

## **BIMWAM Project: Building an integrated methodology for water resource assessment and management in urban coastal areas of Mindanao Island, southern Philippines**

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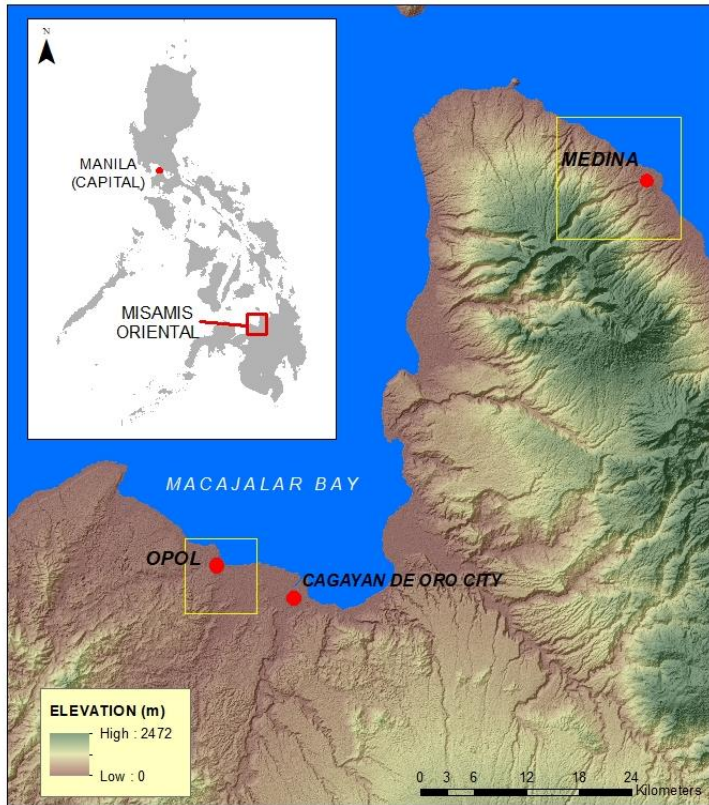
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A five-year research and development project, from 2018 to 2023, is currently implemented in Mindanao Island, southern Philippines, to build an integrated methodology for water resource assessment and management in urban coastal areas. This initiative is undertaken through the partnership between three Belgian universities and two Philippine universities and collaborations with two local water service cooperatives and the local government. One of the project's major components is a hydrogeological investigation to assess the state of the water resources in the coastal municipalities of Medina and Opol. Target study sites in these municipalities are in volcanic and sedimentary geological environments (Fig.1). Pressures on its water resources are mounting due to rapid urbanization and increase in economic activity leading to excessive withdrawal of groundwater for domestic, agricultural and industrial uses. Incidence of saline water supply has been reported by a number of coastal communities indicating saltwater intrusion in aquifers. Expected output from this investigation will include local water resource maps, aquifer characteristics, salt-water intrusion map, modelling of density-dependent groundwater flow in the coastal aquifers, and location of potential catchment areas for drinking water supply. Through the participatory process, this investigation, together with the project's socio-economic and water network engineering studies, will be used in developing the methodology to improve water cooperatives' management decisions and actions to ensure access to adequate and safe drinking water. Preliminary results include existing local data on water resources, hydrology and hydrogeology of the target sites and observed data from the project's newly established monitoring network.

### **Acknowledgment**

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**Legend**

- Stream network
- ▭ Municipal boundary of study area
- Macajalar Bay
- Built - up area

**Geology**

- Alluvium, fluvialite, lacustrine, paludal and beach deposits
- Marine and terrestrial sediments
- Largely marine clastics
- Volcanic plain/ volcanic piedmont deposits
- Non-active cones (generally pyroxene andesite)



Source: Mines and Geosciences Bureau (Geology dataset, through <http://portal.onegeology.org/OnegeologyGlobal/>); National Mapping and Resource Information Authority (stream network and built up area, 2010), Philippine Government

**Figure 1.** Location and geology of the study sites.