



Can environmental perceptions tell us what models can't?

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Many developing regions lack the sufficient long term, reliable data required to create and calibrate hydrologic models. Short term data collection regimes and satellites can be used to obtain some or all of the parameters required for modeling, however, these data are often limited in their spatial and temporal coverage. In recent decades there has been a movement to integrate local knowledge into such studies, but there are questions as to how representative this social information can be. This study aims to explore this question through a case study of floods in southwest Haiti. By creating a spatial flood extent map for the region using remote sensing and matching it to environmental risk perceptions survey information, we aim to better understand whether social science field methods could be successfully integrated into engineering based studies of flooding. The number of floods and their durations are calculated from satellite observations of surface reflectance taken from the Moderate Resolution Imaging Spectroradiometer (MODIS) instruments operated by NASA. Supplementary flood information regarding the number of people killed, the number of people displaced, and the total economic damage done by flooding is obtained from the Dartmouth Flood Observatory. The survey information is based on a 2012 household survey by Columbia University's Center for International Earth Science Information Network (CIESIN). The results from this research are expected to lead to more comprehensive studies in Haiti and in other similar regions regarding environmental data collection using local knowledge. More specifically, we hope that the findings can help to assess whether historical flood information could be collected using social science field methods and used to supplement gaps in physical data in the region.