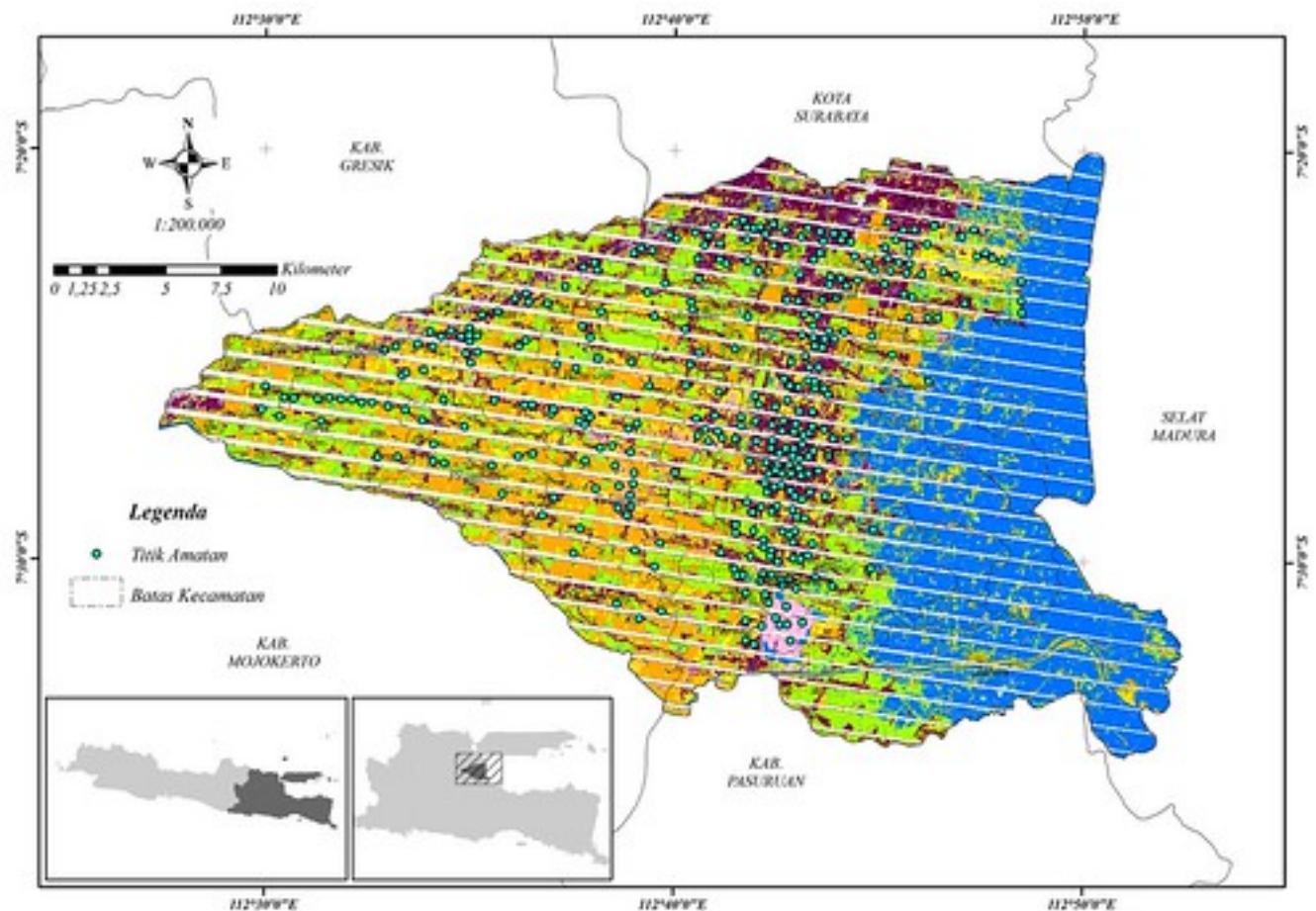


## Bachelor : Surface Temperature Distribution for Consideration of Green Space Development in Sidoarjo Regency

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Sidoarjo Regency had an advantage economic development due to its location bordered to Surabaya City. The increased space requirement for trade & industrial area forced to green space conversion., resulted in temperature increase. Research aims is to evaluate and build the relationship models between the green space distance with surface temperature and provide an alternative green space development in Sidoarjo Regency.



To achieve this goal remote sensing data of Landsat 7 ETM were used. Satellite image processing is done to determine the land cover classification and surface temperature estimation in Sidoarjo Regency. Sample points for regression analysis were determined manually, on the built-up areas. Distance the points to each land cover types (grass and bush, rice field, farm, close vegetation and sparse vegetation ) were made based on Euclidian Distance.

The regression result was presented in the formula below.

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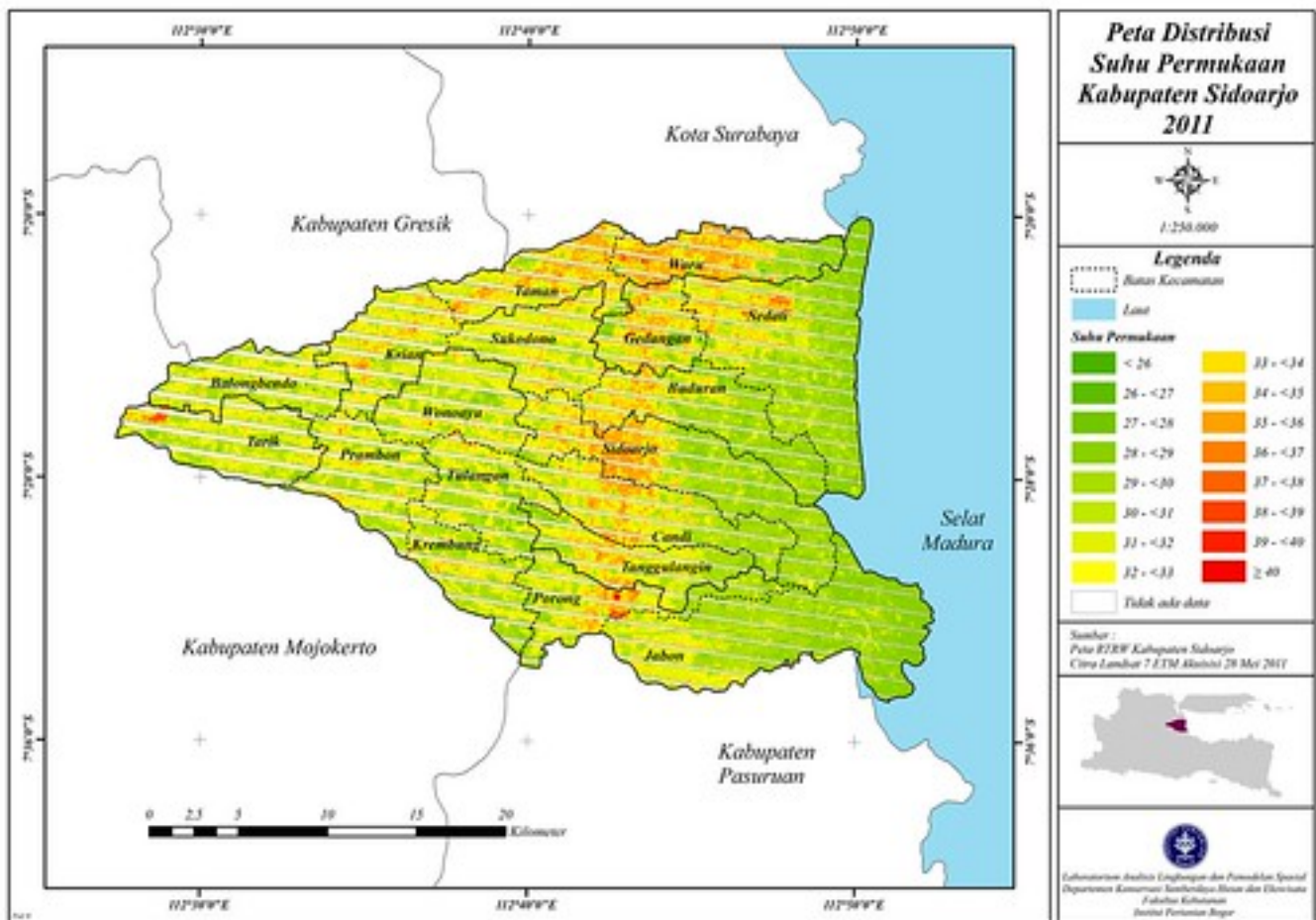
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$$y = 28,7 + 0,00348 x_1 + 0,593 \ln x_2 + 0,565 \ln x_3$$

where  $x_1$  is a distance of observation point to grass and bush,  $x_2$  is a distance of observation point to farm and  $x_3$  is a distance of observation point to rare vegetation.

Based the above equation, close vegetation does not affect significantly to surface temperature because its area was very small. Alternative green space development should be done on location with a high surface temperature, namely : area is around PT Tjiwi Kimia, Sidoarjo and Waru district, Krian-Tarik by pass roads, and roads around the area of Porong mudflow.



Green space development at Sidoarjo Regency could be also promoted by planting trees, creating a vertical garden on home yard, planting and enriching the river border green space, planting and enriching green space of roads and creating a vertical garden at the office or industrial site.

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Keywords: Remote sensing, green space, surface temperature.