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REMOTE SENSING FOR DISEASE PREVENTION IN NIGERIA

Abstract

The capability to use remote sensing data for disease prediction has been demonstrated in a number of research papers. However, the ability to use this technology on an operational basis is not yet well understood. Beyond technical capability, an operational system requires stable funding, reliable data, trained operators, and political support to make use of the data.

This paper seeks to examine the feasibility of creating an operational system through a case study of the use of remote sensing data for prediction and prevention of vector-borne disease outbreaks in Nigeria. In addition to technical feasibility, this paper looks at the availability and cost of data relevant to Nigeria, including remote sensing data as well as supplementary GIS data. In addition, it examines the technical and human infrastructure required to perform analyses, including the person-hours needed for operation and the training level required for personnel. The availability of this infrastructure in Nigeria is considered.

Even if prediction of disease outbreaks is possible, without political action, disease prevention will not occur. Therefore, this paper also looks at the policy requirements for ensuring this data can be effectively acted upon. This includes examining the accuracy of prediction data and lead time for predictions, as well as the methods for disease prevention, which all affect the feasibility of making use of the prediction data.

Given the technical, economic, and political requirements for an operational system, the paper makes recommendations on the implementation of such a system. This includes how such a system should be set up, and whether a national or multi-national system would be more effective. This case study has the capability to affect future policy making and provide guidance for putting a promising space application into operational use.