

Soil Carbon Pools

The pedosphere plays an important role in the global carbon cycle of the Earth because it is a major location of carbon storage in terrestrial ecosystems. The total soil C pool of 2,300 Pg is three times than that of the atmospheric pool of 770 Pg and 3.8 times that of the vegetation pool of 610 Pg. Therefore, soil acts as a significant C pool that absorbs more C than the other C sinks. It is therefore



important to understand the dynamics of soil carbon as well as its role in terrestrial ecosystem carbon balance and the global carbon cycle. The two types of carbon pools in the pedosphere are soil organic carbon and soil inorganic carbon.

Soil Organic Carbon

Soil organic carbon is a component of soil organic matter and it is assumed to be 58% of soil organic matter. Organic carbon forms are derived from the decomposition of plants and animals in the soil which are in various stages of decay. Soil organic carbon is the basis of soil fertility because, it releases nutrients for plant growth, promotes the structure, biological and physical health of soil and is a buffer against harmful substances.

The enhancing and degrading processes of soil organic C are affected by the pedospheric processes. Soil organic C enhancing processes include plant biomass production, humification, aggregation and sediment deposition. Soil organic C degrading processes are soil erosion, leaching and soil organic matter decomposition. A high heterogeneity in soil organic C is probably associated with the variability in topography, stoniness, parent material, soil depth and microclimate on a local scale.



Carbon Trading

Carbon trading, also known as "cap and trade", is a system designed to cut down the carbon emissions which contribute to global warming. Generally, in a market based cap and trade system, a central authority such as a government or international body sets a limit on the amount of carbon which can be emitted and then divides this amount in to several parts which are allocated to different groups. These parts can then be traded as any commodity. Carbon trading can occur both between countries and among the industries within a country.