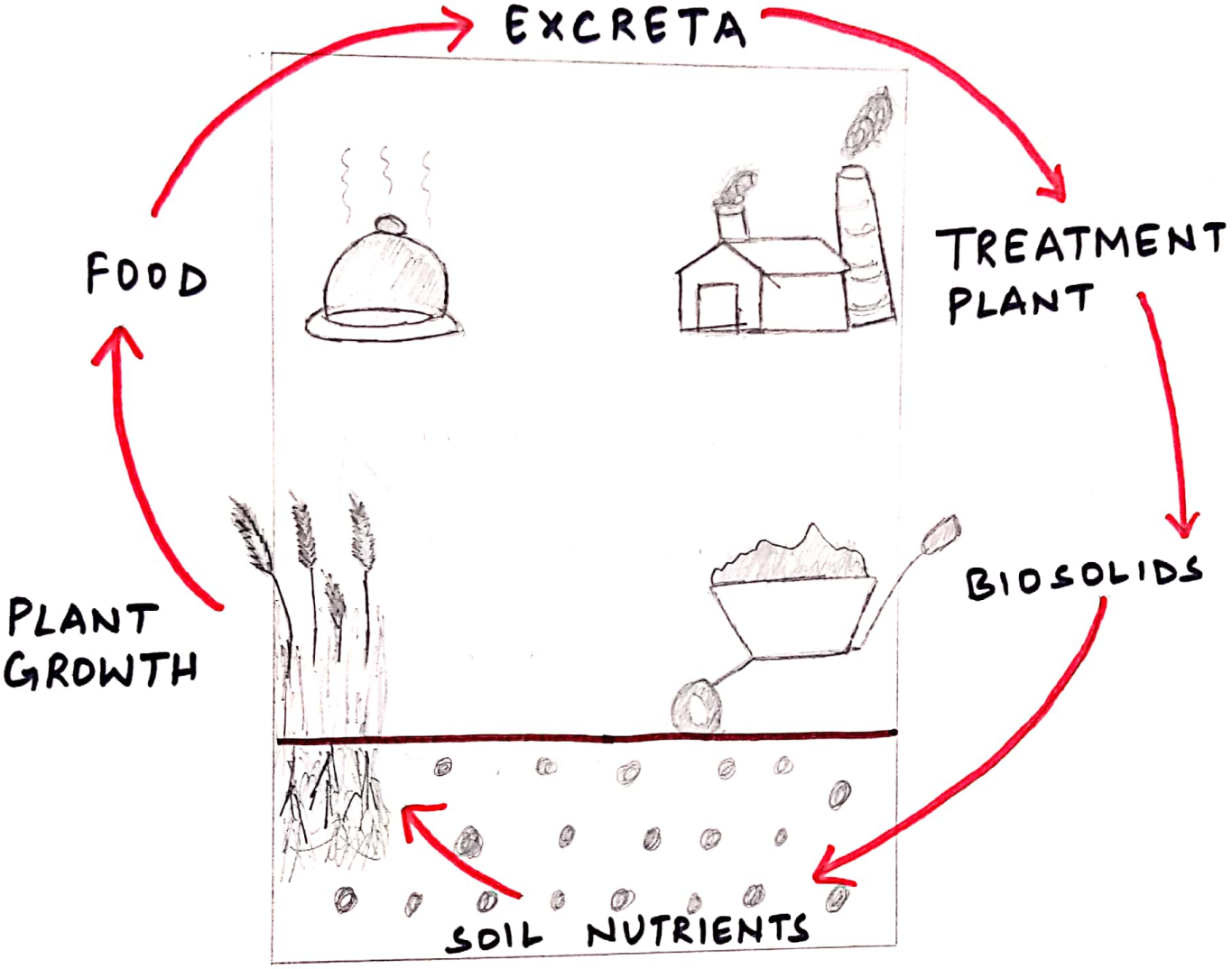
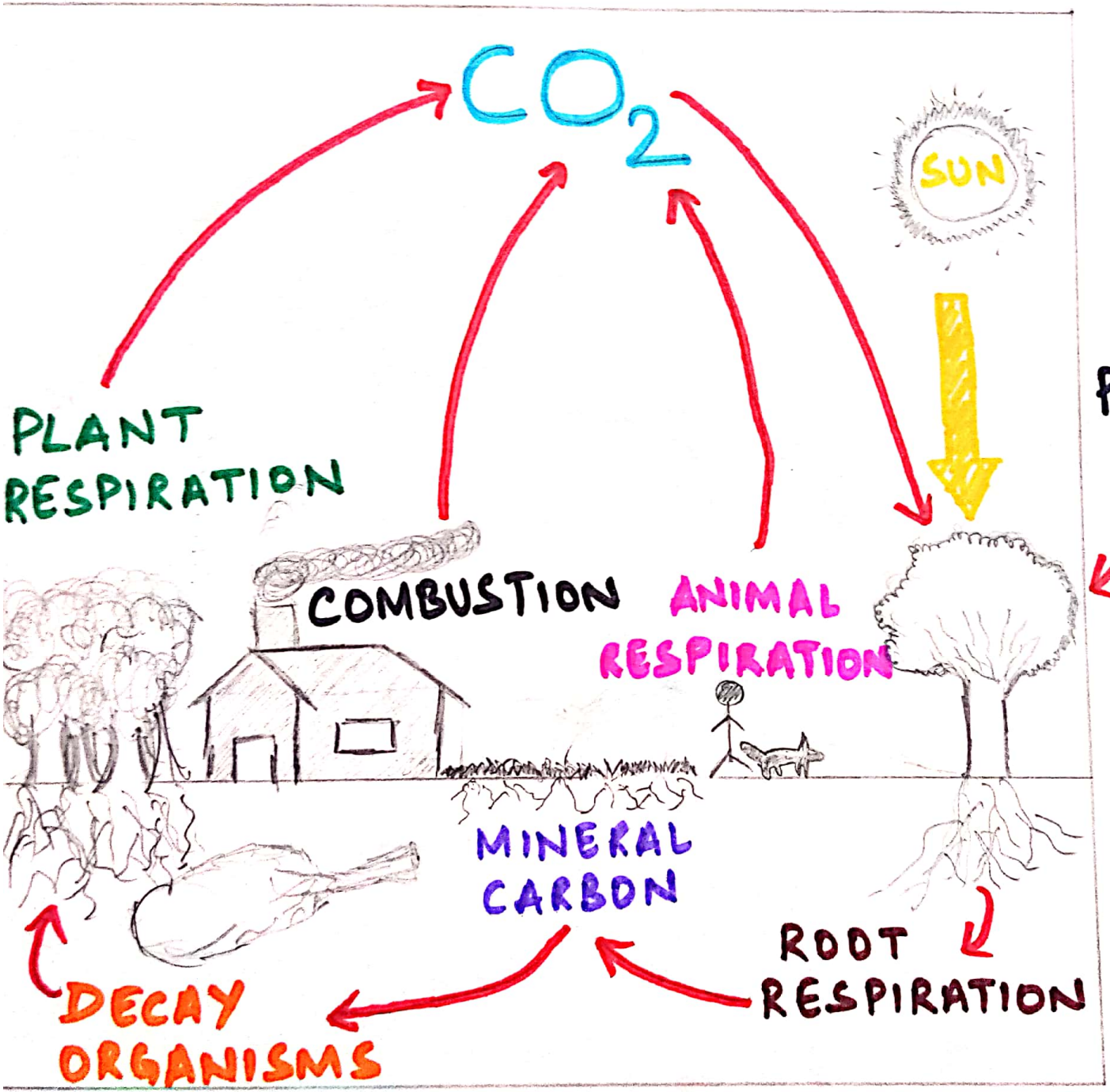
NUTRIENT CYCLE



A nutrient cycle (or ecological recycling) is the movement and exchange of organic and inorganic matter back into the production of matter.

CARBON CYCLE



CARBON CYCLE

The carbon cycle is the biogeochemical cycle by which carbon is exchanged among the biosphere, pedosphere, geosphere, hydrosphere and the atmosphere of the Earth. Carbon is the main component of biological compounds as well as minerals such as limestone. Along with other cycles it plays a key role role in sustaining life on Earth. The carbon cycle was discovered by Joseph Priestley and Antoine Lavoisier, and popularised by Humphry Davy.

Main components of carbon cycle are :-

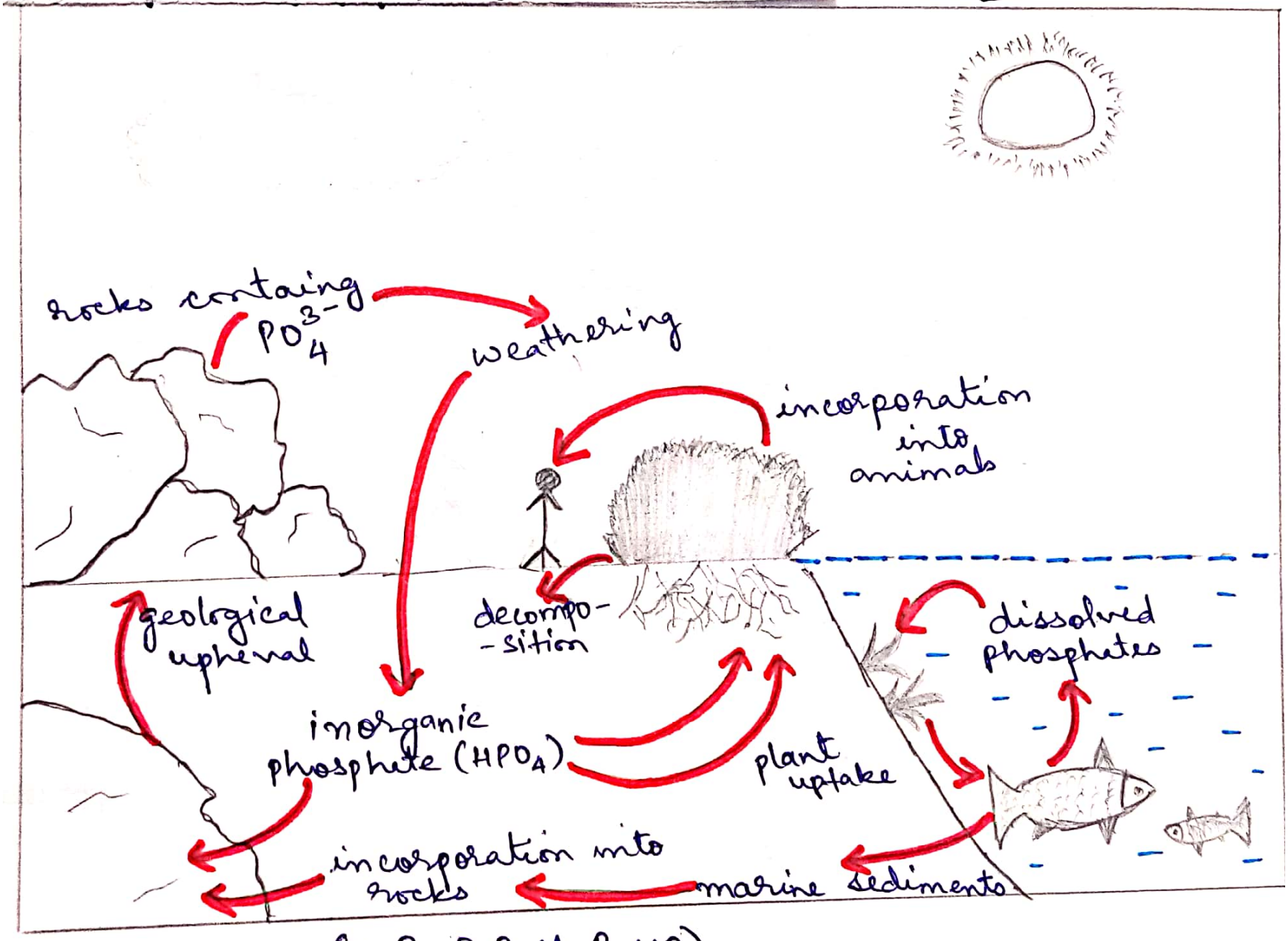
- atmosphere
- terrestrial biosphere
- ocean
- sediments, fossil fuels
- Earth's interior (mantle and crust)

HUMAN ACTIVITIES AFFECTING CARBON CYCLE :-

(i) Burning of Fossil Fuels
(ii) Deforestation
(iii) Greenhouse Gas
(iv) Global Warming.

Such activities cause the content of CO_2 to increase and disrupt the normal pattern of the carbon cycle.

PHOSPHORUS CYCLE



PHOSPHORUS CYCLE

The phosphorus cycle is a biogeochemical cycle that describes the movement of phosphorus through the lithosphere, hydrosphere, and biosphere. The atmosphere does not play a significant role in the movement of phosphorus because phosphorus based compounds are usually solids at the typical ranges of temperature and pressure found on Earth. The phosphorus cycle should be viewed from whole Earth system and then specifically focused on the cycle in the terrestrial and aquatic systems. On land it reduces due to gradual weathering. Various human activities have caused major changes to the phosphorus cycle.

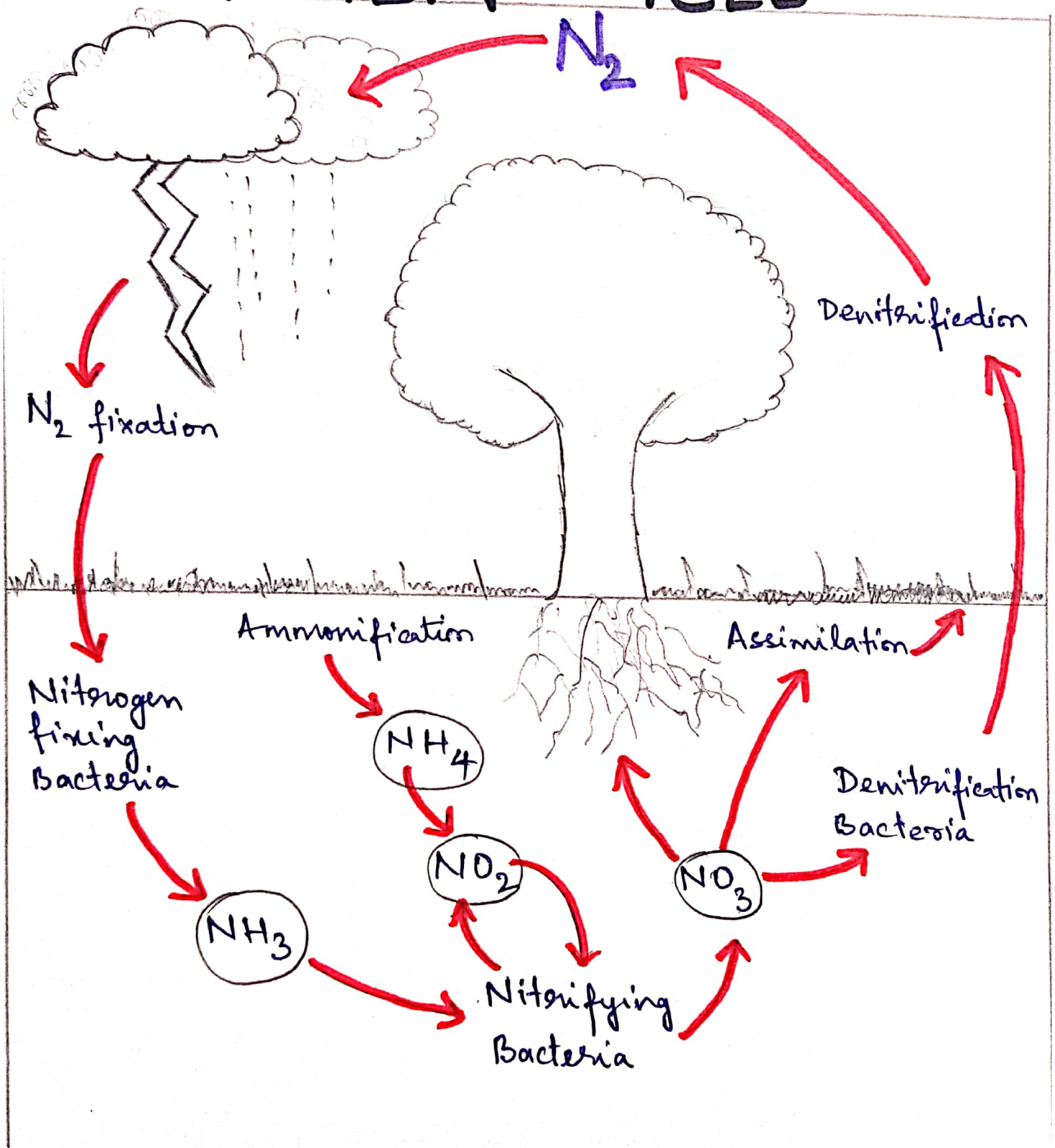
HUMAN INTERVENTION

Humans have caused major changes to the global phosphorus cycle are :-

(i) shipping of phosphorus minerals
(ii) use of phosphorus fertilizers
(iii) shipping of food products where phosphorus is used as an effulent.

Such activities dispossess the natural cycle and cause devastating effect on

Nitrogen Cycle



NITROGEN CYCLE

The nitrogen cycle is the biogeochemical cycle by which nitrogen is converted into multiple chemical forms as it circulates among atmosphere, terrestrial and marine ecosystems. The conversion of nitrogen is carried out through both biological and physical process.

The nitrogen cycle is of particular interest to ecologists because nitrogen availability can affect rate of key ecosystems processes.

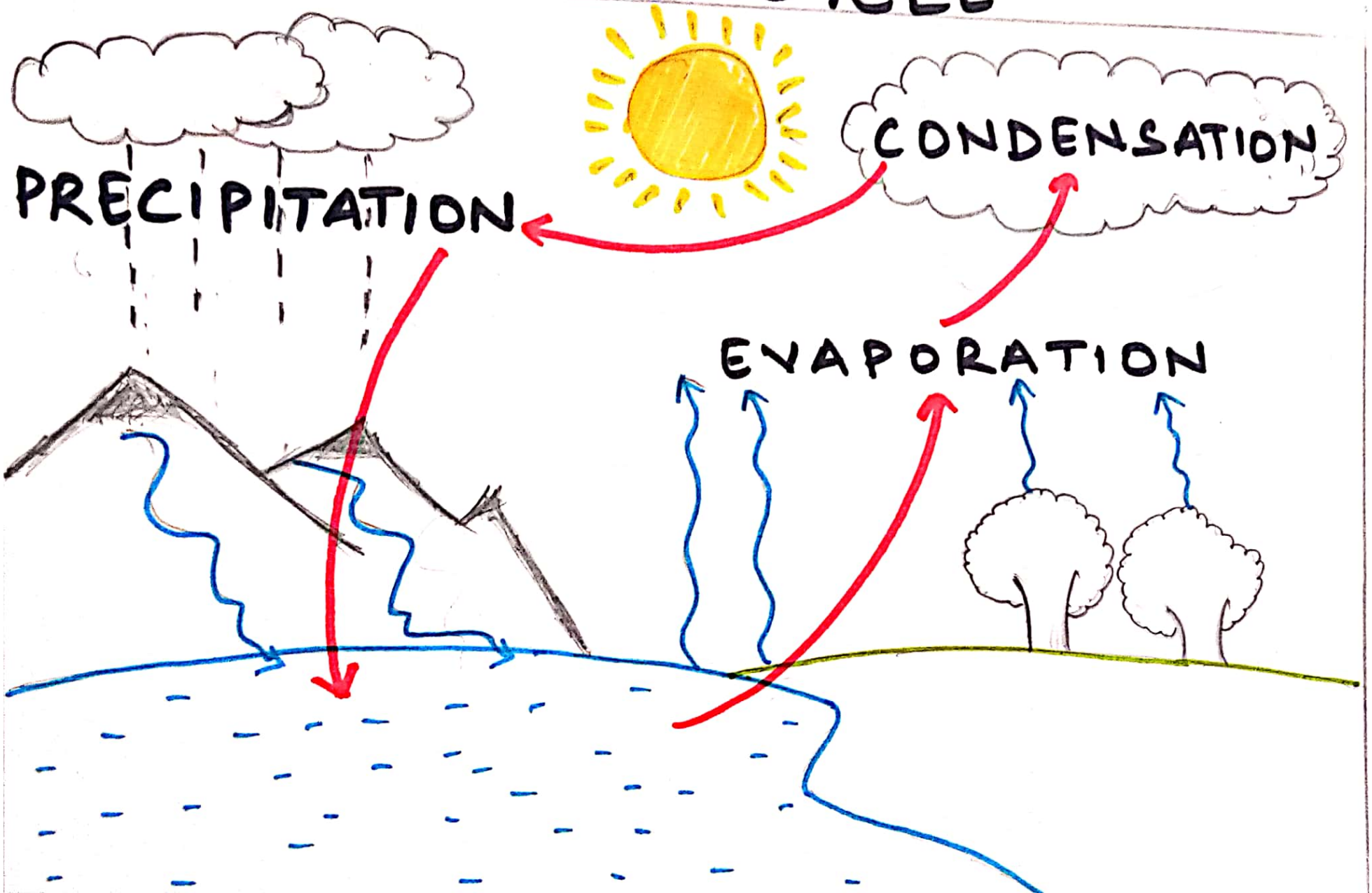
The various processes involved are :-

- Nitrogen fixation
- Assimilation
- Ammonification
- Nitrification
- Denitrification

HUMAN INTERVENTION

Many human activities such as burning of fuels use of fertilizers can increase the nitrogen content in the soil. Large changes in the amount of nitrogen due to these activites can disrupt the nitrogen cycle and can harm the aquatic and terrestrial ecosystems.

HYDROLOGICAL CYCLE



HYDROLOGICAL CYCLE

The hydrological cycle describes the continuous movement of water on, above and below the surface of the Earth. The mass of water on Earth remains fairly constant over time but the partioning of the water into the major reservoirs of ice, fresh water, saline water and atmospheric water is variable depending on a wide range of climatic variables. The water cycle involves the exchange of energy, which leads to temperature changes. When water evaporates it takes up energy and when it condenses it release energy. The water is essential for for the maintaince of most life and ecosystems on the planet.

HUMAN INTERVENTION

Large scale human manipulation of water has significantly altered global patterns of streamflow, Resulting changes in sea level, ocean salinity and in biophysical properties of the land surface could ultimately generate climate feedbacks. Activities affecting are :- Reservoirs, Groundwater mining, Irrigation, Combustion, Deforestation, Wetlands.