

## **A REVIEW OF GROUNDWATER ISSUES IN JAKARTA**

### **Abstract n°2310**

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**KEYWORDS:** Jakarta, groundwater, groundwater depletion

Studying the Jakarta groundwater basin has revealed opportunities to improve groundwater planning and management. This paper reviewed about some groundwater issues in Jakarta regarding its problems to develop the solutions. This paper aims to- compile the comprehensive hydrogeology information of Jakarta Basins, establish links between the social and technical aspects of groundwater management regarding rapid groundwater depletion and aquifer degradation, and find out guiding principles and criteria for establishing a sustainable plan of groundwater management through practical actions. The existing groundwater problems in Jakarta have been known, i.e. polluted groundwater, seawater intrusion, land subsidence, and depletion of groundwater. The polluted groundwater is indicated by nitrate contamination impacted by human activities. The seawater intrusion has been proved by Na-Cl water from well about 40 km inland. The land subsidence occurs in Jakarta due to the rapid abstraction of groundwater accounted for 17.5% of all factors. The depletion of groundwater has been identified from expansion and movement of groundwater potential depression in the northern Jakarta from 1985 to 2008. Some solutions are proposed to tackle the problems. To reduce groundwater pollution which 70% contributed by domestic sewage can be solved by installing an integrated sewage treatment should be built in Jakarta to reduce the domestic contamination. Seawater intrusion can be reduced by injecting groundwater into the deep aquifer to increase hydraulic potential in the deep aquifer near the coastal area. Land subsidence can be tackled by stopping groundwater abstraction and injecting water to the aquifer to maintain pore pressure. The groundwater depletion would be prevented by limiting groundwater abstraction and considering use other water sources, i.e. surface water, rainwater, and used water. Recharge area which lies on Bogor area should also be managed to maintain recharge of rainfall back to the aquifer.

