQUATORIAL CLIMATE:

The Earth from about 12° north and south of the equator (at normal altitude) has an equatorial climate.



Characteristics of equatorial climate:

- Average temperature all the year round is 28° to 32° C.
- Average rainfall--- 1500- 10,000 mm a year.
- Thunderstorms occur about 200 days a year.
- Dense vegetation, especially forest (soil it self is not fertile)

Tropical Rain Forest

- Huge trees (average height is 45 – 50 metres)
- Having long, straight trunks with a cloud of branches at the very tops. (the canopy)
- The main nourishment is the layer of rotting leaves on the forest floor.
- Many of forest trees have buttressed roots to support them.

The canopy of trees



- Huge creepers with stems up to 60 cm in diameter, crawl up the tree trunks to get to the light in the canopy.



Buttressed roots



- 70 % of all the animals, especially monkeys and birds live on trees.
- Snakes, lizards, insects and tigers (in less dense forests)
- Very few people live in equatorial forests.
- Amazon forest covers 5.2 million square kilometers.
 - The timber of the equatorial forests is very valuable for furniture and buildings.
 - Trees in these forests produce quinine, the first drug to treat malaria.
 - These thick forests produce plenty of Oxygen, maintain the temperature of environment and cause rain.

A Tropical Rain Forest (Amazon)

This forest alone supplies about half the oxygen in the world's atmosphere.



The world's largest single flower, Rafflesia, is a native of the rainforests of Sumatra and Borneo.



Temperate Grass Lands

- These are generally flat and fairly dry regions across the northern and southern hemispheres, usually between the deserts and the forest belts. These grasslands are found in southern Europe, Central Asia, South Africa and in North America.
 - Much of the temperate grasslands grow huge amount of grain, especially wheat, barley and maize.
 - Where the soil is not so fertile or there is less rain, huge number of cattle is reared.

Different names of grass lands

Grasslands of the World



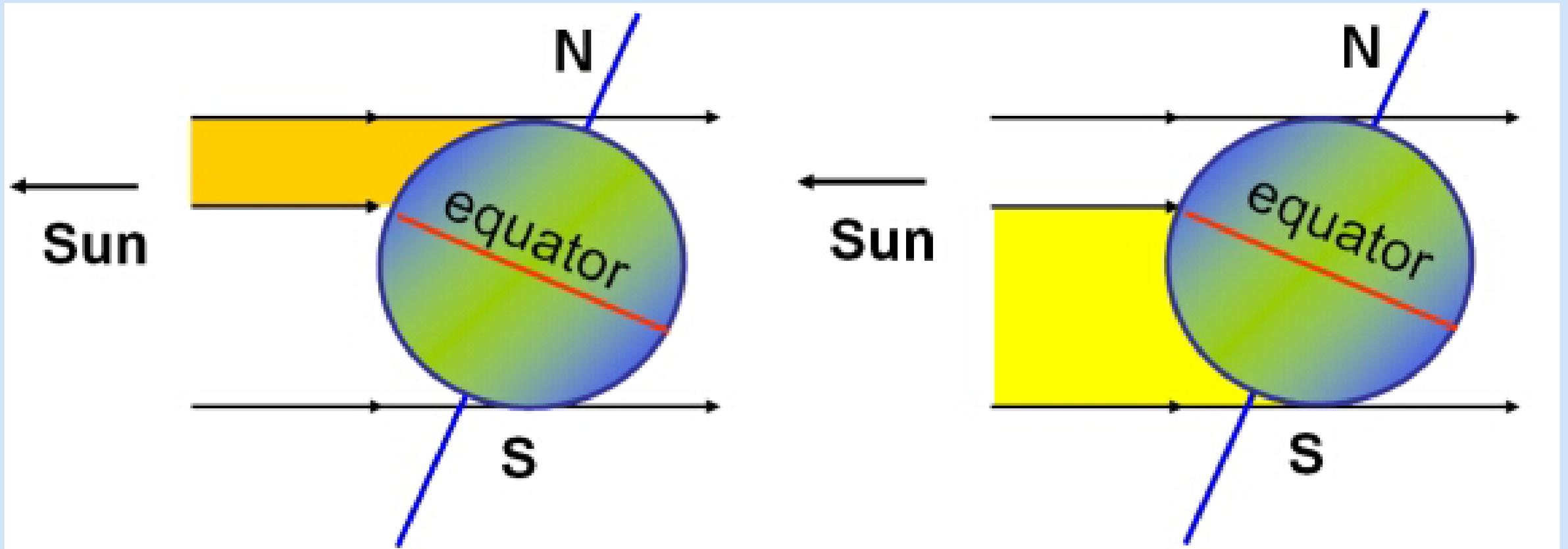
Grass lands in Central Asia and South Africa



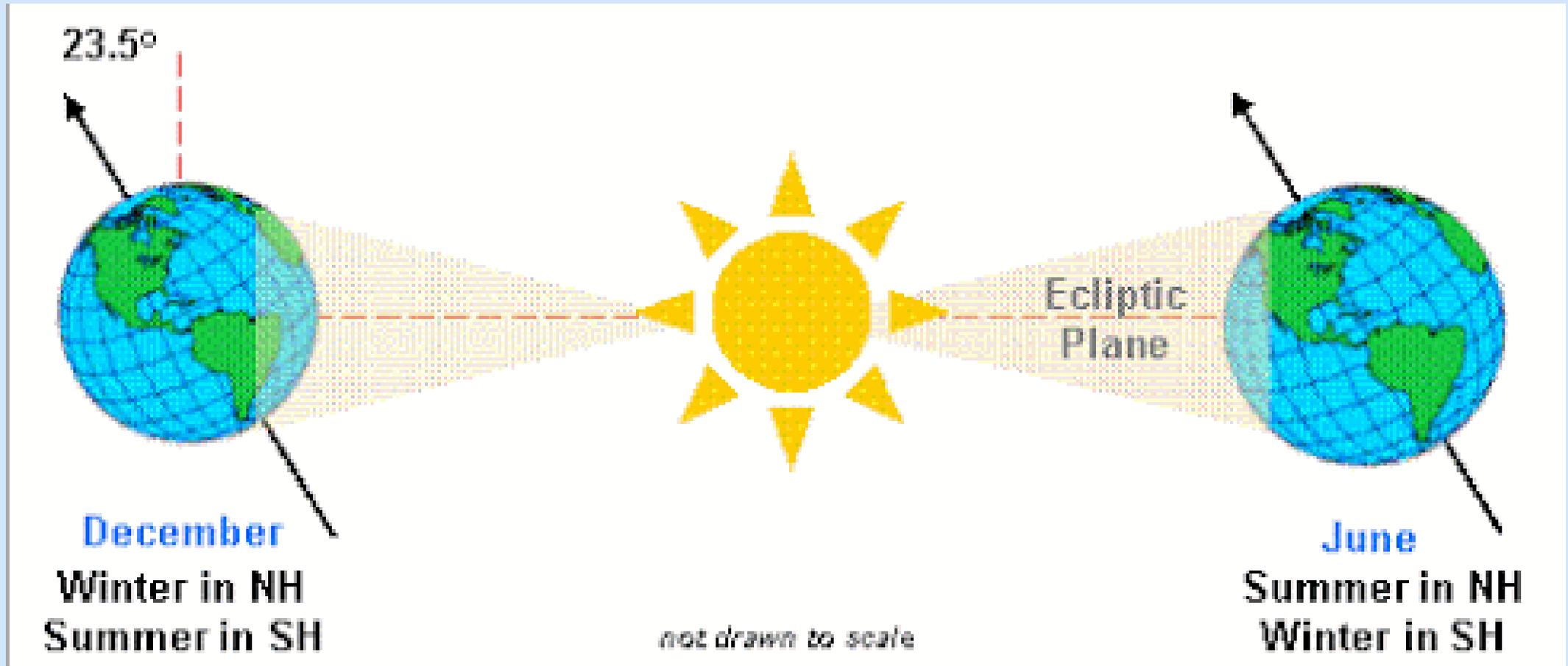
The Seasons:

These are the changes in climate:

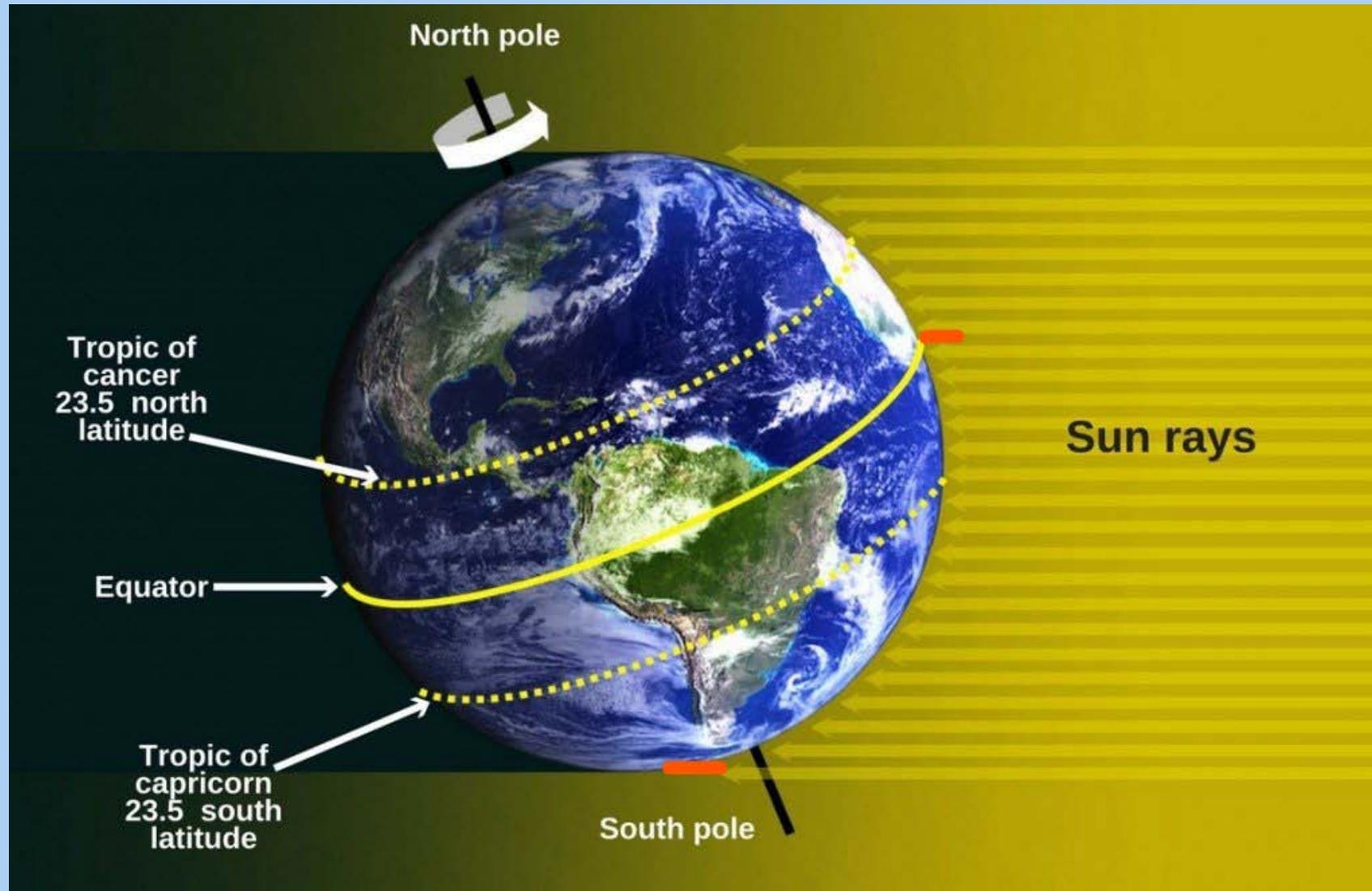
The seasons are opposite in the Northern and Southern hemispheres.



Lands round the equator experience very little difference between the seasons:



The Earth's axis is not upright, but slopes at 23.5° to the vertical.



At different times of the year the Sun seems to be overhead at different parts of the Earth.

