



Assessing Drought and Enabling Adaptation through Rain Water Harvesting

HAZARD (S): Drought, Climate Change

GEOGRAPHIC SCOPE: Idamelanda, Hanguranketa, Central Sri Lanka.

KEYWORDS: Rain Water Harvesting, Climate, Drought, Mitigation, Adaptation

Project Summary:

Drought is the most frequent disaster in Sri Lanka. Rainwater harvesting (RWH) is simple and economical mitigation option. We developed a systematic basis to assess drought and design RWH system based on climate data and develop a proposal for the installation of an RWH unit in Idamelanda village in Hanguranketa sub-district in Eastern Hill Slopes of Sri Lanka.

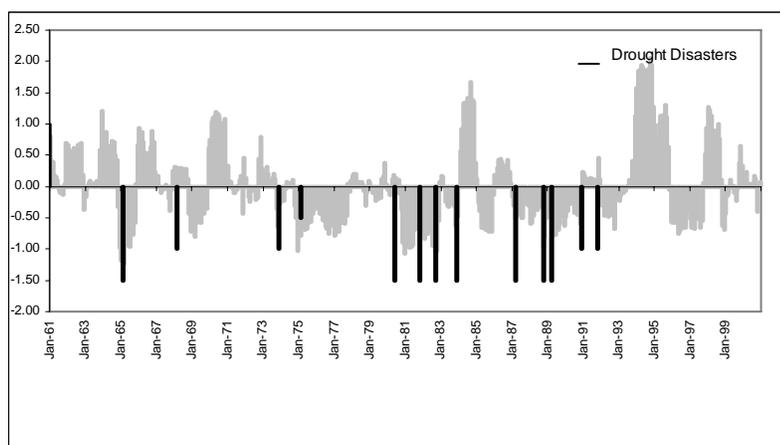


Photo: A RWH unit under construction in the premises of community computer training center in Idamelanda Grama Niladhari division. Credit: Janaki Chandimala.

The main objectives of this project was to (a) generate indicators for drought risk (b) Interpret risk of water scarcity and (c) develop a proposal for a RWH unit at Idamelanda. Initially, we surveyed villagers and officials in the region who confirmed the prevalence of drought and the need for mitigation. We used rainfall and temperature data to generate meteorological drought indices. Comparison of the drought indices with relief records for the eastern slopes region confirm that these measures bear on the reality of drought. RWH is needed for domestic use and home garden use in Idamelanda. The key elements in the design of an RWH unit are the size of the collector (roof) and the size of storage. Using the indicators of water scarcity and meteorological data, we developed a computer program to estimate the collector and storage sizes to a given reliability. We developed a draft proposal for implementation of an RWH unit with the participation of the community.

Key Findings

- There is acceptance of risk of drought among the people and officials of Idamelanda; they recognize the viability of RWH as a mitigation option.
- Assessing drought risk with meteorological data is reliable
- The methodology for designing the collector and storage tank for RWH unit gave reasonable results.
- A model proposal has been generated for a community based RWH system.
- This methodology can be extended to other parts of Sri Lanka and elsewhere.



Graph: The shaded line is a meteorological drought index (WASP) for the Eastern Slopes of Sri Lanka from 1961 to 2000. Negative WASP indicates water scarcity. The droughts are indicated as a bar of height in proportion to relief payments. There is a correspondance between WASP and relief payments.

Recommendations for Partner Organizations

- Pursue proposal on 'Assessing Drought and Enabling Adaptation through Rain Water Harvesting'.
- Pursue research on the role of Climate Change on Drought and RWH.

Recommendations for Team Members

- Publish research papers on assessing drought and on RWH unit design.

Recommendations for Technical Resource Persons

- Use our methodology to account for climate factors in water scarcity assessment and RWH design.
- Approach us for further information.



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Additional information related to this project can be found at:
www.climate.lk

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