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**« 4 per 1000 Initiative: Soils for Food Security and the Climate »
5th Meeting of the Forum Wednesday 9 December 2020 12:00 to 15:00 PM CET**

High Level Segment Speech

The world reached a record of 417.2 parts per million of carbon dioxide (ppm CO₂) in the atmosphere in May 2020 - the most in over 3 million years.

According to peer reviewed research published by Rohling et al. in the scientific journal, Nature Geoscience, the last time the world had 380 ppm, was 3.0–3.5 Million years ago. Temperatures were between 5 to 16 C warmer (9 - 28.8 F) and sea levels were 20 to 30 meters higher (65 to 100 ft) There was a mass extinction event around that period.

Even if the world transitioned to 100% renewable energy tomorrow, this will not stop the temperature and sea level rises. The world will continue to heat up because it will take more than 100 years for the CO₂ levels to drop naturally.

The United Nations Paris Agreement proposes net CO₂ neutrality by 2050. The evidence shows this will be too late to stop the enormous damage of catastrophic climate change. At the current rate of emissions there would be close to 500 ppm of CO₂ in the atmosphere.

The fact is we are in a serious climate emergency now. We must speed up the transition to renewable energy, stop the clearing of all forests and we have to make a great effort to drawdown CO₂ in the atmosphere to the pre-industrial level of 280 ppm.

Soils are the greatest carbon sink after the oceans. There is a wide variability in the estimates of the amount of carbon stored in the soils globally. According to Professor Rattan Lal, there are over 2,700 gigatons (Gt) of carbon stored in soils. The soil holds more carbon than the atmosphere (848 Gt) and biomass (575 Gt) combined. There is already an excess of carbon in the oceans that is starting to cause a range of problems. We cannot put any more CO₂ in the atmosphere or the oceans. Soils are the logical sink for carbon.

Most agricultural systems lose soil carbon with estimates that agricultural soils have lost 50 to 70% of their original Soil Organic Carbon (SOC) pool, and the depletion is exacerbated by further soil degradation and desertification. Agricultural systems that recycle organic matter and use crop rotations can increase the levels of SOC. This is achieved through techniques such as longer rotations, ground covers, cover crops, green manures, legumes, compost, organic mulches, biochar, perennials, agroforestry, agroecological biodiversity and livestock on pasture using sustainable grazing systems such as holistic grazing. These systems are starting to come under the heading of Regenerative Agriculture because they regenerate SOC.

A shift to agricultural systems that mitigate greenhouse gases is essential if we are to stop catastrophic climate change. Agriculture has to move from being a major problem to a major solution.

André Leu,
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Regeneration International
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