

OPERATION AND MAINTENANCE TRAINING ON RAINWATER HARVESTING SYSTEM WITH JUBO JAR 3000L SYSTEM – STUNG THMEI VILLAGE on 09 -10TH NOVEMBER 2024

Venue: Mrs. An Sokheng house, Stung Thmei village

Participants: 21 (15 are females) as recipients' families, village focal points, local masons,

Minute taken by: PHENG Kea

I- Introduction

RWC was commissioned by Japan Water Forum with fund support from Davish Yu Water Fund for the project implementation namely “**The power of rainwater** – Supporting poor and most marginalized families on access to safe drinking water in Stung Thmei village, Pramouy commune, Veal Veng district, Pursat province” from August 2024 – January 2025.

The overall goal of the project is “Marginalised families increase access to water supply and adaptation to certain drought through support on rainwater harvesting risk management systems”.

To achieve the project goal, there are two main specific objectives are proposed as follows:

1. The poorest community and most vulnerable peoples increased access to improved water source and safe drinking water through investing in rainwater harvesting system
2. The communities as community protected areas members, village focal points and school children increased their knowledge on water safety plan and proper hygiene practice.

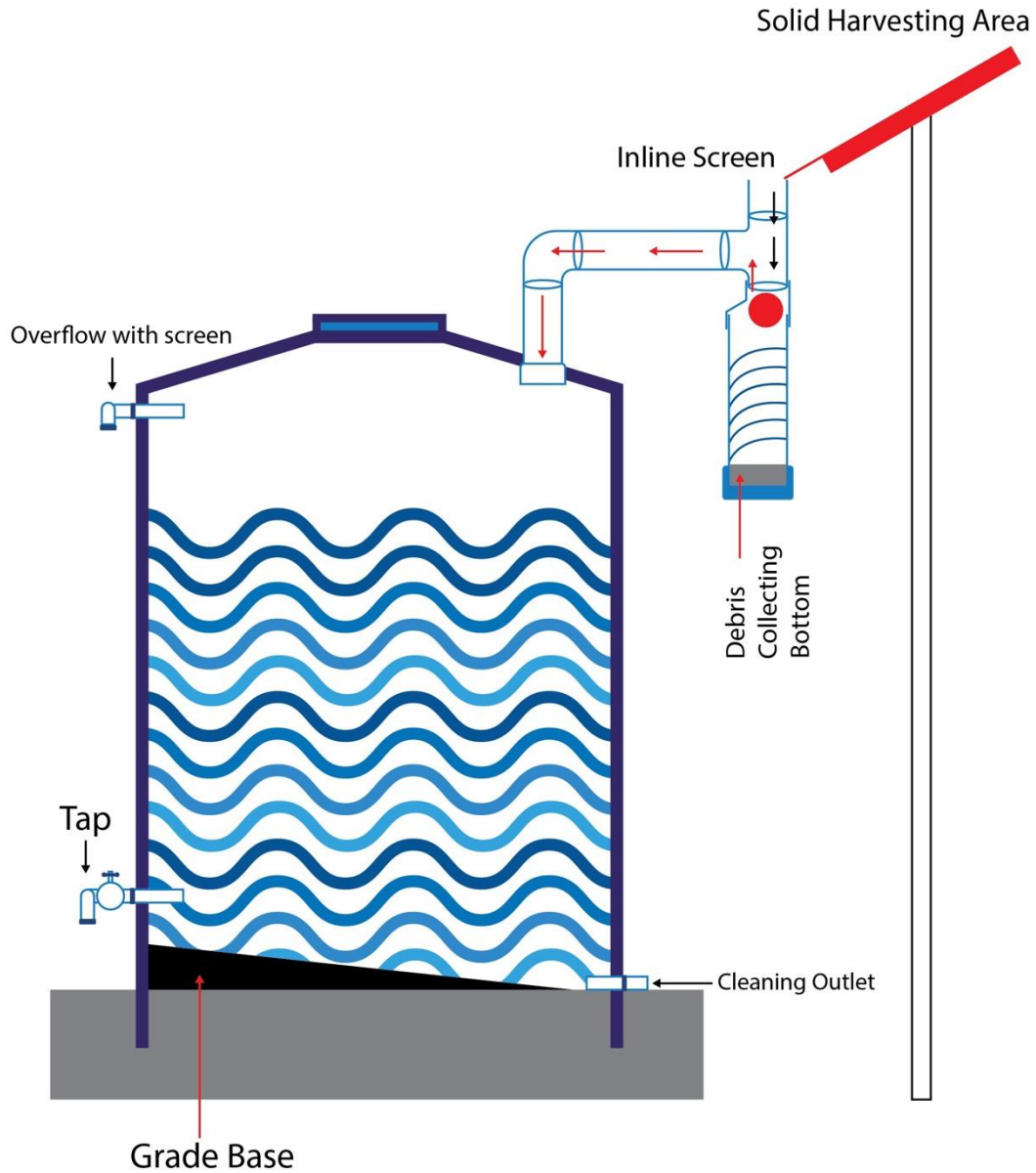


Figure 1: RWC rainwater harvesting system in Stung Thmei village

RWC has worked closely with existing community groups such as community protected areas, forestry groups and water safety plan committees, piped water management committee and the existing rainwater 's system supplier (who currently build and sale to local habitants) to understand community needs, and establish the most effective model for ongoing management and maintenance of new rainwater harvesting facilities which is also improved quality of water harvesting as it adopted risk managed model introduced by RWC¹.

¹ Full project report please see in this link: <https://youtu.be/CORDA-kl98M?si=9SSpTXpvQ7xtsZcP>

RainWater Harvesting Risk Managerment Model



“ Rain water - a source of sustainable
drinking water for everyone ”



The construction of rainwater harvesting system was successfully completed by 08th November 2024 by local mason with support from water management committee, village focal points and RWC project team. As part of the sustainability aspect, there are key factors ensuring that the longer-term use and provide benefit to all recipient's families in Stung Thmei village as (i). Durable and good quality of the system installation, (ii). Institutional capacity of recipient's families in operation and maintenance; and (iii). Willingness to sustain and operation, maintenance.

RWC conducted the operation and maintenance training on 09th November 2024 and 10th November 2024 is to chlorinate the system at Stung Thmei village, Pramouy commune, Veal Veng district, Pursat province for all recipients and village focal points. With total of 21 participants in which 15 are females attended the training.

II- Objectives of the training

- To increase knowledge on the operation and maintenance practices, plan and operation
- To prepare the operation and maintenance plan for operation
- To provide the chlorine for disinfect the rainwater tank after construction

III- Methodology of the training

The training covers formal and informal approaches with also including the hand on work for participants in directly check, inspect and maintain. The theoretical session provided by Mr. TENG Phearom, Project Officer on the principle, technical part, functioning of the system and key component and time for operation and maintenance with adoption of the risk managed model - rainwater harvesting system. In addition, the hand on work was demonstrated to the participants on the operation and maintenance with directly shown the system where installed in the recipient family for demonstration.

The chlorination procedure and its important was introduced, using the calcium hypochlorite 70% for disinfection the systems for all recipients' families.

IV- Activities and results

4.1- Welcome Remark:

Initial stage of training workshop, Mr. Pheng Kea, Executive Director of RWC provided an opening remark to the training workshop as thanksgiving to all the effort made by everyone to have the construction of rainwater harvesting system usefully completed. On behalf of RWC and donor as Davish Yu Water Fund and Japan Water Forum, we would like to express the effort and contribution made from stakeholders and project team to get this project smoothly implement and achieve the expected outputs. He extended his thankful and request all participants in carefully operation and maintenance the system of rainwater harvesting as it will be provided longer benefit to everyone and everyone health will be improved through drinking the water from this system.

4.2- Operation and Maintenance session:

Mr. TENG Phearom, Project Officer run the training session by adopting the material prepared as pre- and post-test conducted, session presentation through power points.

- Pre-test: The main key questions brainstorming on the knowledge of participants were facilitated and noticed by village focal points
- Training sessions
 - o Why Operation and Maintenance?
 - o Roof, gutter and gutter guard cleaning
 - o Cleaning of first flush system
 - o Cleaning of storage jar 3000L
 - o Cleaning the plate form of the system
 - o Checking all main components of system ensuring they are all in good condition
 - o Simple guide in technical operation on the system (PVC, Tape installation, valve replacement, plastering/coating the inside surface of jar, wire mess replacement.)
 - o Key step of the construction of rainwater harvesting system with jumbo jar 3000L technical option.

4.3- Mixing chlorine and use for disinfection the tank



The training focused also the water treatment methods as the using of chlorine to disinfect the rainwater tank after installation as some residual remained from the construction as clay or particles in which potentially contaminate the water.

The chlorine injection is mostly used in water treatment as it effectively treats microbial contaminated water. The assessment team has decided to use the Calcium Hypochlorite 70% for treatment the rainwater in the tank. RWC has consulted with the expert at ACTA-BIO and their research, therefore the norm of chlorine used for the treatment is 2mg/L. For example: To achieve 2g chlorine in a 1000 litre tank add approximately 3 grams of 70% calcium hypochlorite.

Figure 2: Mr. Teng Phearom measured chlorine for disinfection

The chlorination is occurred on the 10th November 2024 by RWC team and village focal point for all of systems installed under project. Each recipients' families and system is with 6g of chlorine was added in.

4.4- Hand on work on operation and maintenance

The hand on work on operation and maintenance was occurred at the venue of the training workshop as one system of rainwater harvesting system was installed. Mr. Teng Phearom, RWC project officer facilitated the flow of the system and each component to be operated, maintenance and frequency of work.



Figure 3: Mr. Teng Pharom and Mao Theang present the flow of each component

4.5- Questions and answers

There were certain number of questions were raised by the participants as on:

- why do we need to install the first flush system? Mitigation the risk from contamination as from roof collection
- Why chlorine? And what if we use chlorine over than the recommended standard? It will be affected somehow to health as strong smell, vomited.

By end of the training session, Mr. Mao Theang as village focal point on water safety plan of project conducted the posttest assessment with all participants by repeating the pre-test questions. As the results, the posttest's answers were measured as knowledge increased and capable in further operate and maintain of their systems.

V- Conclusion

The training was successfully completed as its expected outputs as all participants included recipients' families, village focal points and local masons have actively participated in as many interactive discussions, questions have been made.

The chlorination was clearly presented and also start adding in the rainwater harvesting system to ensure the water quality is drinkable.

Next step forward, the follow up support on the operation and maintenance will be conducted and also sampled water for testing in the laboratory in Phnom Penh in December 2024.

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