

A lush green forest with a small stream flowing over mossy rocks. The scene is vibrant and natural, with sunlight filtering through the dense canopy of trees. The water in the stream is clear and white with foam as it flows over the rocks.

NATURE BASED SOLUTION FOR WATER MANAGEMENT:

RESTORATION OF SMALL TANK CASCADES SYSTEMS IN SRI LANKA

Padmi Ranasinghe

Doctoral Student

**University of Texas at Arlington, USA
United Nations University-CRIS**

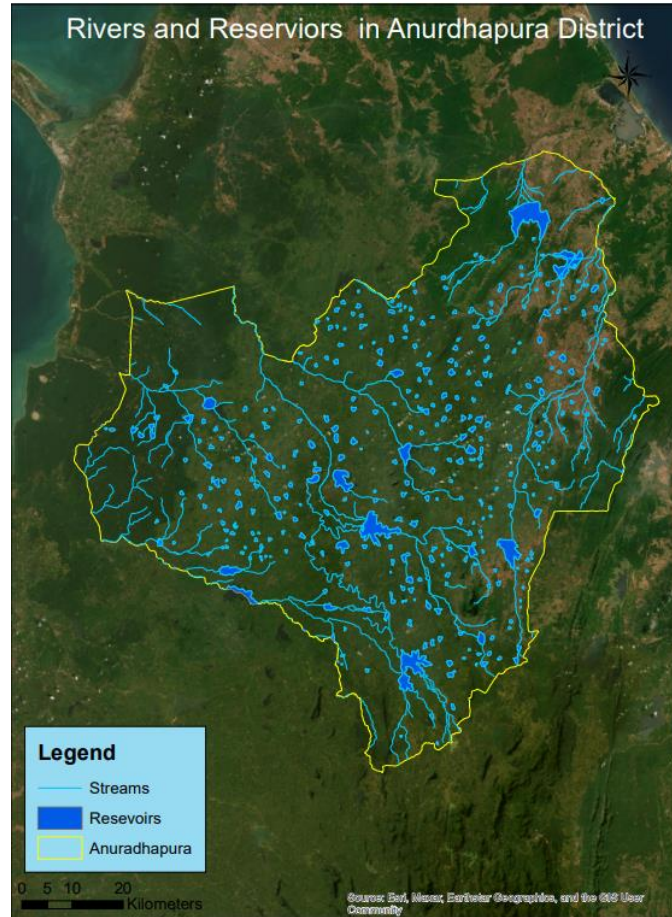


NATURE BASED SOLUTIONS

- Nature-based Solutions are actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously benefiting people and nature.
- Address societal challenges through the protection, sustainable management and restoration of both natural and modified ecosystems, benefiting both biodiversity and human well-being.
- Underpinned by benefits that flow from healthy ecosystems.
- Solution for climate change, disaster risk reduction, food security and water security, biodiversity loss and human health, and economic development.

• *Source: IUCN*

ANCIENT IRRIGATION SYSTEM

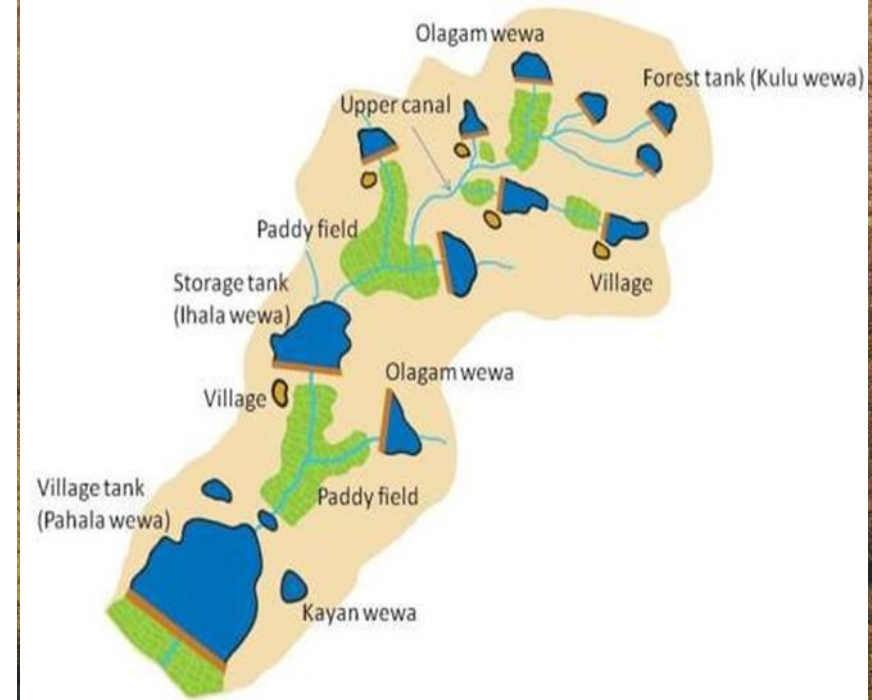


2,500+years old irrigation system.

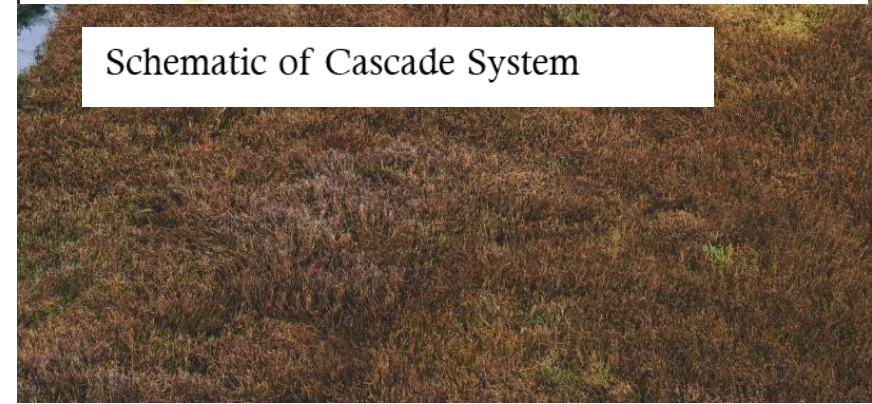
Most tanks are in the Northcentral regions of the country.

CASCADE SYSTEM

- Cascade systems are interconnected irrigation tanks within a micro (or meso) watershed that collect rainwater and surface runoff and store it for later use.
- Remarkable ancient adaptations to extreme climatic conditions in dry zone.
- water is available year-round in the dry zone (where rainfall is less than 1,750 millimeters yearly with a distinct dry season) and flood mitigation during the rainy season.
- Approximately 1,160 small tank cascade systems in Sri Lanka
- 457 cascades in the North Central Province.

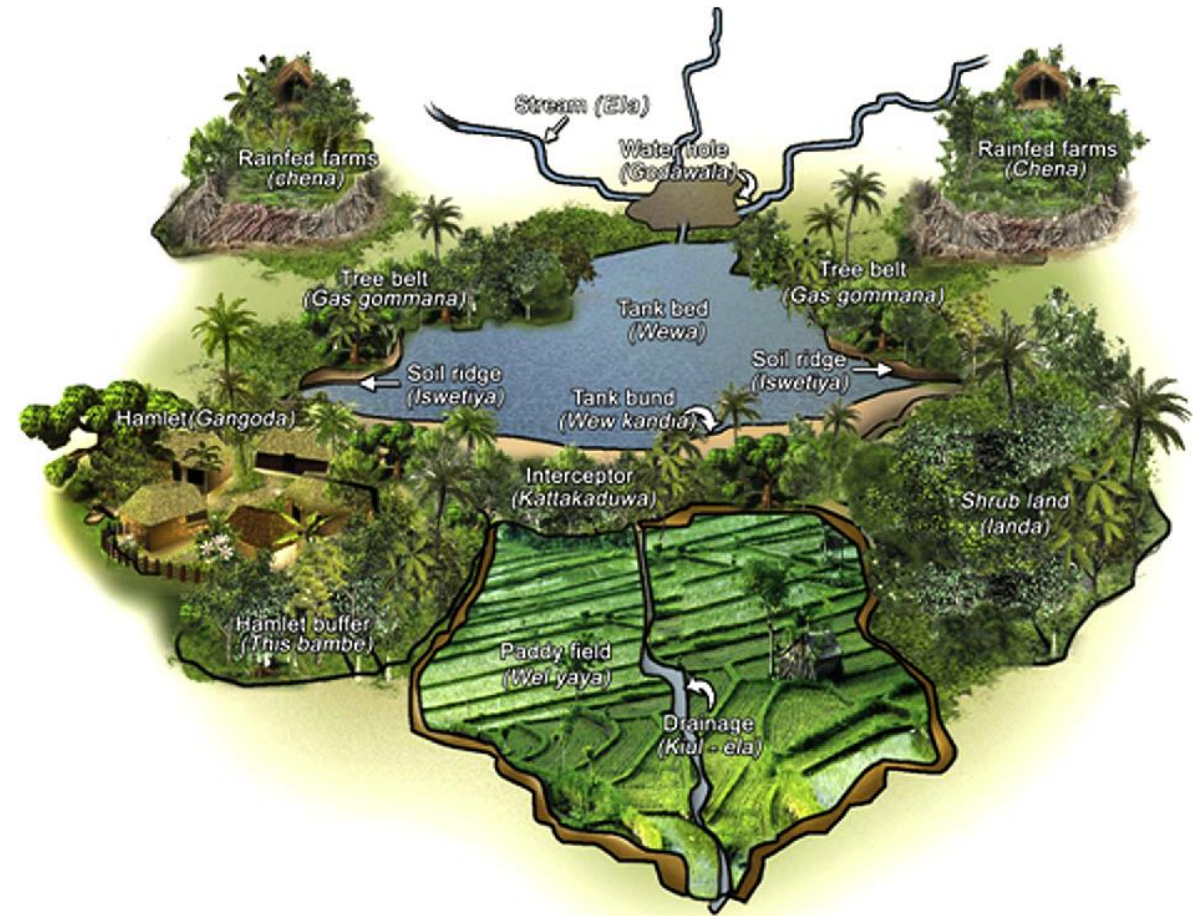


Schematic of Cascade System



PARTS OF A RESERVOIR

- Consist of physical, ecological, and social features - each feature has specific function in the cascade .
- Consists of water storage tanks, connecting streams, forests, natural sedimentation/buffer systems, wetlands, agricultural areas, and communities.
- Recognized as a Globally Important Agricultural Heritage System (GIAHS) by the Food and Agriculture Organization of the United Nations (FAO).





EO DATA CONTRIBUTION

- Due to poor maintenance, most of these systems are not functioning to their full potential today.
 - Sedimentation and siltation, degradation of stone channels, and encroachment on drainage channels all cause tank water to spread, which adversely impacts its performance.
 - Earth observation data are vital to identifying the cascade systems and associated issues, water flow, sediment deposition, and assessing surrounding land uses such as forest cover decline, wetland degradation, developments, and build-ups, etc.
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THANK YOU!

