

5 YEAR PERSPECTIVE PLAN FOR DAM SAFETY.

Dams are national assets and their role for water supply, irrigation, flood control and hydro power generation is well known. They also pose hazard in the event of its failure. To assure safety of these dams, regular health monitoring and maintenance is very much essential. Orissa has 163 nos. of large dams (as per ICOLD criteria) and safety of these dams is a prime concern for the state. The annual fund allotment for the upkeep of these dams has been paltry and the deferred maintenance in some cases has warranted major rehabilitation measures. The state of Orissa has shown interest to participate in proposed World Bank funded Dam Rehabilitation and Improvement Project so as to rehabilitate 38 nos., of large dams out of which 5 are major 14 medium and 19 are minor irrigation project dams. Under the project and physical features will be upgraded in and around the selected dam to enhance the safety status. There will be two main components in the project (i) rehabilitation and improvement of dams and connected appurtenances, (ii) Dam safety institutional strengthening. In addition, there would be a project management component.

The project development objective of DRIP would be to improve the safety and operational performance of these selected existing dams in a sustainable manner. The DRIP would aim at assuring the full reservoir capacity of project dam, achieving effective utilization of stored water and managing, monitoring long term performance of dam.

Under Rehabilitation and improvement such works as treatment of leakages from masonry / concrete dams, reduction of seepage from earth dam and from foundation, improving dam drainage, installing seepage measuring devices, re-sectioning of earth dam, improving the ability to withstand higher flood, providing additional flood handling of dam, structural strengthening of dam if required, improvement of spillway, increasing discharging capacity of spillway, head regulator, gates and their operating mechanism, improvement of stilling basins improvement of approach road, dam crest road, road to assess other parts of dam, improvement of communication, installation of real time telemetry system, improving lighting arrangement in and around the dam will be taken up. It has been also proposed to carry out the hydrological assessment, sediment

management, preparation of Emergency Action Plan, flood plane mapping etc. in this project.

Under the dam safety institutional strengthening, the existing Dam Safety Organisation will be strengthened by inducting more no. of technical persons and specialists. Training in hazard and vulnerability assessment, hydrological analysis, structural design, dam break analysis, risk analysis will be provided. Appropriate State of the art logistic support will be provided to the State DSO.

State Project Management unit will be established under State Dam Safety Organisation which will be headed by State Project Director. The SPMU will recruit consulting services for design, supervision and other specialized tasks. The total project cost has been estimated to be Rs.226.3 crores including physical and price contingency @ 20% each. The Phasing of the project work has been assumed at 10% in year 1, 15% in year 2 and 25% in year 3, year 4 and year 5.

As the rehabilitation works typically provide many uncertainties at the time of design, and require additional works during the contract implementation, the physical contingency have been provided.

Year wise break-up of project cost.

Year 1	22.63 Crores
Year 2	33.96 Crores
Year 3	56.57 Crores
Year 4	56.57 Crores
Year 5	56.57 Crores

The primary beneficiaries are urban and rural communities who will benefit from the improved operational performance for their livelihood, agricultural need and water supply needs. The improvement of both institutional and physical features will reduce the risk of dam failure which will consequently prevent or minimize the damages to downstream property and environment, loss of life and eventually dam replacement.

The life of dam and reservoir will be extended through these interventions of remedial works and improvement of dam operation.

