

## FROM THE EDITOR...

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The irrigation works in ancient Sri Lanka, the earliest dating from about 400 BCE, in the reign of King Pandukabhaya and under continuous development for the next thousand years, were some of the most complex and sophisticated irrigation systems of the ancient world. Ancient Sri Lankan kings built number of tanks, ponds, canals and anicuts which are spotted throughout the dry zone of Sri Lanka. At the zenith, the irrigation engineering expertise shown by Sri Lankans have been sought by foreign nations as indicated by Kalhana's 12<sup>th</sup> century historical epic "Rajatharangani". As far as anicuts are concerned, Sri Lankans excelled appreciably in the construction of Elhera, Thekkam, Angamedilla and Minipe anicuts. Among these ancient anicuts, the Minipe anicut was constructed across the Mahaweli river by King Datusena in the 5<sup>th</sup> Century AD and later on by King Aggabodi I. It is said that the water of the Mahaweli river was taken as far as Trincomalee. Minipe has been a continuous population center until the 17<sup>th</sup> Century AD.



In 1941, the Irrigation Department restored the Minipe anicut by constructing a low flow weir across the Mahaweli river together with an intake structure to divert water into the left bank (LB) canal, and in 1962 the length of the LB canal was extended. In 1983, under the Accelerated Mahaweli Development Project, the low flow weir was replaced with a new weir which also diverted water into the 32 km long Right Bank (RB) Trans Basin Canal. The RB canal which has the discharge capacity 64 m<sup>3</sup>/s of water, carries the Mahaweli water to Ulhitiya-Rathkinda twin reservoirs and then to the MaduruOya reservoir through an underground tunnel. 74 km long LB canal carries 22 m<sup>3</sup>/s discharge and feeds 7472 ha of irrigable land in the valley between the LB canal and the Mahaweli river. The left and right banks are operated by the Department of Irrigation and the Mahaweli Authority, respectively.

The Minipe anicut is located about 3.2 km downstream from the Rantambe reservoir, the last hydropower generating scheme on the Mahaweli river. The natural flow from the Rantambe reservoir as well as the generation flow through the turbines is collected at the Minipe anicut, which then diverts water into LB and RB canals. During peak power generation periods, both turbines are activated and the resulting outflow at the Rantambe is 130 m<sup>3</sup>/s, which can increase up to 180 m<sup>3</sup>/s when both turbines operate at full efficiency. Since this amount is higher than the cumulative carrying capacity of both canals, excess water spills over the Minipe anicut. During non-peak hours only, one turbine is operated, which meets the irrigation requirement of both canals. With the power generation pattern during peak hours and non-peak hours, the water level at the Minipe pool fluctuates throughout the day between spilling over the weir and a minimum pool level of 112 masl which is similar to the average river bed level. Due to this fluctuation, the water levels in diversion canals also vary, which result in water management difficult in the LB canal.

Under the present ADB funded Mahaweli Water Security Investment Program, the crest levels of the existing anicut weir will be raised from 114.0 masl to 117.5 masl, in order to minimize the spilling over the Minipe pool, and to optimize the water usage of the system. The two principal components of the Minipe left bank canal rehabilitation project are (a) the heightening of the existing Minipe anicut and (b) the rehabilitation of the existing Minipe LB canal. The raising will form an ogee shape weir along the entire length of the existing weir and the left bank approach channel training wall. The contract amount is LKR 1.86 billion and the main contractor is China Gezhouba Group Co. Ltd. and project duration is two and half years. The project was commenced in May 2018. With the rehabilitation of the Minipe anicut, the sustainability of the existing water resource planning and management can be strengthened. With the initiation of irrigation projects such as raising the Minipe anicut, Sri Lanka inches towards its former glory of an advanced agrarian society.

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**Editor, 'ENGINEER', Journal of The Institution of Engineers**