

## **F-28: An analysis of the magnitude of floods in the Kalu Ganga Basin**

P Liyanarachchi

*(Dept of Geography, University of Ruhuna Matara)*

The Kalu Ganga Basin is the largest river basin and its drainage area covers 2719 sq km. Flood is one of the very serious environmental problems in the Kalu Ganga Basin. The objectives of the study were to identify and assess the critical flood levels and direction of flood trends in the Kalu Ganga Basin.

The study was based on hydrological data such as annual maximum discharge and flood height data from 1957 to 1994 at the Putupaula and Ellagawa gauging stations.

During the recorded period at Putupaula, 4 types of critical flood levels namely minor flood, median flood, major flood and dangerous flood were identified. Minor flood, occurs between 3.9 to 4.5 m water level, flood duration was from 1 to 3 days and the inundated area is the flood way area. Flood damage is less. Median floods occur between 4.0 to 5.0 m and the duration is 3 to 6 days. Flood damages are somewhat high. During the recorded period, 20 floods occurred. The flood water extended to the flood storage areas. Major floods occurred from 5 to 6 m and the duration was 1 or 2 weeks. The flood damages were very high. 12 floods occurred. The flood water extended to flood fringe areas. Dangerous floods occurred over 6 m water level and duration was over 2 weeks. Flood water inundated all over the floodplain. 6 floods occurred.

The annual maximum flood levels randomly fluctuate and gradually increase. Future flood problem will be severe and the comprehensive flood mitigation measures are needed.

Financial assistance by NARESA (Research grant RG/92/ss/17) is acknowledged