

ATOMIC ENERGY CENTRAL SCHOOL-1, TARAPUR

MODULE NO.- 3/3

LESSON- 4

AIR

SOCIAL SCIENCE – GEOGRAPHY

PRAKASH JAMBHULKAR

TGT- SOC. SCI.

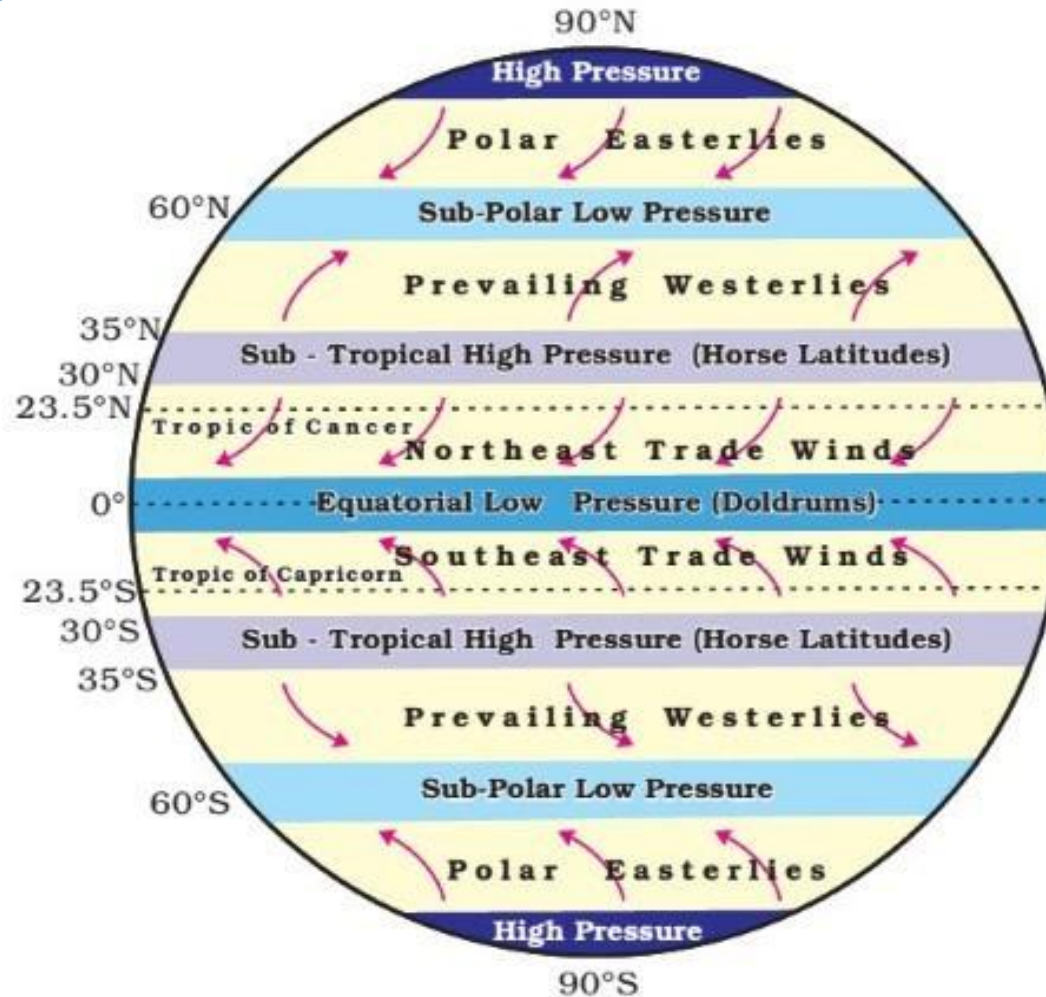
AECS-1, TARAPUR

TYPES OF WINDS-


Winds can be broadly divided into three types:

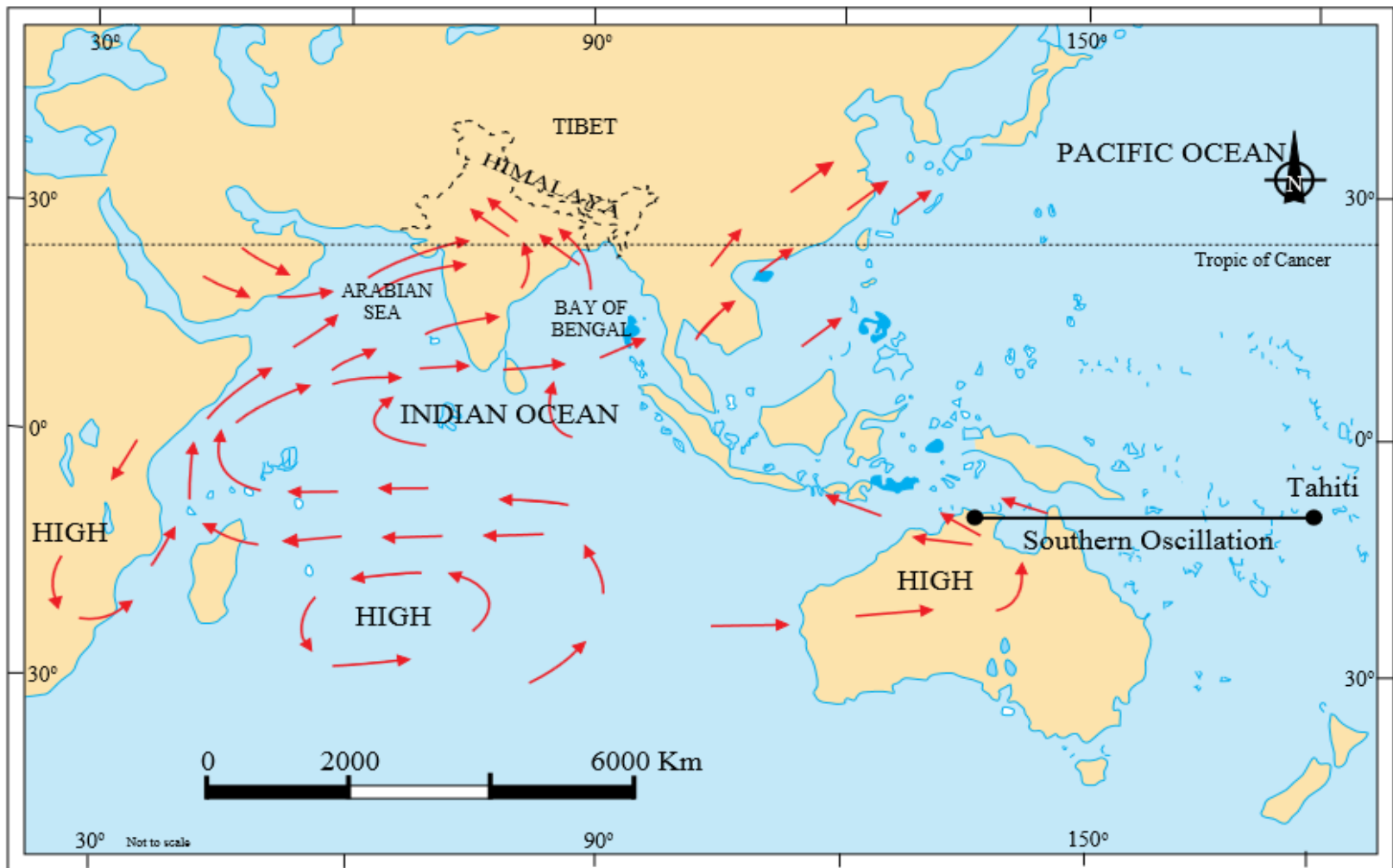
- **1. Permanent winds-** The trade winds, westerlies and easterlies are the permanent winds. These blow constantly throughout the year in a particular direction.

Major pressure belts and wind system



Major Pressure Belts and Wind System

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- **2. Seasonal winds** – These winds change their direction in different seasons.
 - For example - monsoons in India.



- **3. Local winds-** These blow only during a particular period of the day or year in a small area.
- For example- land and sea breeze.
- Loo is the hot and dry local wind of northern plains of India.

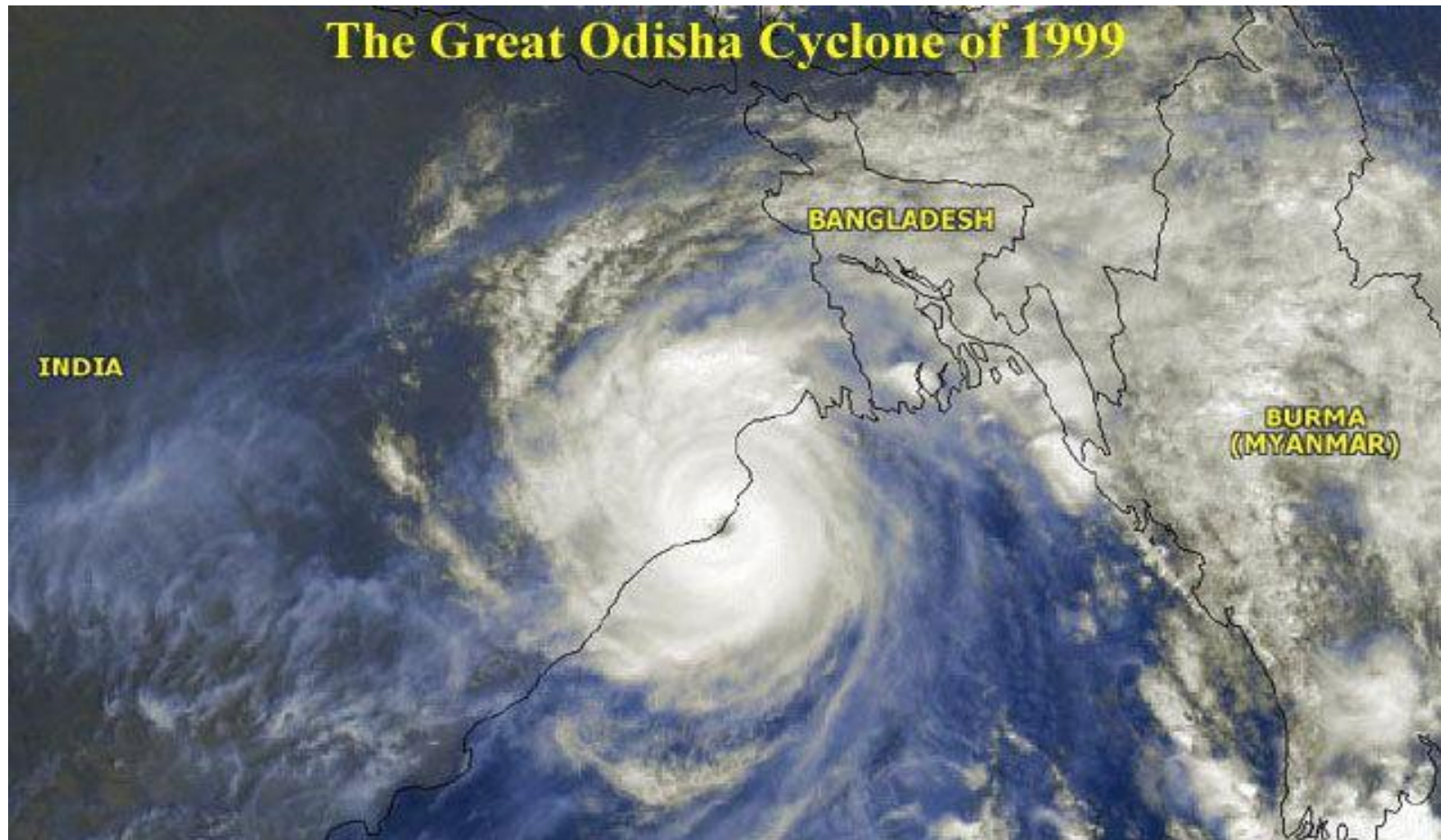
Loo of Rajasthan



CYCLONE - NATURE'S FURY

- Odisha, located on the eastern seacoast of India is prone to cyclones that originate in the Bay of Bengal. On 17-18 October 1999, cyclone hit five districts of the state.
- Another supercyclone occurred on the 29 October 1999, that devastated large portions of the state.

The Great Odisha Cyclone of 1999



MOISTURE

- When water evaporates from land and other water bodies, it becomes water vapour.
- **Moisture:** Water vapour present in the atmosphere is known as moisture.
- **Humidity:** Moisture in the air at any time is known as humidity.
- When the air is full of water vapour we call it a humid day.

PRECIPITATION

- When the water vapour rises, it starts cooling. The water vapour condenses causing the formation of droplets of water. Clouds are just masses of such water droplets.
- When these droplets of water become too heavy to float in the air, they come down as precipitation.
- **Precipitation** is the falling of moisture in the form of rainfall, snow, fog, sleet and hailstones.

HAVE YOU SEEN A WHITE TRAIL BEHIND THE JET PLANES?

- Jet planes flying in the sky leave a white trail behind them. The moisture from their engines condenses. We see trails of this condensed moisture for some time when there is no air movement to disturb it.



RAIN

- Precipitation that comes down to the earth in liquid form is called rain.
- Most of the ground water comes from rainwater. Plants help to preserve water.

RAIN



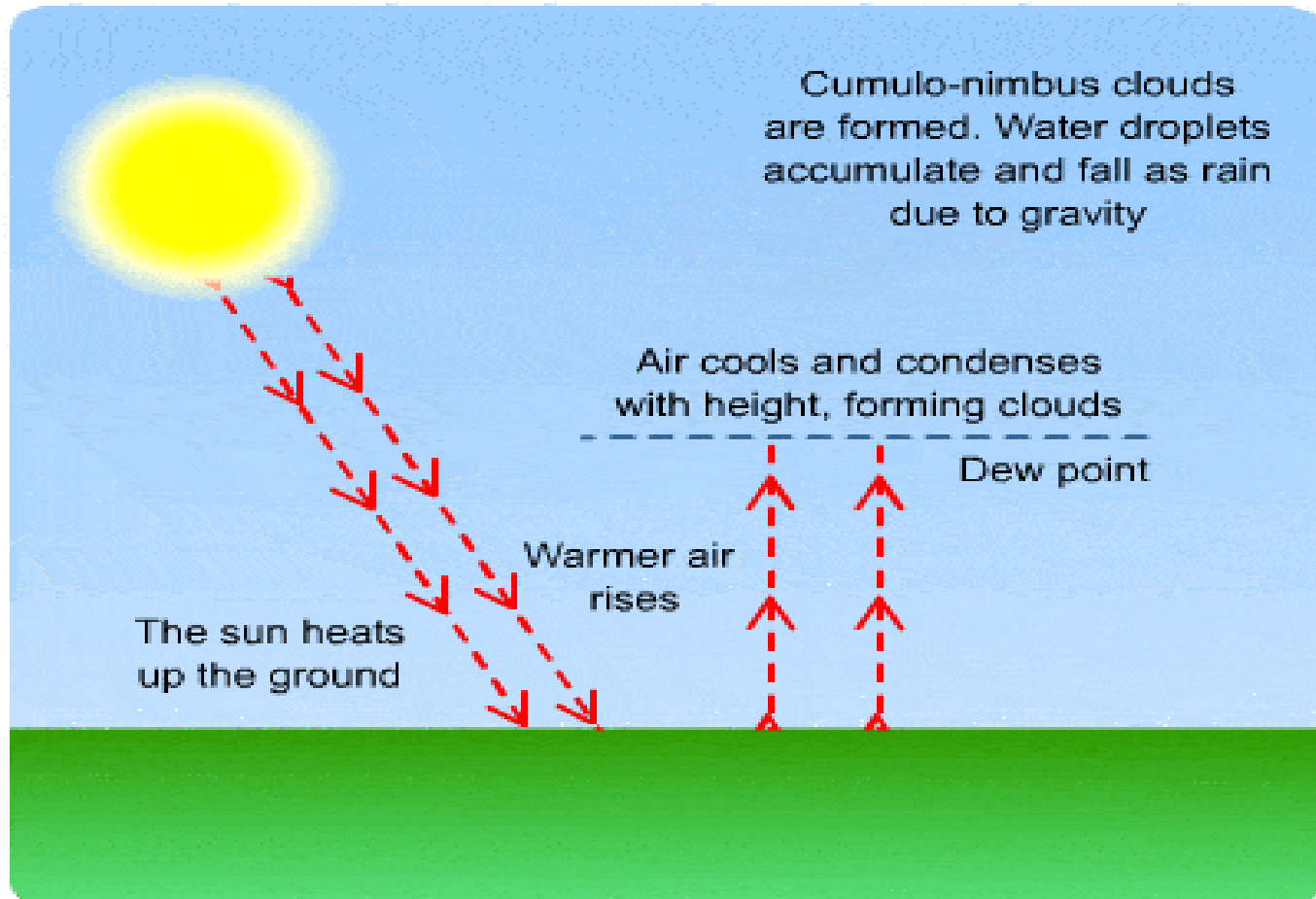
TYPES OF RAINFALL

On the basis of mechanism, there are three types of rainfall:

□ 1. The convective rainfall-

Convective rainfall occurs when the energy of the sun heats the surface of the Earth, causing water to evaporate to form water vapour. When the land heats up, it warms the air above it. This causes the air to expand and rise. As the air rises it cools and condenses. This process of condensation forms clouds high in the atmosphere. If this process continues rainfall will occur.

The convective rainfall



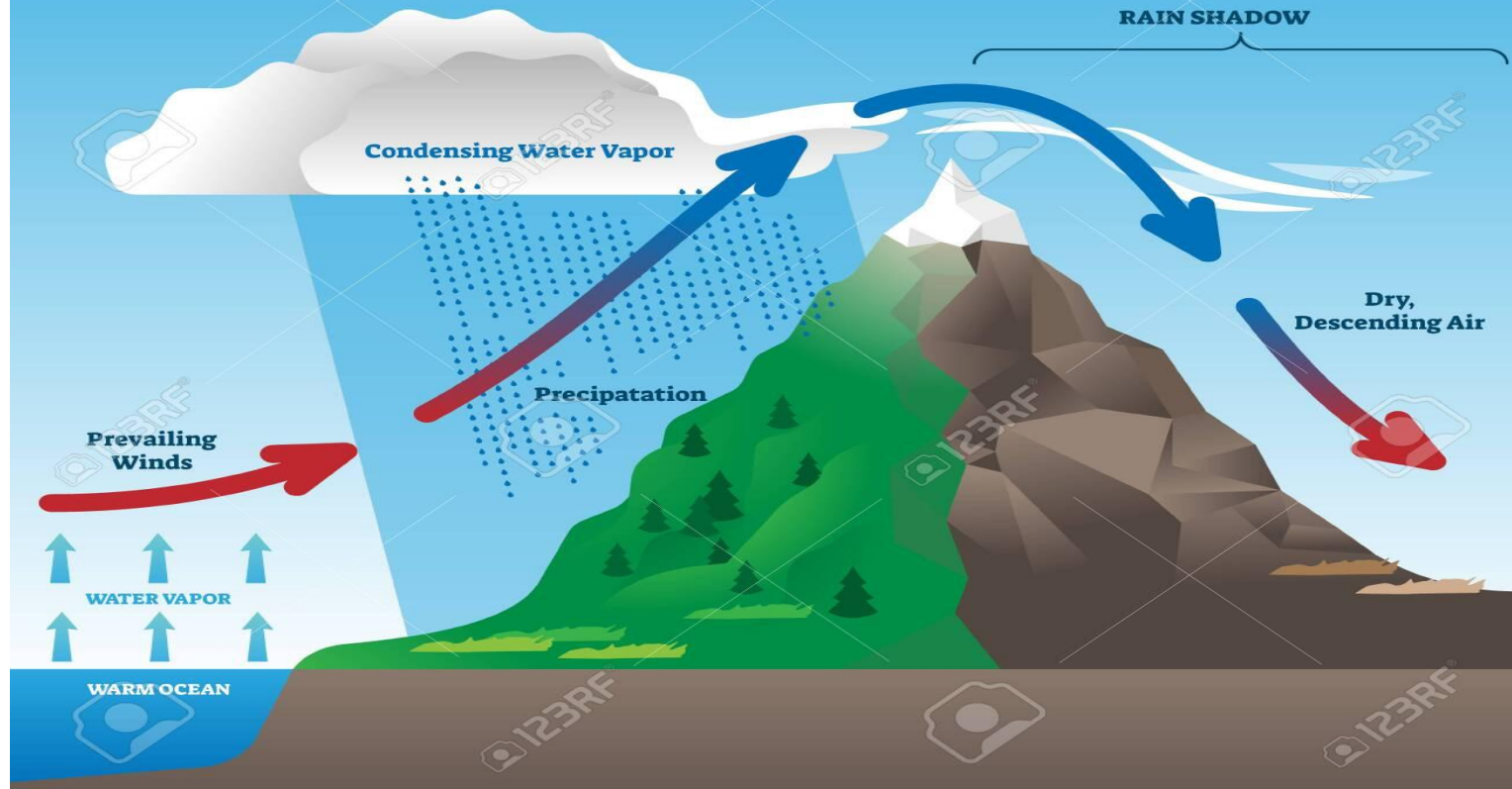
2.The orographic rainfall-

Orographic precipitation, rain, snow, or other precipitation produced when moist air is lifted as it moves over a mountain range. As the air rises and cools, orographic clouds form and serve as the source of the precipitation, most of which falls upwind of the mountain ridge. On the lee side of the mountain range, rainfall is usually low, and the area is said to be in a rain shadow.

OROGRAPHIC EFFECT

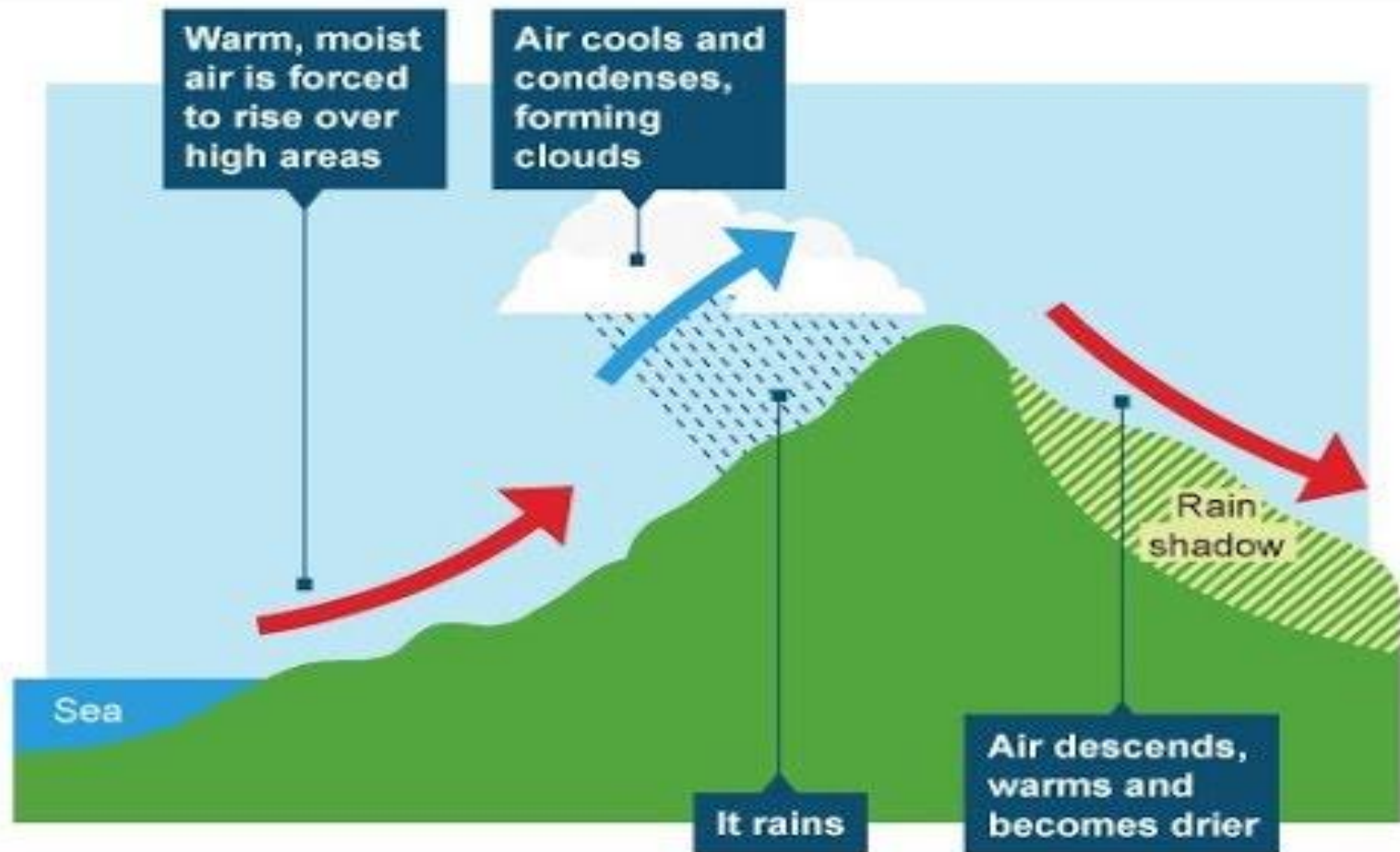
WINDWARD SIDE

LEEWARD SIDE



3. The cyclonic rainfall-

This type of **rainfall** occurs when warm and cold air meets each other. Since warm air is lighter, it rises above the cold air. The rising air is then cooled beyond the saturation point resulting in heavy **rainfall**.



USES OF RAINFALL

- Rainfall is very important for the survival of plants and animals.
- It brings fresh water to the earth's surface.

EFFECTS OF RAINFALL

- If rainfall is less – water scarcity and drought occur.
- If it is more, floods take place.

USES OF RAINFALL



DROUGHT



FLOOD





THE END