

HYDROELECTRIC DEVELOPMENT AND ASSOCIATED RISKS TO THE FISHERY RESOURCES OF THE KALI GANDAKI RIVER ^{AFS}

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Several hydroelectric projects are proposed in Nepal because of growing energy demands, the extreme topography, and its vast water resources. One affected river is the Kali Gandaki, which flows through a 4000 m elevational change. It originates on the Tibetan plateau and flows south through the Himalayan Mountains before turning east through the foothill and Terai regions, and emptying into the Bay of Bengal. Construction began on the Kali Gandaki 'A' Hydroelectric Project in 1997 and is now nearly complete. The 144-megawatt project will be operated as run-of-the-river with limited peaking. Operations will have major effects on a fishery comprised of 57 species from twelve families. These fish include resident and migratory types, with each exhibiting specific life-history strategies that require accessibility to suitable habitat. As a consequence of this project, fish will endure a loss of habitat, stress and mortality from entrainment, and blocked passage. Protection strategies include a trap-and-haul transport program, intake screens, release facility, instream flows, and hatchery supplementation. However, biological information is limited, and the proposed strategies may not be completely effective for all

species and all life stages. Therefore, an adaptive management approach is integrated into a mitigation plan that will involve on-going research to continually improve management policies protecting the fishery.