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EARTH INSPECTOR: RECONCILING SPACE TECHNOLOGIES AND AGRICULTURAL APPROACHES TO TACKLE CLIMATE CHANGE

Abstract

Different projects or efforts have been initiated to tackle climate change following the Paris Climate Agreement 2015 and One Planet Summit 2017 in Paris. The focus has largely been on efforts to reduce greenhouse gas emissions from the energy sector which includes emissions from transportations and power plants, while efforts can be better directed at tackling emissions from the agricultural sector as well. The agricultural sector is the second largest contributor of greenhouse gases and insights from *The Carbon Farming Solution*, show how an agriculture system based on agroecology principles, compared to industrial agriculture, can both mitigate and reverse the current trajectory of climate change. Carbon farming enables soil carbon sequestration. Soil becomes a long-term carbon storehouse, where the atmospheric carbon is captured and packed into the soil. If properly executed, it is estimated that this approach could capture over 100 billion tons of carbon into the soil, helping massively in terms of reducing the amount of atmospheric greenhouse gases. Through the Paris Climate Agreement, countries have identified an initial global target to keep global temperature rise just below 2°C above pre-industrial levels and this could be achieved by adopting carbon farming practices in the agricultural sector.

With space technologies, the need to move towards carbon farming can be better assessed. Valuable information from earth observation and greenhouse gas monitoring systems or technologies, can be gathered and analysed from different agricultural sites. The effectiveness of this type of farming approach and to what extent the impacts of industrial farming poses to the environment can be evaluated and compiled systematically and given to policy makers for better decision making processes. This paper aims to look at how this can be better achieved, through a design framework or an application that would bring together the different space technologies and the different agricultural approaches from various geographic locations.