

Analysis of Krishna and Godavari river outflows to evaluate effects on river mouth changes

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Abstract Water resources projects are meant to store water or divert water mainly for irrigating crops and supplying water for drinking and industrial needs. The role of human activity has become a significant modifier of the hydrologic budget in a river basin. As the timing and quantity of river water have direct impact on the fragile ecosystem at the mouth of a river, especially along wetlands and delta formations, any changes in flow regime can cause irreparable damage to delta growth and its shoreline. In this paper, the impact of upstream developments and the resulting reduced outflows to the mouth of river delta of two large river basins draining peninsular India are studied. Variation in annual outflows to the sea of the two rivers, as observed at the most downstream gauge sites from 1973 to 2008, is analysed to evaluate the scale of reduction in river discharges to the sea to understand the consequences on the rate of delta progression and other consequential changes at the river mouths.

Key words diversions; outflows; upstream development; deltas; sediments; shoreline; erosion; deposition