First FAO Global assessment of Soil Carbon in Grasslands

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In news– Food and Agriculture Organization of the United Nations (FAO) has published its first Global Assessment of Soil Carbon in Grasslands.

About FAO assessment-

- **It measured the baseline of stocks of Soil Organic Carbon (SOC)** the carbon held within the soil that is measurable, expressed as a percentage by weight (gC/Kg soil)– in both semi-natural and managed grasslands and estimated their potential of SOC sequestration.
- **The study found that if the SOC content in the 0–30 cm depth layer of available grasslands increased by 0.3 per cent after 20 years** of the application of management practices that enhance soil organic carbon sequestration, 0.3 tonnes C/ha per year could be sequestered.
- **The Livestock Environmental Assessment and Performance Partnership (FAO LEAP Partnership) funded this study** to illustrate the state of soil carbon stocks in grassland systems and their potential to sequester carbon in the soil.
- **Soils can act as both sources and sinks of carbon, and many grasslands, which contain approximately 20 percent of the world's SOC,** have suffered losses because of human activities such as intensive livestock grazing, agricultural activities and other land-use activities.
- According to the report, m**ost of the world's grasslands have a positive carbon balance,** meaning the land is stable or well-maintained.
- However, **negative carbon balance was found in East Asia, Central and South America,** and Africa south of the

Equator, meaning these stocks are likely to be decreasing due to anthropogenic stresses combined with climatic conditions.

- This trend, however, could be reversed by stimulating plant growth, capturing carbon in the soil, and protecting carbon in highly organic soils, such as semi-natural (non-human managed) grasslands.
- In livestock management, this could also mean implementing rotational, planned or adaptative grazing measures for animals.
- The report also explores other possible measures to improve SOC stocks through case studies, such as the establishment of fodder gardens in eastern African Countries.
- The study points out that the lack of incentives for farmers to improve management practices, and the current difficulty in accurately monitoring SOC stocks and changes are the main reasons that SOCs are not being included in the national climate plans known as National Determined Contributions (NDCs), which are at the heart of the Paris Agreement.
- FAO emphasizes that there is a need to balance the benefits of animal-source foods and livestock keeping for nutrition, health, livelihoods, and well-being, with the urgent need to reduce greenhouse gas emissions to tackle the climate crisis, which also threatens food security.

Note:

- Soil organic carbon is a measureable component of soil organic matter.
- Organic matter makes up just 2–10% of most soil’s mass and has an important role in the physical, chemical and biological function of agricultural soils.
- Organic matter contributes to nutrient retention and turnover, soil structure, moisture retention and

availability, degradation of pollutants, and carbon sequestration.