PROJECT COMPLETION REPORT

Construction of Community Rain water Harvesting Tank at Gangewadiya

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Lanka Rain Water Harvesting Forum

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Introduction

Integrated Coastal Zone Management (ICZM) Plan and Pre-feasibility level investment proposals were prepared in the ADB RETA project for integrated management of the Puttalam Lagoon system. To address some of the key issues in the area, it was agreed to implement selected short-term activities in the area on pilot project basis. Such activities would help to continue the interest and the participation of the communities in the preparatory activities undertaken during the last 18-20 months.

In carryout out these activities IUCN recognised the scarcity of clean drinking water and the hardship endured by the community living in the fishing village of Gangewadiya.

Therefore, in partnership with Lanka Rain Water Harvesting Forum (LR WHF), IUCN implemented a project to construct a community rainwater harvesting tank with the participation of the Gangewadiya community to provide water for domestic consumption.

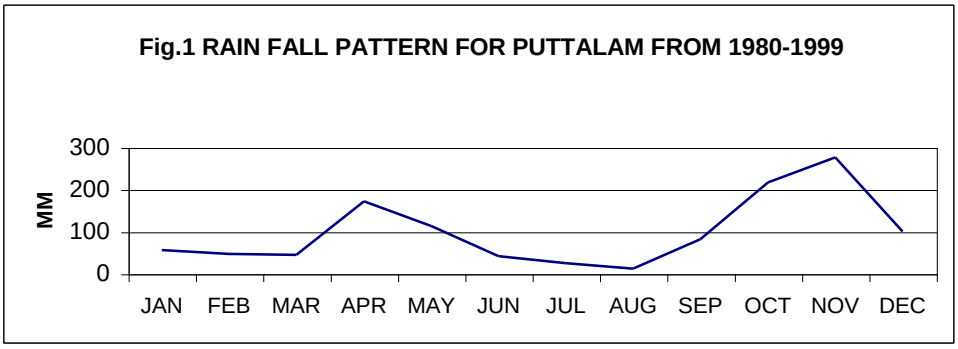
The need.

The Village Gangewadiya is situated in the Vananthwillu Divisional Secretariat of Puttlam district. Although the ground water levels in the Puttlam district is high, it is highly saline and can not be used for drinking water. Gangewadiya is situated at the Northern end of the Puttalm lagoon on the Kala oya estuary, ground water is highly saline. The fishing community living there has to get their drinking water either from Bowsers or from the Kala oya by walking almost a mile upstream.

During the dry season when sea water intrude to the Kala Oya they have to go up stream at least 4 miles to obtain fresh water. Also, due to increasing pollution upstream of Kala oya, this water too is thought to be highly contaminate

Feasibility

The most important concept in rainwater harvesting is "collection of rainwater while it is raining and preserving it for future uses". In domestic rainwater harvesting the roof area acts as the catchments gutters for delivery and tank for storage. The quality of harvested rainwater greatly depends on the cleanness of roof, use of first flush, preservation and maintenance of the system. The annual average rainfall in Puttlam district is 1180 mm. The rainfall is biannual. A short spell of rain falls during the S-W Monsoons from April to May and Longer rain period is during the N-E monsoon from September to December (figure 1).



The village planned hospital building has a tiled roof of surface area of 55 m^2.
The total rainwater that can be collected from this roof annually is
C= Area x Rainfall x run off co-efficiency
C= 55 m^2 x 1.180m x 0.8 (for tiles roof)
C= 51.92 m^3 or 51, 920 litres

However, since it is not economical to build a large enough tank to collect all the rain falling off this roof, a tank capacity of 8 m^3 was selected as economically suitable size for this location.

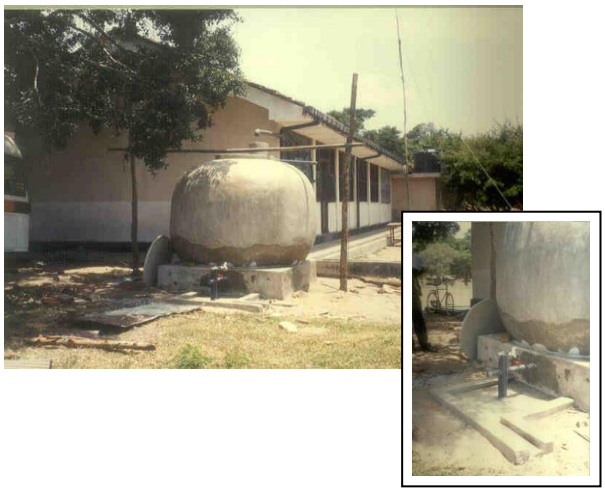
A tank of 8 m^3 will provide the village daily 80 litres of water during the driest period. Since driest period is 3 months (fig.1)

Planned Project Activity

1. Site inspection to determine the type of rain water harvesting tank to be constructed.
2. Awareness to the community on the concept of rain water harvesting, benefits and experience from around the country.
3. Construction of 8 m^3 rain water harvesting tank in participation of village community.
4. Instruct the community on Operation and maintenance of the system

Progress and outcome

1. On inspection of site it was decided to construct an above ground ferroecment tank since the soil is sandy and water table is high at this location, therefore not suitable for under ground tank.
2. Concept of rain water harvesting was explained to a group of 25 villagers of men, women and children and a video tilted "Gift from the sky" which comprised of experience of rain water harvesting in 5 district in Sri Lanka was shown to the villagers. The video was shown using a lap top computer since there is no electricity available in the village. Information leaflet were distributed among the villagers. Photographs of different types of rain water harvesting tanks were shown to the villagers.
3. Materials required to construct the 8 m3 with 2 ft stand were purchased from Puttlam and delivered to site. A trained mason from Madurankuliya was given the task of constructing the tank with participation of community. The reusable frame and relevant metal bars as well as tools for construction was provided free of charge by LRWHF.
4. The tank was completed within 11 days. However, there was a delay during construction due to irregular participation of village members.
5. The rain water system was completed, with 8 m^3 fero-cement tank, a raised base, inlet filter, outlet (tap), wash out, control valve, 2 flush flush devices and guttering of 60 ft length. (see picture)



6. Instruction was given to village fishing society chairman and members on how to operate and maintain the system.

Recommendations

- Adopt/establish a controlled distribution/sharing of water to households. This can be done by keeping control valve locked up and authorised person distribute equal quantity of water to households.
- Form a rain water tank maintenance committee within the village society.
- Monitoring the water quality in the tank water over a period and inform the community on the quality.
- To conduct a good hygiene sanitation practice training workshop for the community.

- Introduce Solar Water Disinfections method (SODIS) as drinking water treatment. (see enclosed leaflet)
- In future construction of community rain water tanks to establish a better system to obtain village participation. I.e. collect money to hire unskilled labour for construction, obtain contribution through provision of local materials, ect..