

## Identification of urban water problems in Indonesia

Author: Andi Besse Rimba

Center for Remote Sensing and Ocean Sciences (CReSOS), Udayana University, PB Sudirman Street,  
Denpasar, Bali 80232, Indonesia. *a.besserimba@yahoo.com*

At the present state, limited water resources have already marked a major global problem: In addition, water-related hazards account for around 90% of all natural hazards globally, marking floods and droughts as the two most destructive natural threats to human societies. Furthermore, the extensive groundwater withdrawal caused the land subsidence especially in lowland area. This study will identify the urban water problems (i.e., flood, drought, and land subsidence which triggered by groundwater withdrawal) and land use from satellite imageries data. The Flood vulnerability by Analytical Hierarchy Process (AHP) and combining with IRI C, or HEC RAS tools will identify the flood-vulnerable area and the depth of flood. Drought area will be recognized by Standardized Precipitation Index (SPI) by using satellite imagery and will be verified by meteorological data from the ground station. The land subsidence is side impact of groundwater withdrawal. Thus, in this study, the land subsidence will be considered as the impact of urban water problems. Land subsidence will be calculated by applying DinSAR method. By determining urban water problems is supposed to provide spatial information related to urban water problems and impact to the community. This research becomes an input for mitigation research.