THE POTENTIAL OF GROUNDWATER RESOURCES IN AGRICULTURAL LAND IN THE COASTAL AREA OF SAMAS BEACH AND PANDANSARI BEACH, SANDEN DISTRICT

By : Nur Ahmad Abidin

Advisors by :

Dyah Arbiwati and Susila Herlambang

ABSTRACT

The coastal areas of Samas and Pandansari beaches are areas that are widely used for agricultural business. Coastal soil has very large limiting factors such as high infiltration and low water storage capacity. One of the most important factors in agricultural land in coastal areas is groundwater resources for irrigation. This study aims to assess the qualitative and quantitative potential of groundwater resources on agricultural lands on the coast of Samas Beach and Pandansari Beach and determine the quality of irrigation water according to the *US Salinity Lab Staff*, 1954. The method used in this research is survey and *purposive sampling* based on the distribution of the radius of the area 100 m, 300 m, 500 m and 700 m from the shoreline. The parameters observed were groundwater level, groundwater level subsidence, groundwater flow patterns, SAR, RSC, DHL, and water pH. The coastal areas of Samas Beach and Pandansari Beach have an average SAR value of 2.1949 mg/L, an average RSC value of 0.5453 mg/L, an average DHL value of 462.833, and a pH value in the range of 6.5. -7.3. The highest SAR value of 6.7764 mg/L at TS 12 (sample point 12) is at a radius of 700 m from the shoreline, the highest RSC value is 1.7888 mg/L at TS 5 (sample point 5) at a radius of 300 m from the shoreline, and the highest DHL value is 820 S/cm at TS 12 (sample point 12) is located at a radius of 700 m from the shoreline. Seawater intrusion that occurred at 12 sample points with a moderately high intrusion level of 9 sample points, moderate intrusion, low intrusion, and high intrusion each of 1 sample point. The average groundwater level is 3.682 m and is in moderate condition with a decrease in groundwater level due to pumping for 1 hour is 1.32-1.85 m, and there is no decrease in groundwater level at the nearest sample point. Groundwater flow patterns move towards locations that have a deeper groundwater table. Assessment of irrigation water quality according to the USSL diagram of 12 samples, 11 samples were in the C2-S1 classification and 1 sample was in the C3-S1 classification.

Keywords : Salinity, irrigation water quality, groundwater table depth, groundwater flow