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Restoration and Improvement of Blasted Kalmadu Dam and its Socio-Economic impact on the Displaced Northern Community

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ABSTRACT

Northern war of Sri Lanka has caused immeasurable damage to the culture, economy, wealth and health of the community and inflicted great suffering on humanity. One of the most remarkable events of the war was the blast of Kalmadu dam in January 2009 which carried 11.7 million cubic meters of water intended for agriculture and livestock. Kalmadu Dam is fed by Nethali aru River basin, having a Catchment area of 6800 ha and an area irrigateable under gravity irrigation system is 1397 ha, which is 0.2% of the total extent of paddy land in Lanka. It consists of 1.575 km long earth embankment with a maximum height of 8 m a 122.5 m long concrete clear over fall spillway and two sluices. Bund-top level, high-flood level and full-supply level are, respectively, 32.46 m, 31.40m and 30.18m above mean sea level (msl). Both sluices are corn tower type with a spill level of 22.9 m above msl. Barrel length and diameter of right and left bank sluices are 50 & 1 m, 46.3 and 0.75 m, respectively, with maximum discharge rates of 6.2m^3/s, 2.97 m^3/s.

Due to an intended blast, entire reservoir water has passed through a 125 m long breach and resulted in a 15 m deep scour hole. An initial investigation estimated that 80,000 m^3 of earth works is required to close the breach. Materials in the tank bed contain silt, SC, Gravel, stones and debris and these can be used in the repair of the breached dam. The closure of the breach is expected to be completed before the forthcoming *Maha* season to assist in the resettling of people of this scheme for their livelihood.

The Kalmadu settlement scheme consisted of 18,335 people consisting 4647 families, about 1500 ha of irrigated lands, 2 hospitals, 9 schools, 20 Kovils and a Church, all of which depended entirely on the Kalmadu tank and other 20 minor tanks augmented by the Kalmadu tank, for all water requirements for drinking, domestic use, irrigation and other livelihood and industries. In addition, it is a national loss as the estimated capacity of paddy production is 8382 tons/year after the completion of the construction. Average per capita consumption of 108 kg amounting to 23.6% of the production would self sustain the Kalmadu area and rest 76.4% can be fed to the national market. Disappearance of well-water after the blast indicates that Kalmadu Tank indirectly contributed to the drinking water supply by recharge. Reconstruction of the dam would thus provide drinking water for the resettled Internally Displaced People. Native and endemic plants species recorded are 86% and 8% respectively. Fauna and flora found are common and habitats are secondary in origin. Similar habitats have been identified in the surrounding area, hence, there is no possible threats to any important ecosystems. After repairing the dam, Kalmadu Tank can be brought to its operational efficiency, and overall impact would be positive because it would result in more favourable conditions for the aquatic life in the reservoir and the river downstream. Thus, restoration of breached Kalmadu dam would bring positive benefits and impacts on Socio-Economic Environment for the Resettled Internally Displaced People in Kalmadu.