

**Morphometric Factors Influencing Settlements in the
Lesser Himalayas: A Case Study of the Dhunsir Gad,
a Tributary of the Alaknanda River**

Hari Ballabh*, Srinivasan Pillay and Viratha Hariram

*School of Agriculture, Earth and Environmental Sciences, University of KwaZulu-Natal,
Westville Campus, Durban 4000, South Africa*

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ABSTRACT Dhunsir Gad, a tributary of the Alaknanda River, in the Lesser Himalayas of India is a small but important mountain watershed. The watershed possesses a myriad of geomorphic landforms that affect construction of settlements. Settlements are usually chosen based on environmental and economic benefits. In the Himalayan Mountains, this is not always achieved due to the high potential for natural hazards, particularly flash flooding and mass wasting. The Dhunsir Gad watershed was separated into three zones based on settlement density and altitude. Within each zone, key geomorphic and anthropogenic factors (climate, geology, landforms, slope character, drainage character, relief and landuse) that influenced settlement location were identified. Watershed analyses were carried out using topographical maps, aerial photographs and satellite imagery. Field surveys were also conducted to gather data on settlements and to verify map data. The mid-valley zone was found to be the most favorable for the location, containing 18 settlements (82%) and was probably a compromise between relative safety and environmental benefits. As a consequence of adverse environmental conditions only two settlements were found above 1600 m and below 1000 m altitudes. The study showed that mountain inhabitants optimized settlement locations based on changing geomorphology and natural hazards.