Project Title: Safe Disaster Resilient Drinking Water to Floods and Drought Prone areas in Sri Lanka

Final Report

Cooperate Agreement No: AID 383-A-16-00001

Contents

Lanka Rain Water Harvesting Forum

2025

1. Reporting Period: 1st October 2016- 25th January 2025

2. Project Summary

This is the final reports of the 9 year project titled Safe Disaster Resilient Drinking Water to Floods and Drought Prone areas in Sri Lanka. For the initial 5 years the project (2016 – 2021) was implemented by Lanka Rain Water Harvesting Forum (LRWHF) and Participatory Learning and Action Methodologies Foundation (PALM) (sub grantee) where LRWHF operated in the North and Uva Province (Kilinochchi, Mullativu, Badulla and Moneragala districts) and PALM was working in the Eastern Province (Batticaloe and Trincomalee districts). LRWHF's activities was extended for a further period of 3 years to include Mannar district in the Northern Province and Anuradhpura district in the North Central province. The overall objective of this project was to provide more efficient disaster-resilient water supplies to vulnerable communities and: strengthened capacity of disaster-prone communities and institutionalization of DRR policies and practices related to flood and drought management.

Specific objective of LRWHF was to promote rainwater harvesting systems as a practical, disaster resilient water supply option for dry zone areas by demonstration and building capacity of officials, professionals, community and school children on rain water harvesting and ground water recharging technology. Whereas, PALM worked to ensure a flood and drought resilient and sustainable, safe drinking water supply to the identified highly vulnerable households that face regular floods and droughts in the Eastern Province.

Overall outcome of the LRWHF project were:

- 188 demonstration rain water harvesting systems installed in schools providing safe disaster resilient drinking water to 60, 980 school children and teachers. (28,688 Males, 32,292 females)
- 11 demonstration rainwater Harvesting systems were installed in rural hospitals and clinics providing safe drinking water to 1,675 patients and staff
- 1259 domestic rainwater harvesting systems were installed giving safe drinking water at their door step to 5493 people (2698 Males, 2795 females)
- 98 rainwater harvesting systems were installed through loan cum grant basis benefiting 448 persons (210 Males, 238)
- 403 wells were recharged with rainwater to improve water quality and quantity benefiting 1,998 persons (997 Males, 1001 Females)
- 384 disused RWHS installed by other organization previously were repaired and rehabilitated.
- 990 government officials and private sector persons were made aware on RWH technology and benefits
- 122 professionals were trained on rainwater harvesting and ground water recharge which include 8 from the south Asian region.

- 5659 school children were trained on rainwater harvesting, water conservation and climate change through programs on weather stations monitoring, home gardening, water quiz, wall art painting, RWH model designing and debating.
- 242 masons both male and female were trained on construction of RWH systems
- Established a fully equipped training facilities at the Rain Center
- South Asia Rainwater Network (SARNET) was launched which has over 200 registered members from 20 countries within the south Asian region as well as outside. Young Rainwater Champion program which has over 100 members within SARNET hosted 14 webinars and a training program.
- 18 Webinars on SARNET platform were held on various topics related to rainwater harvesting, water conservation, climate change etc. Held a competition to compose a song on RWH and winning song was launched and promoted at a ceremony held at the Indian Cultural center Colombo.
- 3 International conference were held, 2 in person and 1 virtual which was participated by over 585 professionals, practitioners and researcher on rainwater harvesting.
- 4 resource centers were established in Mullativu, Badulla, Moneragala and Colombo district to provide information to the community on the technologies and benefits of rainwater harvesting.
- 3 short films were developed by young film makers.
- 39 media events, publications were conducted to promote rainwater harvesting and project activities
- Conducted research on well water recharge in Badulla, Kilinochchi, Mannar and Anuradhapura.
- Conducted a Monitoring and Evaluation survey of existing 1002 RWH system and 63 non RWH users in 15 districts in Sri Lanka
- Initiated a research on health benefits of drinking rainwater especially for Chronic Kidney Disease patients in Badulla district.
- Produce a 20 minutes video on project activities and impacts.

3. Project Indicators versus Outcome

Planned performance Indicators	Target	Achieved/ Impact
a. Objective Demonstrate and provide disaster-resilient water supplies to vulnerable communities in CKDU, war-affected and dry zone areas of Sri Lanka		
1. Demonstration of RWH systems in schools	191 school RWHS to benefit 57300 children and teachers	188 RWHS were installed in schools providing 60,980 school children and teacher with safe disaster resilient drinking water source.
2. Install RWHS in Rural Hospitals	10 RWHS installed in rural hospitals/clinic benefiting 1000 patients and staff	11 rural hospitals/medical clinics have been installed with RWHS providing safe drinking water to 1675 patients and staff

3. Construct RWH systems HH	Install 1233 domestic RWH in households benefitting 4932	1259 RWHS were installed in households providing safe disaster resilient drinking water to 5493 people
4. Financing 98 HH RWH systems through the loan scheme	Install 98 RWHS through loan system in households	98 RWHS were installed through loan cum grant scheme benefitting 448 people. Interest free loan of 20% of the installation cost was provided by IDEAS (nonprofit NGO) of which 82% has been recovered.
5. Install well water recharge systems	Install 402 well recharge systems to improve well quality and quantity. Benefiting 1608 householders	403 Well recharge systems were installed which improved well water quality and quantity benefiting 1998 people.
6. Repair and rehabilitate disused RWHS	Repair an rehabilitate 400 disused RWHS	384 RWHS in households were repaired and rehabilitated with the support of the beneficiaries
b. Objective : Build the capacity of officials, professionals, and communities on rainwater harvesting technology to influence the policies and practices of flood and drought management		
7. Establish a training Facilities at the Rain Center	To develop the facilities of the auditorium and dormitory to conduct training programs	Fully equipped, training facilities, with audio and video facilities, air conditioned, generator and solar powered with accommodation for 8 people is established and have been extensively used for training programs, workshop and meetings.
8. Mason training programs	Train 59 masons on installation of RWHS	241 masons including 75 women were trained on installation of RWH system. Additional training program was conducted with the support of CAPNET Lanka. One women mason trained during the project conducted a training program to SARNET member orgaisation in Nepal.
9. Awareness programs for officials and private sector	Conduct 11 awareness programs on RWH and GWR to 660 officials of government and private sector	990 government officials and private sector person were made aware through 11 programs in the 6 districts and in Colombo
10. Training to Professional on RWH and GWR	To train 120 professional on planning, designing and implementation of RWHS and GWR	122 professional were trained on planning, designing and implementation of RWHS and GWR. 5 model systems were designed and implemented by the participants.
11. Train and make school children aware on RWH and Climate change	To build the capacity of 4197 school children on the benefit of RWH and GWR through various programs	5659 school children were trained and made aware on RWH, GWR and climate change through programs such as weather station monitoring, wall art competitions, water quizzes, home gardening development, model competitions, debate competitions.

12. Establish a network on RWH in South Asia	Establish a network on RWH for sharing experience, research and knowledge from South Asia and strengthened and supported to conduct webinars, coordinate its activity and maintain a web site and social media platform.	South Asia Network for RWH (SARNET) was established and the network currently has over 200 registered members, a web, and an active social media presence on platforms such as LinkedIn, Facebook, and Twitter, and its knowledge exchange platform for over 100 young water professionals through the Young Rainwater Champions (YRC). It has held 18 webinars over various topics featuring experts in the field of rainwater, water and climate change. Held 2 International conference (1 virtual, 1 hybrid).
13. Establish resource centers in 4 districts	Establish resource centers in 4 districts to provide information on benefits and technology on RWH & GWR to public	3 resource booths were designed and established in the premises of the NWS&DB in Badulla, Moneragala, Mullativu. One resource booth was established at the Rain Center Colombo. The booth display various models of RWH, information on different types and benefits of RWH. Officials at the centers were trained on providing the necessary information.
14. Hold conference to share experience on RWH	To hold conference National/ International share experiences of the project activities and also similar experiences from researchers and practitioners within the country and other countries. This is to support regional and international network in rainwater harvesting (South Asia Rainwater Network-SARNET) and link and influence DRR activities in the region	3 International conference were held (1 in person, 1 virtual and 1 hybrid, they were participated by over 585 professionals, practitioners and researcher on rainwater harvesting. Over 73 research papers, success stories, best practices and videos were presented from Sri Lanka, South Asian regional and other countries. All proceedings were published.
15. Develop short films to promote RWH	To launch Island wide competition for short film on RWH for DRR in any of the 3 languages targeting journalist, amateur photographers, film makers and students to get involved and report on DRR activities	Out of the 53 synopsis and concepts notes were received, 11 were selected and given training through 5 workshops to develop on pre-production of short film. 3 short film were produced by young film makers which won wards nationally and Internationally. There are H2O, Hope through a hole, Money & Water.
16. Research on ground water recharging	Monitor and study 60 Recharging system implemented by the project in different districts for their effectiveness on water quantity as well as water	Over 100 wells installed with recharging facilities in Kilinochchi, Mullativu, Mannar, Vavuniya and Anuradhapura were monitored every week for water quality and quantity. Finding from the study was published in National journal (Open University) and International Conference (SARNET) and book.

	quality for period of 12- 24 months	
17. Research on health Benefits of RWH	To conduct study to compare the long term health status (progression of chronic illnesses, frequency of acute illnesses, and general well-being) between five groups of the CKDu patients based on the main drinking water sources; rain-water harvesting system (Existing and New), bottled/reverse osmosis (RO) filtered water, groundwater, and, pipe-borne water in North Central Province of Sri Lanka	Conducted survey of 250 households with CKDU patients using 5 different water source for drinking in Badulla district. Out of these blood and urine sample were tested of 156 patients. Drinking water samples of these patients for tested for chemical, physical and bacteriological parameters.
18. Conduct a survey Monitor and Evaluate the existing RWH System	Conduct a user perception survey of around 1500 existing rain water harvesting in 18 districts.	Completed the survey of 1002 RWHS system users and 63 non users in 15 districts using ODK collect online data collection platform. Survey report is published.
19. Media and Promotion campaign on RWH	press briefing media output to give publicity on project activities	5 Radio programs, 5 TV programs, 25 Newspaper articles (6 in Wijeya children newspaper), 2 Web publications and 2 magazines,
20. Design a web based RWH calculator	To launch a web based RWH system calculator	Web based RWHS calculator was designed, incorporated and launched in collaboration with NBRO (National Building Research organization)
21. Produce a video documentary on project activities (initial PALM foundation activity)	Design and develop and video on project activities and its impact	20 minutes Video was developed on activities conducted under the project by LRWHF as well as PALM foundation and was launched.
22. Publications	a. Update and strengthen LRWHF's website with project activities b. Develop and Print 1500 leaflets, 1000 posters and other visual aid in all 3 languages which will be used in awareness programs and training programs as well as to bring awareness at district level c. print and distribute Operation and maintenance booklet in Sinhala and Tamil d. Comply and design a booklet comprising of success stories of RWH systems in households, schools and other	a. Events, newsletter and video on project activities have been uploaded to LRWHF web site and shared on Facebook and Y tube. b. 1500 leaflets and 1000 posters were printed in all 3 languages and distributed among school children, community, officials and public at various events. c. Operation and Maintenance instruction leaflets were printed in Sinhala and Tamil and distributed among beneficiaries. d. Success stories from project activities were compiled and printed in Sinhala, English and Tamil and distributed. e. . Revise and published RWH Practitioners Guide for Sri Lanka. This book contains the introduction, design, social and economic aspects and case studies on RWH. English version was printed 200 copies. The Sinhala version is

	institutes installed under USAID DRR project e. To Publish booklet of RWH and practices. f. RWH practices and success stories from South Asia: Publish a book that contain information on ancient practices of RWH in South Asian countries, rainfall patterns, best practices, case studies and methodologies used on RWH.	translated, however, Tamil version could not be translated due to closure of project. f. The book on RWH practices and success stories from South Asia could not be printed due to closure of project

4. Recommendation and Lesson learned

- 1 or 2 x 16,000 liter of different design were installed. This allowed to install RWH in schools which has around 150-200 children.
- Collaboration and contribution of zonal and Provincial Education Authority was very useful
- More awareness and training on operation and maintenance of RWHS is needed for the officials
- Purchase materials in bulk and store till use
- Valance board installation by householder was organized to purchase and transport in bulk
- Avoid bad weather period during construction.
- More RWH should be installed in CKDu areas due to high demand and lack of good quality drinking water
- Demonstration and sharing success stories from beneficiaries to convince the community. Select bad quality well initially show improvement in quality and quantity

5. Budget Comparison of Actual Expenditure with Budget Estimate

Project Period : October 2016-January 2025

Budget VS Actual Expenditure as per the Line items

USAID Share

Line Item	Estimated Budget USAID (USD)	Budget USAID in LKR	USAID Actual Expenditures to Date LKR	USAID Balance LKR
Other Direct Costs	911,933.88	197,306,014.00	178,635,735.38	18,670,278.62
Sub Award (PALM)	315,460.00	68,252,926.00	68,039,295.00	213,631.00
Construction Costs	963,026.00	208,360,305.00	191,303,777.62	17,056,527.38
Total	**2,190,419.88**	**473,919,245.00**	**437,978,808.00**	**35,940,437.00**

Cost Share

Line Item	Budget SLR	Actual Expenditures to Date LKR	Balance LKR
Other Direct Costs	6,125,020	5,264,562	860,458
Sub Award (PALM)	33,090,486	33,090,486	-
Construction Costs	9,639,950	10,980,000	(1,340,050)
Total	**48,855,456**	**49,335,048**	**(479,592)**