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Analysis and prediction of vegetation, croplands, and urbanization change in the philippines using data satellite images between 2001-2018

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Urbanization in the Philippines is at a fast pace. As it grows, urban land expansion increases. It results in the conversion of the different land areas in the country. To determine its changes, this study used geographic information system images by using data products of MODIS Terra and Aqua from NASA EOSDIS, it provides satellite images of the Philippines' cover and land use. Eighteen (18) satellite images were gathered and used in this study. The findings showed that the National Capital Region and Cebu islands regions are the most urbanized areas in the country.

Analysis revealed that both urbanization and vegetation landcover increases while the cropland landcover gradually declines. Multiple linear regression analysis revealed that these variables are significant to each other. It also revealed a positive relationship between urbanization and vegetation, while both showed a negative relationship towards cropland landcover. For the next five (5) years, the Philippines' data revealed that urbanization will increase immensely and expand to 3,181.4523 km² in 2023 from the current 2,952.63 km². Thus, the continuous expansion of two variables revealed that there will be a loss in cropland landcover and will only be 40,215.3680 km² in 2023 from the current 63,139 km² total area, which will be very crucial for agriculture and food security in the country.

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