Paper ID: 72547
student

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM (IPB)

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BOOSTING REFORESTATION BY ESTIMATION OF SOIL FERTILITY USING SATELLITE IMAGING TECHNIQUES

Abstract

Curtailment of deforestation is one of the major goals set at COP26. Estimation of soil fertility is an important survey that needs to be conducted before the process of reforestation can be initiated. This paper discusses the various parameters that are required to be taken into consideration while gauging the fertility of soil, and how this process can be improved by the aid of satellite imaging techniques. Current research and development in this area include techniques of Remote Sensing, which predominantly fall in the visible and infrared ranges. However, only a finite amount of soil properties can be determined using these methods in the optical range. Existing studies show that the most prominent factors which affect fertility of soil are its ability to retain moisture, nutrient content, and permeability. The study conducted in this paper explores how usage of satellite imaging techniques will take additional factors into account, and enhance the technique of determination of soil fertility. The main focus is to improve the quality of the aforementioned detection, in order to identify potential areas of possible reforestation. This study aims to help create an updated database which will be able to locate and narrow down geographical regions where a forest restoration initiative would be feasible, thus contributing towards the efforts to combat climate change.