Mount Zion College of Engineering and Technology
To Make Man Whole!!

UNNAT BHARAT ABHIYAN

Programme Summary Report

Name of the Programme : **Rain Water Harvesting in Adopted Villages – Arasampatti, Lembalakudi, Pilivalam, Ilanjavur**

Academic Year : 2022-23

Number of students participated: 20

Faculty participated : 3

Population Impacted in this project: 120

Rainwater harvesting is a sustainable and effective method of collecting and storing rainwater for various purposes such as irrigation, domestic use and ground water recharge. In many rural areas, water scarcity is a significant issue and rain water harvesting can play a pivotal role in mitigating this problem. To address this concern, an awareness program on rainwater harvesting was conducted in villages (Lembalakudi, Arasampatti, Pilivalam, Ilanjavur), aimed at educating and encouraging the local population to adopt rainwater harvesting techniques.

Practical demonstrations of rainwater harvesting systems were organized in selected homes within the villages. These demonstrations showcased different techniques such as rooftop rainwater harvesting, surface runoff harvesting. Villagers were encouraged to participate and learn by doing. The program successfully increased awareness about rainwater harvesting. Villagers gained a better understanding of the

importance of conserving rainwater and its potential to alleviate water scarcity issues.

CONSTRUCTION PROCESS

Needs Assessment: An in-depth assessment of the water requirements, local topography, and existing infrastructure was carried out to determine the most suitable rainwater harvesting techniques for each village.

Design and Planning: Based on the needs assessment, detailed designs and construction plans were developed for each village. These plans incorporated various rainwater harvesting techniques such as rooftop rainwater harvesting, check dams, and recharge pits.

Material Procurement: The necessary materials, including tanks, pipes, filters, and construction equipment, were procured in adherence to quality standards.

Construction Phase: The construction teams executed the projects, which included the installation of rainwater harvesting infrastructure, such as storage tanks, gutters, pipelines, and recharge pits.

Community Engagement: Throughout the construction phase, the local communities were actively involved and educated about the importance of water conservation and the sustainable use of the newly constructed systems.

Construction Phase: The construction teams executed the projects, which included the installation of rainwater harvesting infrastructure, such as storage tanks, gutters, pipelines, and recharge pits

Quality Assurance: Stringent quality control measures were implemented to ensure

that all construction work met safety and functionality standards.

KEY ACHIEVEMENTS

Improved Water Access: The villages now have reliable access to clean and potable water, reducing their dependency on seasonal rainfall and distant water sources.

Enhanced Agricultural Productivity: Agriculture has witnessed a substantial improvement due to increased water availability for irrigation, leading to higher crop yields and food security.

Health Benefits: Access to clean water has resulted in a noticeable reduction in waterborne diseases, contributing to improved community health.

Environmental Impact: The project has had a positive environmental impact by replenishing groundwater, mitigating soil erosion, and enhancing overall ecosystem resilience.

Community Empowerment: The project has empowered local communities to take ownership of their water resources and actively participate in conservation efforts.

CHALLENGES FACED:

Despite the success of the project, several challenges were encountered, including:

1. Initial resistance and skepticism from some community members.
2. Seasonal variations in rainfall affecting water availability during dry spells.

Future Recommendations

- Regular maintenance and upkeeping of the infrastructure to prolong its lifespan.
- Expanding the project to neighboring villages to maximize its reach and impact.
- Developing a comprehensive water management plan to address seasonal variations in water availability.
- Sustained community engagement and education on water conservation practices.

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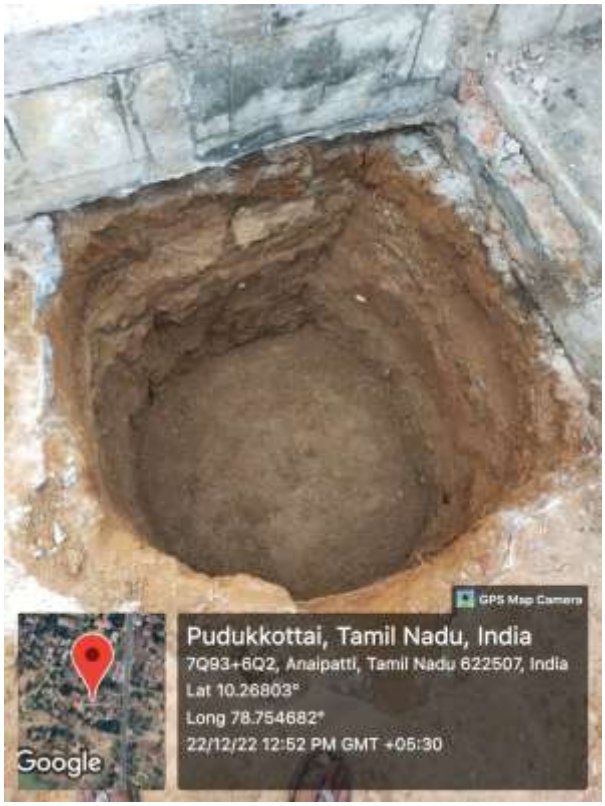
RAIN WATER HARVESTING SYSTEM

IN ADOPTED VILLAGE – ARASAMPATTI

In Arasampatti, rain water harvesting system was constructed in two houses according to the assessment made. Our team members purchased the materials required for the construction of rain water harvesting system. The workers located the suitable place for the rain water harvesting system and dig a hole of required size and dimension. Three sets of circular rings were fitted inside the hole. The circular rings were filled with sand, gravel, silt, fine aggregate and finally with coarse aggregate. These rings were closed with a lid having a provision of small hole letting rain water inside.

House 1:

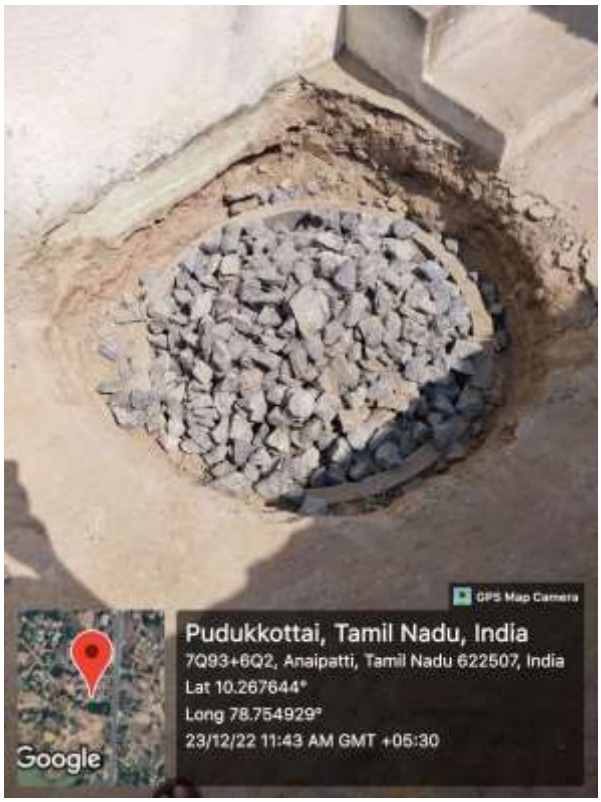
Workers digging hole for constructing rain water system



The hole with required dimension

House 2:

Workers placing the circular rings one above the other



Rain water harvesting system filled with coarse aggregate.

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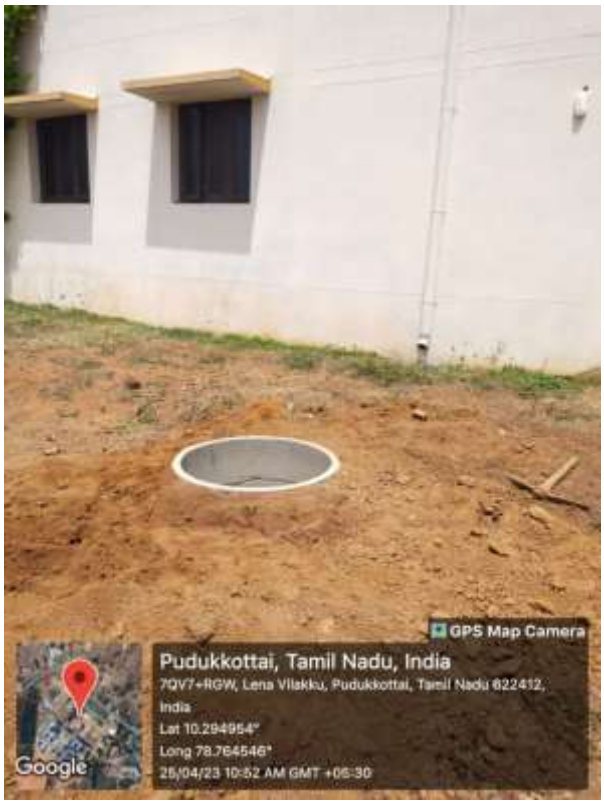
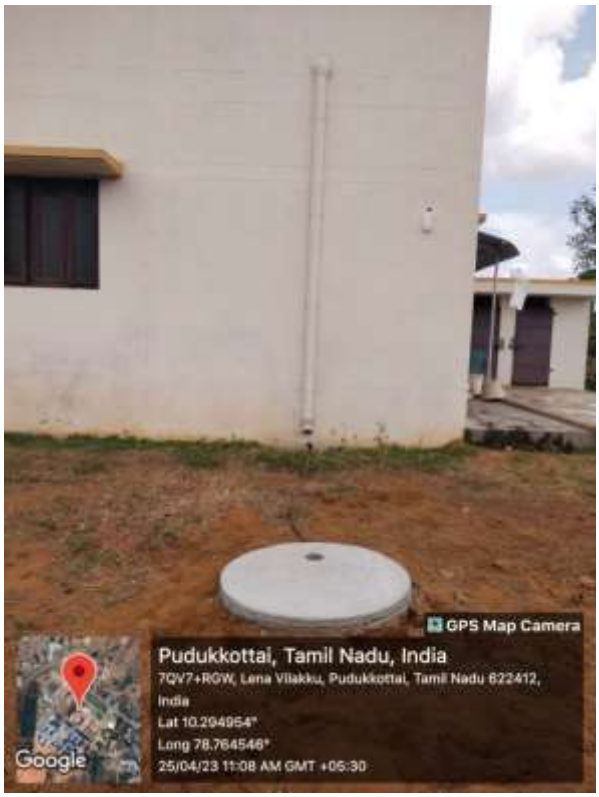
RAIN WATER HARVESTING SYSTEM IN ADOPTED VILLAGE –ILANJAVUR

In Ilanjavur, rain water harvesting system was constructed in two houses according to the assessment made. Our team members purchased the materials required for the construction of rain water harvesting system. The workers located the suitable place for the rain water harvesting system and dig a hole of required size and dimension. Three sets of circular rings were fitted inside the hole. The circular rings were filled with sand, gravel, silt, fine aggregate and finally with coarse aggregate. These rings were closed with a lid having a provision of small hole letting rain water inside.

HOUSE 1:

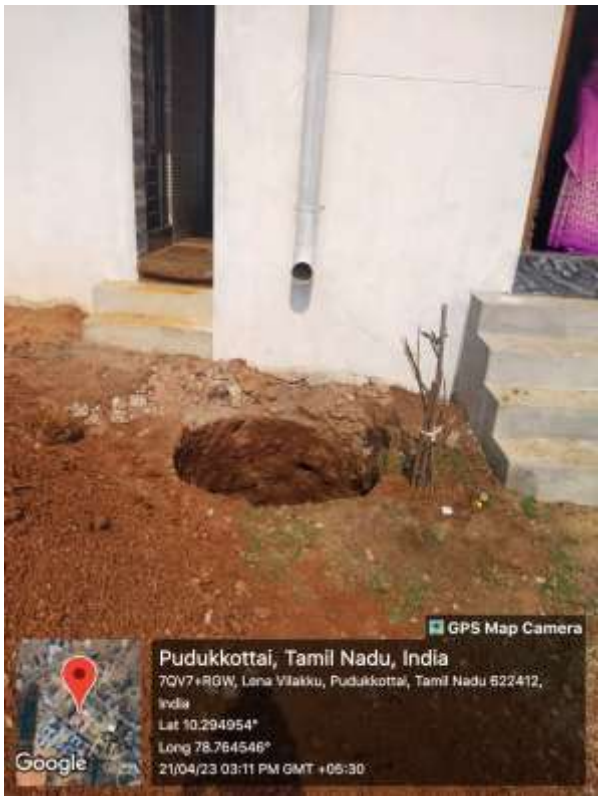


Circular rings placed one above the other.



Rain water harvesting system closed with a lid having hole for water to enter

House 2:



Hole for rain water harvesting system near the rain water outlet pipe.

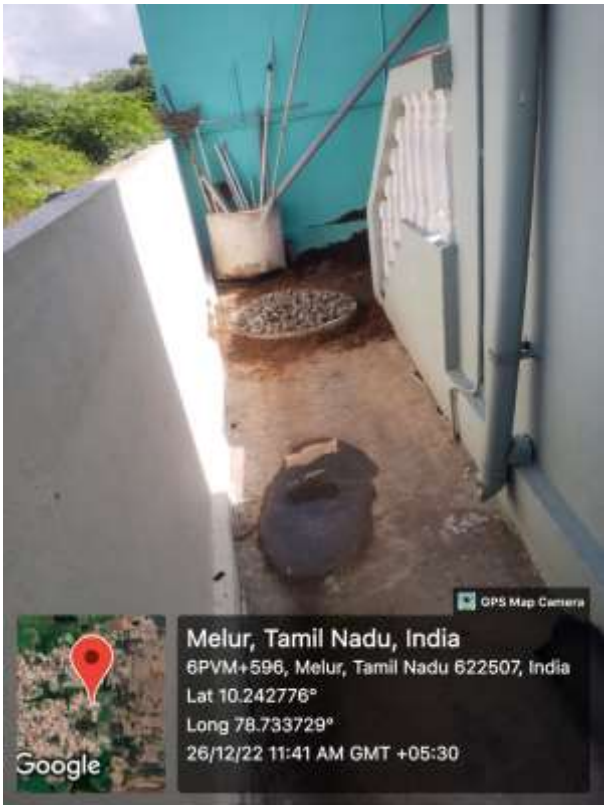
Workers placing the circular rings inside the hole with proper handling

RAIN WATER HARVESTING SYSTEM IN ADOPTED VILLAGE –MELUR

In Melur, rain water harvesting system was constructed in two houses according to the assessment made. Our team members purchased the materials required for the construction of rain water harvesting system. The workers located the suitable place for the rain water harvesting system and dig a hole of required size and dimension. Three sets of circular rings were fitted inside the hole. The circular rings were filled with sand, gravel, silt, fine aggregate and finally with coarse aggregate. These rings were closed with a lid having a provision of small hole letting rain water inside.

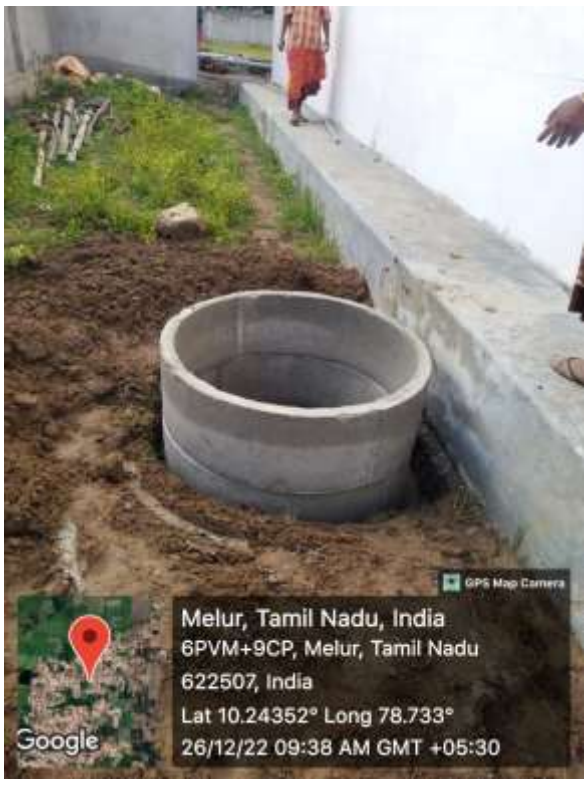
House 1:

Rain water harvesting system at a house in Melur.

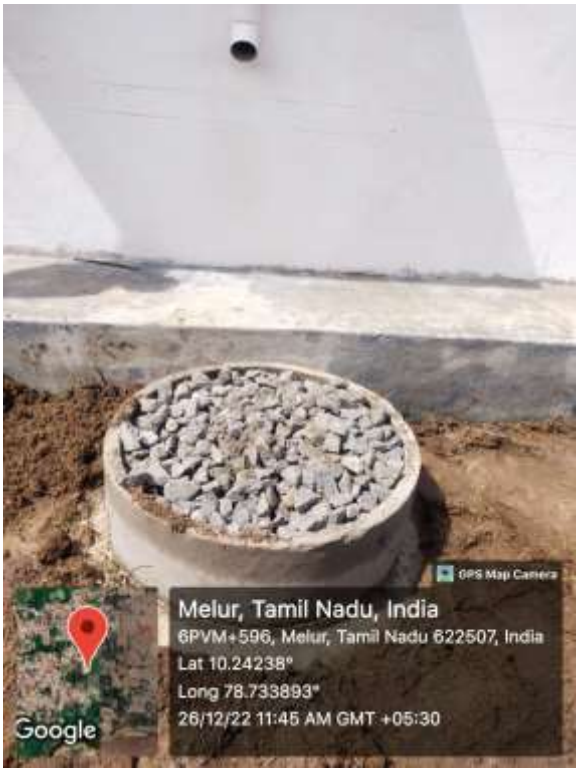


Rain water harvesting system filled with fine aggregate and coarse aggregate

House 2:



The circular rings arranged for the construction of rain water harvesting system

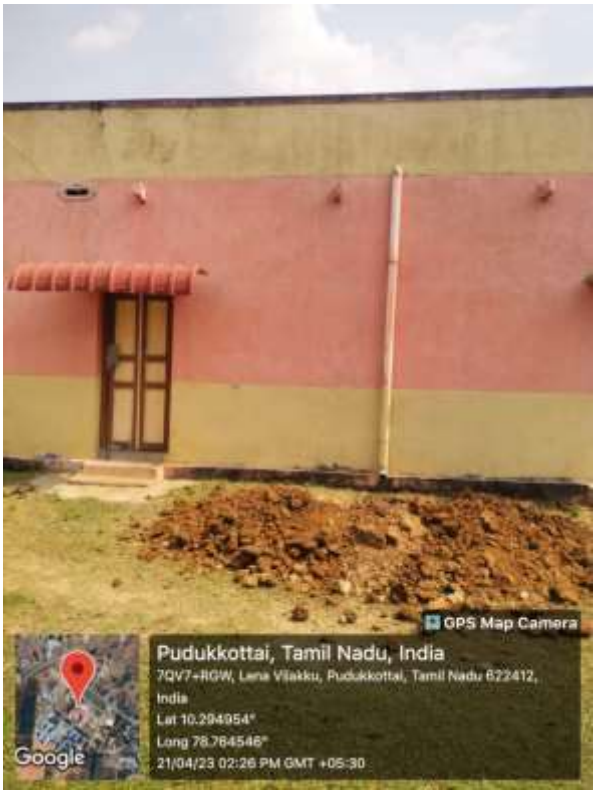


Circular rings filled with layers of coarse aggregate near the rain water outlet pipe.

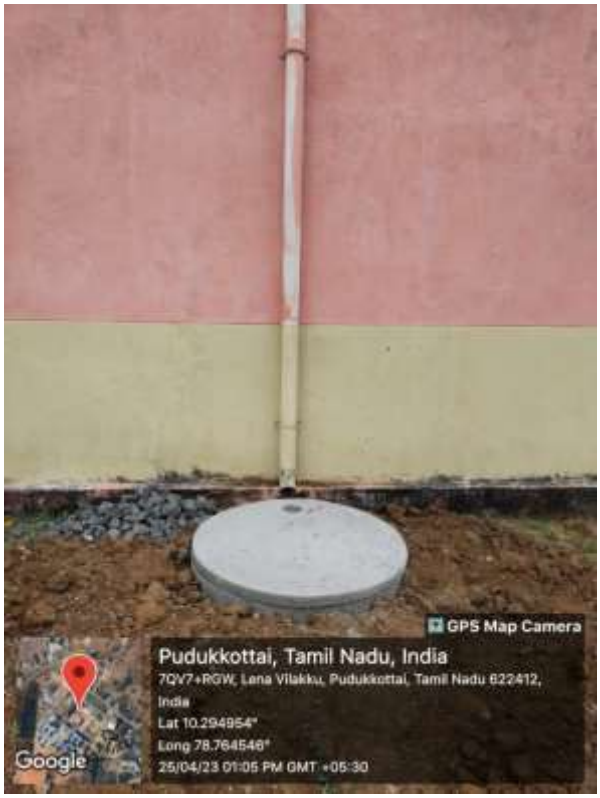
RAIN WATER HARVESTING SYSTEM IN ADOPTED VILLAGE – PILIVALAM

In Pilivalam, rain water harvesting system was constructed in two houses according to the assessment made. Our team members purchased the materials required for the construction of rain water harvesting system. The workers located the suitable place for the rain water harvesting system and dig a hole of required size and dimension. Three sets of circular rings were fitted inside the hole. The circular rings were filled with sand, gravel, silt, fine aggregate and finally with coarse aggregate. These rings were closed with a lid having a provision of small hole letting rain water inside.

House 1:



Initial arrangements for constructing rain water harvesting system



Completely constructed rain water harvesting system at house 1 in Pilivalam

House 2:

Location selected for constructing rain water harvesting system

Hole for placing circular rings for the construction of rain water harvesting system