

Preservation of Minneriya tank by applying ancient technologies and wisdom

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Introduction

The Minneriya reservoir is a man-made, non-tidal water retention reservoir, having been built in the third century AD with a catchment area of 24,000 ha. Today the tank supplies water to 11, 500 downstream families, 8900ha of paddy in the Minneriya scheme, provides resources for the human and other living beings. (Lanka information Minneriya-national-park)

Minneriya reservoir is being challenged to remain in its original glory due to degradation of its catchment. Some of the threats are clearing of vegetation for firewood, Chena cultivation and resulting siltation due to soil erosion from the degraded catchment. Further, overfishing and poaching also

reported. Therefore, there is a need to conserve the Minneriya reservoir which gives enormous benefits to people and wildlife. The general objective of this study is to propose suitable technologies of ancient Sri Lankan's to conserve the Minneriya tank.

Methodology

Literature review is the main source of information in this study. Also, used GIS analysis for the identification changes took place over time in the tank area using Google images. The researcher collect tank area changes data from 2000 to 2014, within 14 year period as using secondary data those are analysis using only GIS as the tool.

Results and discussion

According to the identification of the literature review, it could identify that the Minneriya tank, its catchment area, fish and wild-life populations are today under pressure from various activities. Such as, un-managed grazing livestock, soil erosion in the catchment area, unmanaged pesticide use in the catchment area and lack of fisheries management within the tank area. According to the identification of the GIS and map comparison it could identify that within 14 year period, there was a reduction of the tank area. In the year 2000 the tank area was 22.89 km², but it had been fallen in 2014 to 22.37 km².

Minneriya tank and its catchment should be managed for the ecosystem services that it generates. Tank area can be preserved by using managed grazing livestock, fisheries management within the tank area as main causes is sedimentation from degraded watersheds. If the tank catchment area is conserved, the threats to Minneriya tank substantially reduce. By applying Sri Lankan's ancient technologies related to irrigation and water

management the tank catchment can be conserved so the tank.

Ancient Sri Lankans not only built colossal reservoirs, river diversion structures, canals, and canal structures, but also established procedures and proclamations for proper management of water resources.

Ancient Sri Lankans have used much originality and ingenuity in developing their irrigation systems. Rainwater which fell on a catchment was collected in a cascade of small tanks, and used and re-used many times before coming to a large reservoir. In addition to supplying water for cultivation of paddy, the water stored in the cascade system was used for purposes such as domestic bathing needs, livestock needs, and inland fisheries. These series of small tanks also reduced the silting problem in the large reservoir, and they were maintained collectively by the villagers (Ranweera, 2010).

In ancient Sri Lanka all the villagers are interested to protect and conserve tanks. Rules and regulations are created by the villagers themselves. Tank consists

with different components. Among them, it is important that “Gilma area” and “wawthaula”. It was prohibited that walking, cultivating, deforesting, and gathering the cows as well as “wawthaula area. ‘Wawismaththa’ is located above Prohibited hunting in the “wawismaththa”. After the drought season and then it comes the rainy season it should be clean the tank bound, sluice, and canals. This is come from ancient civilization as the major task. If it is avoided of cleaning the tank by villagers it is fined and hurdled for the villagers by the “warigasabha”. According to that hurdle it is prohibited that use the tank water and prohibited that went to the tank. Therefore, clean the tank is a main task of the villagers (Dalupotha, 2005).

This rules and regulations are common to the Minneriya tank also. After the end of the ancient Is being challenged to remain in its original glory due to degradation of its catchment. The other threats are clearing of vegetation for firewood, Chena cultivation and resulting siltation due to soil erosion from degraded catchment. Further, overfishing and poaching also

to the ‘wawihaththawa’. All the regulations and laws are common to the “wawismaththa” as well as “wawihaththawa”. If it is done chena cultivation, it should be done without any effects to the “wawihaththawa”. And

hydrologic civilization this rules and regulations to protect the tank area is went to the destructions. Due to the destruction of these rules and regulations as well as the ancient wisdom and ancient technology. According to challenges of Minneriya tank, as the degradation of catchment forest result of decreased the water capacity of the reservoir. Due to the explanation of population and the settlement near the catchment area forest. Due the tourism industry they polluted the tank water is being challenged the Minneriya tank also like the other tank system in Sri Lanka. Minneriyatank

reported. However, in the ancient times this all activities are prohibited and it was the hurdled. Further, the tank is maintained very well with the conservation. Although, by applying above mentioned activities that are identified from the ancient Sri

Lanka it can be used to preservethe tank. Therefore, by applying ancient wisdom and the technology it can be preserve the tank as the tank catchment area in Minneriya.

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