

**PEMANFAATAN CITRA GEOEYE-1 DAN SISTEM INFORMASI
GEOGRAFIS UNTUK PEMETAAN KUALITAS LINGKUNGAN
PERMUKIMAN (STUDI DI KECAMATAN SERENGAN, KOTA
SURAKARTA TAHUN 2017)**

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INTISARI

Bertambahnya jumlah penduduk serta meningkatnya aktivitas manusia di Kota Surakarta tidak diikuti cukupnya ketersediaan lahan, memicu densifikasi bangunan permukiman hingga turunnya kualitas lingkungan permukiman. Citra penginderaan jauh dengan resolusi tinggi mampu menyajikan informasi detail kondisi fisik permukiman, sehingga mempermudah proses penilaian kualitas lingkungan permukiman. Penelitian ini bertujuan untuk: (1) Mengkaji tingkat ketelitian citra GeoEye-1 dalam menyadap parameter pemetaan kualitas lingkungan permukiman di Kecamatan Serengan, (2) Mengetahui tingkat dan sebaran kualitas lingkungan permukiman di daerah Kecamatan Serengan, dan (3) Mengetahui faktor dengan pengaruh terbesar terhadap variasi hasil penilaian kualitas lingkungan permukiman di Kecamatan Serengan, Kota Surakarta.

Informasi persebaran penggunaan lahan serta kondisi fisik lingkungan permukiman diperoleh menggunakan interpretasi visual citra *GeoEye-1* Kecamatan Serengan tahun 2015. Kegiatan lapangan dilakukan untuk mengukur tingkat ketelitian interpretasi citra *GeoEye-1* serta untuk memperoleh informasi terkait kondisi sosial. Hasil penilaian terhadap seluruh parameter penelitian diolah menggunakan aplikasi sistem informasi geografis (SIG) dengan memperhatikan faktor penimbang setiap parameter. Analisis faktor yang memiliki pengaruh terbesar terhadap variasi kualitas lingkungan permukiman dilakukan menggunakan tabulasi silang.

Hasil penelitian menunjukkan tingkat ketelitian interpretasi penggunaan lahan sebesar 86,45%, tingkat ketelitian interpretasi terhadap parameter kepadatan permukiman sebesar 86,67%, keteraturan permukiman 85,00%, ukuran bangunan 90,00%, tutupan vegetasi 95,00%, rata-rata lebar jalan 96,67%, kondisi permukaan jalan 90,00%, dan lokasi permukiman sebesar 88,33%. Hasil pemetaan kualitas lingkungan permukiman di Kecamatan Serengan tahun 2017 menunjukkan terdapat 94 blok permukiman memiliki kualitas lingkungan sedang dengan luas 1.071.069,64 m² atau sebesar 58,38% dari luas lahan permukiman, serta terdapat 97 blok permukiman memiliki kualitas lingkungan baik dengan luas 763.520,39m² atau sebesar 41,62% dari luas lahan permukiman. Keteraturan permukiman menjadi parameter dengan pengaruh terbesar dalam menentukan variasi hasil penilaian kualitas lingkungan permukiman.

Kata-kata kunci: kualitas lingkungan permukiman, interpretasi visual, SIG, citra GeoEye-1

***UTILIZATION OF GEOEYE-1 SATELLITE IMAGERY AND GEOGRAPHIC
INFORMATION SYSTEM FOR SETTLEMENT QUALITY MAPPING
(STUDY OF SERENGAN DISTRICT, SURAKARTA IN 2017)***

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ABSTRACT

The increasing number of population and the increasing of human activity in Surakarta is not aligned with adequate land availability, so it triggers densification of settlement of which leads to decrease of settlement quality. Remote sensing imagery with high resolution is capable to provide detailed information related to the physical condition of the settlement, it makes easier to assess the settlement quality. This study aims: (1) to examine the level of accuracy of GeoEye-1 satellite imagery in tapping the parameters used in the process of settlement quality mapping in Serengan District, Surakarta, (2) to know the level and distribution of settlement quality in Serengan District, (3) to know the factors that affect the variation of settlement quality in Serengan District, Surakarta.

Information related to the distribution of land use and the physical condition of the settlement is obtained by using visual interpretation of GeoEye-1 satellite imagery of Serengan District in 2015. Fieldwork was conducted to assess the level of accuracy of visual interpretation and to obtain information related to social condition of the settlement. The results of the assessment of all parameters are used to assess the settlement quality using the application of geographic information system (GIS) by considering the weighing factors of each parameters. Analysis of dominant factors that affects the variation of settlement quality is done using cross tabulation.

The study showed the accuracy level of land use interpretation is 86,45%, settlement density is 86,67%, settlement regularity is 85,00%, building size is 90,00%, vegetation cover is 95,00%, average road width is 96,67%, road surface is 90,00%, and settlement location is 88,33%. Result of mapping of settlement quality in District Serengan 2017 shows there are 94 blocks of settlement has medium environmental quality of which covers 1.071.069,64 m² or equal to 58,38% of the settlement area in Serengan District, and there are 97 blocks of settlement has good environmental quality of which covers 763.520,39 m² or equal to 41,62% of the settlement area. Regularity of settlement becomes the most dominant parameter that affects the variation of settlement quality.

Keyword(s): *Settlement quality, visual interpretation, GIS, GeoEye-1 satellite imagery*