

FUSING EARTH OBSERVATION WITH LOCAL-LEVEL HEALTH DATA IN A VIRTUAL GLOBE PLATFORM FOR STRENGTHENING PUBLIC HEALTH CAPACITY IN KISUMU, KENYA

J. Seaquist^{*a} B. Elmqvist^b L. Olsson^b P. Östergren^c

^b Lund University, Centre for Sustainability Studies (LUCSUS), Box 170, 221 00 , Lund, Sweden

^c Lund University, Dept of Clinical Sciences, Division of social medicine and global health, CRC, Entrance 72, UMAS, Hus 28, plan 12, 205 02 , Malmö, Sweden

^a Lund University, Dept of Earth and Ecosystem Sciences, Sölvegatan 12, 223 62 Lund, Sweden

Technical Commission VII Symposium 2010

KEY WORDS: Developing Countries, Internet/Web, Medicine, Decision Support, IKONOS, High resolution

ABSTRACT:

Vector-borne diseases are a threat to public health in developing countries and climate change is expected to exacerbate this burden. Remote sensing data are used for monitoring the environmental correlates of such diseases at the synoptic scale. However, data collected at the community level are critical for understanding the mechanisms that underlie the spread of such diseases as well as for developing local prevention and treatment measures. It is here that high resolution remote sensing can play a role. But resource-poor environments have a limited capacity for implementing disease monitoring, prevention and treatment programs due to prohibitive costs and lack of expertise. This work assesses the potential of virtual globe environments like Google Earth for fusing high resolution remote sensing data with community-level health data for strengthening on-site public health capacity in Kisumu, Kenya. High-resolution imagery available through, for example, Google Earth, can be used to help identify risk factors that can lead to the spread of vector-borne diseases, as well as develop community-level infrastructure layers for visualizing spatiotemporal patterns of morbidity and mortality. This information can be used to develop hypotheses for further understanding the spread of disease. The use of virtual globes for local health monitoring, communication, and advocacy in resource-poor settings is underscored by the availability of free, high quality geo-referenced satellite imagery, ease of use on or off-line, flexible visualization options, and data format portability.

TOPIC: Remote sensing applications

ALTERNATIVE TOPIC: Operational remote sensing programs