World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:17, No:03, 2023

Comparison of Slope Data between Google Earth and the Digital Terrain Model, for Registration in Car

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Abstract : Currently, the rural producer has been facing problems regarding environmental regularization, which is precisely why the CAR (Rural Environmental Registry) was created. CAR is an electronic registry for rural properties with the purpose of assimilating notions about legal reserve areas, permanent preservation areas, areas of limited use, stable areas, forests and remnants of native vegetation, and all rural properties in Brazil. . The objective of this work was to evaluate and compare altimetry and slope data from google Earth with a digital terrain model (MDT) generated by aerophotogrammetry, in three plots of a steep slope, for the purpose of declaration in the CAR (Rural Environmental Registry). The realization of this work is justified in these areas, in which rural landowners have doubts about the reliability of the use of the free software Google Earth to diagnose inclinations greater than 25 degrees, as recommended by federal law 12651/2012. Added to the fact that in the literature, there is a deficiency of this type of study for the purpose of declaration of the CAR. The results showed that when comparing the drone altimetry data with the Google Earth image data, in areas of high slope (above 40% slope), Google underestimated the real values of terrain slope. Thus, it is concluded that Google Earth is not reliable for diagnosing areas with an inclination greater than 25 degrees (46% declivity) for the purpose of declaration in the CAR, being essential to carry out the local topographic survey.

Keywords : MDT, drone, RPA, SiCar, photogrammetry
Conference Title : ICAEE 2023 : International Conference on Agriculture, Ecosystems and Environment
Conference Location : Rome, Italy
Conference Dates : March 06-07, 2023