

Residential Settlement Increases Ground Water Pollution

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Data from Environment Ministry in 1997 states that the Bay of Jakarta is the most polluted bays in Indonesia. This is due to higher human activities that brings with them household waste. This is exacerbated with the lack of facilities to process the huge waste disposal and the emergence of pesticide and fertiliser sedimentation due to agricultural activities in this area.

“The higher human activity, the bigger household waste. If not managed will, this will affect ground water quality,” said Cahyadi Setiawan, S.Si., M.Si. during his doctoral promotion at Faculty of Geography UGM on Friday (26/5).

Cahyadi defending his dissertation titled *Relations between Residential Land Use and Free Ground Water in Fluviomarine Land in Jakarta*, he explained that Jakarta has some 40% areas that are under the sea surface during high tides and they form coastal swamp that makes flooding possible, or named as fluviomarine because it is affected by fluvial and marine process.

Apart from this geomorphology, he said the city spatial use and physical construction as well as significant population increase can also affect the repeat period of flooding, as well as water pollution threats.



In his dissertation, he observed the links between total income of households in a month with the need of water per day and the proportion of use of ground water to meet daily needs, in addition to the relation model between use of residential land and pollution of free ground water.

He found out that the bigger total income of the family per month, the bigger the need of water. The bigger the total income of the family per month, the smaller proportion of use of ground water to meet water needs.

“The increase in income affects the capacity of the family to have alternative resource of water need apart from ground water, such as tap water, sold water, and bottled water,” said Cahyadi.

He also found the tendency of increased concentration and ground water pollution in areas close to market, landfill, hospital, and factory around settlements. This, in his opinion, enhances previous opinion that pollution from those resources has polluted river area, ground water, and Bay of Jakarta.

“The sanitation condition of the settlement which is poor is also indicated to increase the pollution, such as dense buildings, endemic, disasters, distance with the closest buildings, and flows from septic tanks,” he said.

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