EROSION AND SEDIMENTATION OF LOWER KEUM RIVER BASIN IN KOREA

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The basement rock of upstream part of Keum River Valley is composed of Precambrian gneiss which is competent to weathering. That of the lower and mid stream valley, however, is characterized with Mesozoic granites so vulnerable to weathering. The grain size of the present river bottom in that part is dominant with sands in comparison to river banks which are composed of muddy old tidal river deposits. These river banks are rich in silt fraction and continuously detected a considerable amount of erosion in both meandering river bank and present river bed of rapid stream velocity. By implementation of remote sensing and imagery data, the temporal changes of river bed sediments for about last 10 years were successfully monitored. Observed as an important phenomenon is that the river bed has been risen since 1994 when an embankment (Dyke) was constructed in the estuarine river mouth. In addition with an aid of detail river bed topographic map drawn by this investigation, it reveals that the annual rate of sedimentation is summed up 5cm/year for the last 11 years' period. Lastly based on GIS cartographic methods, erosion hazard map was drawn in order to explain the provenance of fluvial sediments and to foretell hazard potential along the slope of this river basin. It is estimated that the most erodible area is associated with the distribution of biotite granite which is also main source of the fluvial sediments.