

Flood Monitoring Using River Flow Forecasting Model with Special Reference to Luangwa River

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Abstract

The rainfall estimates give sufficiently accurate information to map areas which have received the minimum rainfall necessary for outbreaks of pests such as locusts, thus cutting down the cost of searching for likely outbreak sites. At the other end of the scale, satellite rainfall estimates can be used to give timely warnings of changes in river levels and the *likelihood of floods* in large river catchments. Real time area rainfall estimates on a catchment scale can be used to predict river flow, with a lead time depending on how quickly the rainfall enters the river system. For a large catchment, this lead time can be several days. However, hydrological applications require knowledge of rainfall patterns and average amounts over large catchments. The data products described so far can satisfy many of need for such applications – average rainfall amounts, fractional wet area, vegetation cover information, can constitute direct input into rainfall runoff models able to provide estimates of river level for catchments which may be poorly instrumented. Here I wish to present some examples of hydrological applications of these data sets that arise from the Remote Sensing Unit work – river flow forecasting models and seasonal patterns of flooding in the Luangwa river and down the stream. I also wish to outline ways in which a more widespread use of this data by the Zambian institutions can be achieved.