

## Digital elevation model (DEM) extraction from google earth: a study in SUNGAI MUAR watershed

### Abstract

Topographic data or DEMs are commonly perceived as providing loaded information for hydrological modelling. However, this information severely limited, and most users rely on published topographic maps or DEMs produced by government agencies. This paper proposes an alternative method of generating DEM by using online source of elevation data which is easier and free. The result shows that, the percent difference of the watershed boundary is 0.19% by using Google Earth's elevation data as it compared with the same watershed area which delineated using 20 meter interval contour data obtained from JUPEM (Department of Survey and Mapping Malaysia). Firstly, the location of the study area identified in Google Earth, divided into thirty-six areas and marked using provided mark functions in Google Earth. The coordinates were exported to an online application tools named Terrain Zonum Solutions for extracting 5000 elevation points for each thirty-six areas. These points were uploaded and processed in ArcGIS software (version 9.3.1) to generate the DEM. As to compare the reliability of the elevation values that extracted from Google Earth, the DEM was utilized and integrated with river line data to delineate Sungai Muar's watershed boundary using ArcHydro version 1.4 tool. Based on the result, this study proposes an alternative method in obtaining a DEM data for a wide area which is traditionally time consuming and costly.