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 **199** 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 (DRIP) so as to rehabilitate 26 nos. of large dams out of which 5 are major, 15 medium and 6 are minor irrigation project dams. Under the project, the physical features will be upgraded in and around the selected dam to enhance the safety status. There will be three main components in project (i) Dam Rehabilitation and Improvement, (ii) Dam Safety Institutional Strengthening, & (iii) State Project Management.

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 pane 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.**147.76 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 provided many uncertainties at the time of design, and require additional works during the contract implementation, the physical contingency have been provided.

Year wise work programme

Year	Cost in Lakh Rupees	Activities
2012-13	47.22	Project preparation, clearance approval and agreement. Commencement of rehabilitation work for five 1st year project dams.
2013-14	65.91	Rehabilitation of 5 dams continued. Hydrological and Structural review of 21 dams.
2014-15	445.31	Work of 5 dams to continue. Rehabilitation of 21 dams commences.
2015-16	3510.36	Rehabilitation of 21 dams in progress.
2016-17	6100.00	Rehabilitation of 24 dams continues.
2017-18	4607.20	Project Completion.

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.