

Regulating Uma Oya-Thalpitigala Reservoir Project

Uma Oya is the major tributary of Mahaweli River starting from Nuwara Eliya and traverses Welimada and Kandaketiya areas in Badulla district. It confluences with Mahaweli at the upstream of Rantabe reservoir. The drainage area of Uma Oya is about 720 sq.kms..

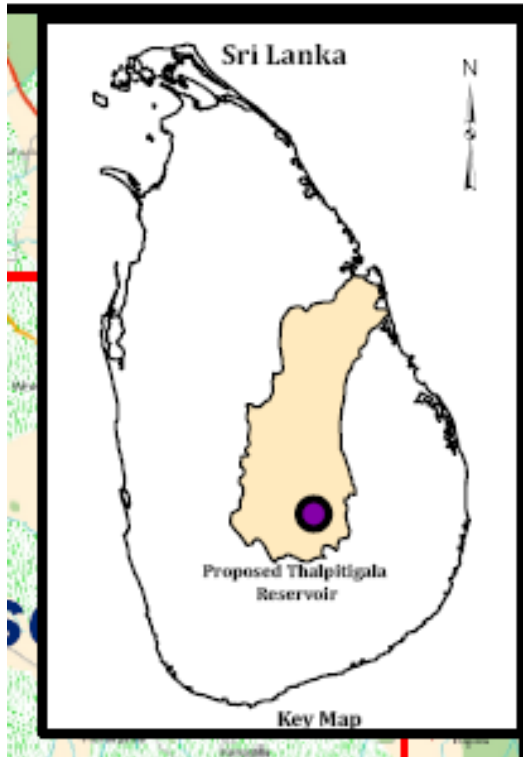


Fig 01 Location of Thalpitigala Reservoir

Uma Oya diversion project was commenced in 2008. According to design, the basin intercepts from Puhulpola, diverting nearly 254sq.km of catchment water to Kiridi Oya. Hence downstream will suffer with an annual water deficit of nearly 188MCM. Hence Bathmedilla scheme in downstream of Uma Oya and the whole cascade of Mahaweli after Rantebe will experience some water deficit in future. In order to compensate the said effect, department of irrigation proposed as a must to have a reservoir in the downstream to regulate and store water of the balance catchment of Uma Oya.

Accordingly the proposal of “Lower Uma Oya Multipurpose Reservoir Project” at Thalpitigala was brought into discussion in year 2012. The reservoir site situated across Uma Oya 215 km

away from Colombo. The road to site falls in Hali Ela - Thalpitigala road, 24 km from Hali Ela town. During last 6 years, many scholars and institutions carried out many investigations of the area and produced the feasibility report, Initial Environmental Assessment (IEA), geological reports etc. and established the preliminary successfulness of the project. As the studies showed, the benefits comes to the nation by the project are very impressive.

The project has a capacity of generating 51.6GWH of electricity per annum. The irrigation scheme just below the project, Bathmedilla will have sufficient water supply for 810Ha throughout the year. Other than that there will be an excess water for new cultivations of nearly 400Ha. The power generated water is directly can be utilized for irrigation work by Bathmedilla anicut. Whatever the water used for agriculture will again drain to Mahaveli system and continue in the cascade below Rantabe.

The environmental benefits are very important in this project. As the water level increase in the reservoir, the micro climate will enhanced with sufficient water and the aridness will disappear. This may cause in wildlife protection as well. The reservoirs in the Mahaweli system suffer with heavy sedimentation. As it says Uma Oya is the most turbulent flow which brings the largest amount of sediment to Mahaweli system. Hence Thalpitigala reservoir is having a feature of sediment trapping as well.

The chronical kidney decease (CKD) is one of the major health issue in Sri Lanka. In order to irradiate CKD, safe drinking water is a must. Therefore the project is looking forward to use freshwater in catchment in reservoir for providing safe drinking water for downstream with the collaboration of water board (NWS&DB). According to the water head available in the project, the whole supply can be achieved with gravity flow..

The reservoir dam falls between two high mountains bridging Uwa Paranagama and Kandaketiya, reducing the travelling length from 70 km to 10 km. Therefore in future the main road joins the East part with Uva will be on Thalpitigala Reservoir dam. The project itself will develop the infrastructure of

Kandaketiya area. Other than that eventually the area will be developed with the crowded /well connected road network.

In order to achieve the said benefits, Ministry of Irrigation has proposed a reservoir with a capacity of 15.6 MCM just above the Bathmedilla scheme. The valley in this location is very deep and narrow. Therefore this amount of water can be captured with a short length (280m) with a tall (Height-45.70m) dam. The dam is going to be constructed by the latest technology. This will be the first Roller Compacted Concrete (RCC) dam by irrigation Department. The top width will be 6 m facilitating two lane road over the dam,

The project consist with a power generation with two 7.5MW turbines. Nearly 1.3 km length tunnel will be constructed in a very safe subsurface to carry water from dam to power station. Fig 02 shows how the water for power, agriculture and downstream against inflow will be available during whole year, when dam is constructed.

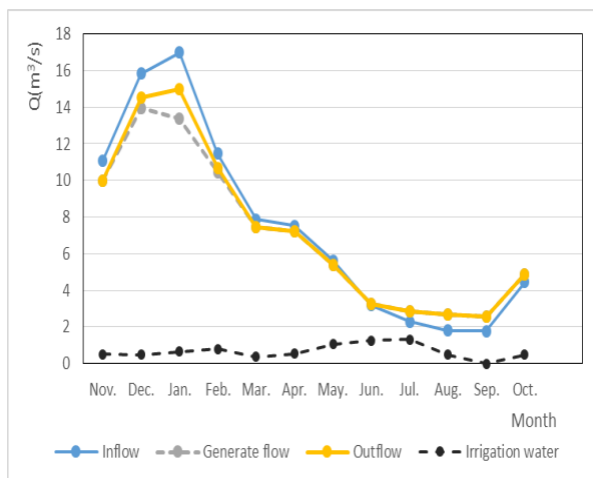


Fig 02 Operation Study of Regulated flows

According to the hydrology of the location the tank will function against power generation as shown in fig-03.

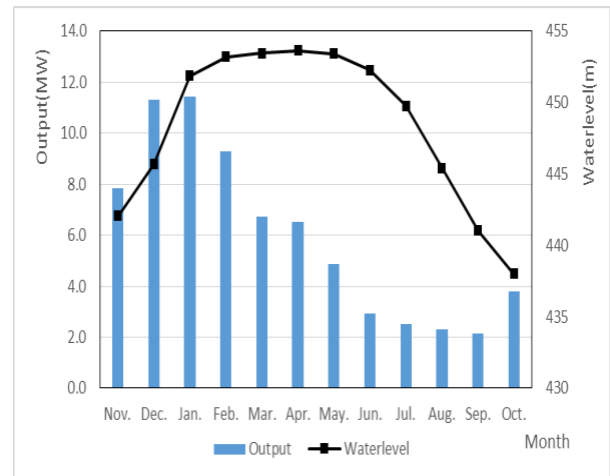


Fig 03 Tank Water level Vs Power Generation

The construction of the head works (Dam and power station) will be done by world reputed Chinese company Sino- Hydro, who served to Moragahakanda and Kalugaga projects. The head work cost is nearly 174 million USD. The funding is done by Exim Bank of China as a loan. Ministry of Irrigation is the client of the project and the project implementation unit (PIU) comprising with Sri Lankan engineers represents the client.

The downstream and infrastructure development will be done by PIU with Government of Sri Lanka (GOSL) funding.

The project period is 4 years and GOSL is looking forward to commence the head work construction before end of first quarter of this year. The PIU and contractor are doing the geological investigation and detail designing of project. The land acquisition work is done by PIU collaborated with Government Agent-Badulla. PIU is committed to safeguard the environment and as well as enhancement of quality of life of people living in area and closely working with Central Environment Authority and other relevant stake holders. Many downstream developments have already started by PIU and Department of Irrigation. Accordingly the surroundings and path for smooth proceedings of construction has established to add many benefits through Talpitigala Reservoir Project in near future.

Eng B.G.T Lasantha Guruge (Project Director)