

POTENSI KETERSEDIAAN AIRTANAH BEBAS DAN PEMANFAATANNYA DI WILAYAH PESISIR TIMUR KABUPATEN LAMPUNG SELATAN

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INTISARI

Wilayah pesisir timur Lampung Selatan merupakan bagian hilir dari DAS Sekampung yang termasuk dalam DAS Prioritas di Indonesia karena rendahnya persentase hutan. Kondisi geomorfologis wilayah juga mendukung intensifikasi sektor pertambakan dan pertanian. Oleh sebab itu, penelitian untuk mengidentifikasi potensi ketersediaan dan pemanfaatan airtanah bebas yang berguna untuk analisis sumberdaya air di pesisir perlu dilakukan.

Penelitian dilakukan dengan pengumpulan data primer dan sekunder yang mengacu pada bentuklahan Dataran Fluvial, Beting Gisik, dan Muara Sungai. Data primer merupakan hasil pengukuran lapangan, berupa Kedalaman dan Fluktuasi Muka Airtanah, serta kualitas airtanah (DHL, Cl-, *E-Coli*). Adapun data sekunder adalah nilai Debit airtanah bebas, jumlah penduduk, dan aktivitas sektor non-domestik yang didapatkan dari interpretasi Citra dan Peta Hidrogeologi skala 1:250.000. Hasil pengukuran diolah dengan analisis kuantitatif dan spasial menggunakan peta.

Hasil penelitian menunjukkan potensi ketersediaan airtanah *tinggi* berada di wilayah bentuklahan Dataran Fluvial dengan debit maksimal 10 Liter/detik dan kualitas airtanah yang baik. Potensi *sedang* terdapat pada Beting Gisik dengan debit maksimal 5 Liter/detik dan kualitas airtanah yang termasuk payau. Bentuklahan Muara Sungai memiliki potensi ketersediaan airtanah yang *rendah* dengan debit maksimal 5 Liter/detik dan airtanah teridentifikasi sebagai airtanah asin.

Pemanfaatan airtanah domestik dan non-domestik oleh penduduk adalah sejumlah 1.017.256 m³/Tahun. Berdasarkan perbandingan zonasi potensi ketersediaan dan pemanfaatan airtanah bebas, didapatkan *zona aman* (Dataran Fluvial), *rawan* (Beting Gisik), dan *kritis* (Muara Sungai). Upaya pengelolaan tambak disarankan untuk ditingkatkan agar kualitas airtanah tidak semakin menurun dari intrusi air laut dan limbah tambak, sehingga pemenuhan akan kebutuhan air bersih dan sanitasi secara berkelanjutan dapat tercapai.

Kata Kunci: Pesisir, Ketersediaan Airtanah Bebas, Pemanfaatan Airtanah Bebas.

***THE POTENTIAL OF UNSATURATED GROUNDWATER AVAILABILITY
IN QUANTITY AND QUALITY AS WELL AS ITS UTILIZATION
IN EAST COASTAL AREA OF SOUTH LAMPUNG***

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ABSTRACT

The East Coastal Area of South Lampung is located in the downstream part of Sekampung Watershed, one of the Prioritized Watersheds in Indonesia due to the low percentage of forests. Geomorphologically, the location is suitable for the intensification of both the aquaculture and agricultural sectors. Therefore, this research was conducted to identify the potential of unsaturated groundwater and the amount of its utilization which is important for water resources analysis in the coastal area.

This research was conducted using both primary and secondary data, and analyzed based on landform, namely, the landform of the Fluvial Plain, Coastal landforms, and River Estuaries. Primary Data taken from field measurements are Groundwater Level, the Fluctuations of Groundwater Level, and Groundwater Quality (Water Electricity, Cl⁻, E-Coli). Secondary Data was taken from the Satellite Imagery and Hydrogeology Map of Indonesia to calculate the groundwater utilization in Domestic and non-Domestic sectors, and the value of Groundwater Discharge in the area. Both datas were analyzed using quantitative and spatial approach.

The results showed that the Fluvial Plain landform has the highest potential for unsaturated groundwater availability, indicated by the value of groundwater discharge reaching 10 l/s accompanied by high groundwater quality. The medium potential is found within the Coastal landforms with only 5 l/s of groundwater discharge and is identified as salty groundwater. Whereas the Estuary landforms showed a low quantity of maximum 5 l/s of groundwater discharge as well as being identified of near brine.

The amount of groundwater utilization from Domestic and non-Domestic is 1,017,256 m³/year. A comparison between the availability and utilization of unsaturated groundwater resulted in 3 zones; safe (Fluvial Plain), vulnerable (Coastal landforms), and critical (Estuaries). Consequently, the importance of proper aquaculture management is needed to alleviate the risk in vulnerable areas from seawater intrusion and pond effluents, so that the sustainability of water resources for clean water and sanitation may be achieved.

Keywords: Coastal Area, Unsaturated Groundwater Availability, Unsaturated Groundwater Utilization.