

RESONATING CHANGE

Making the Invisible Visible

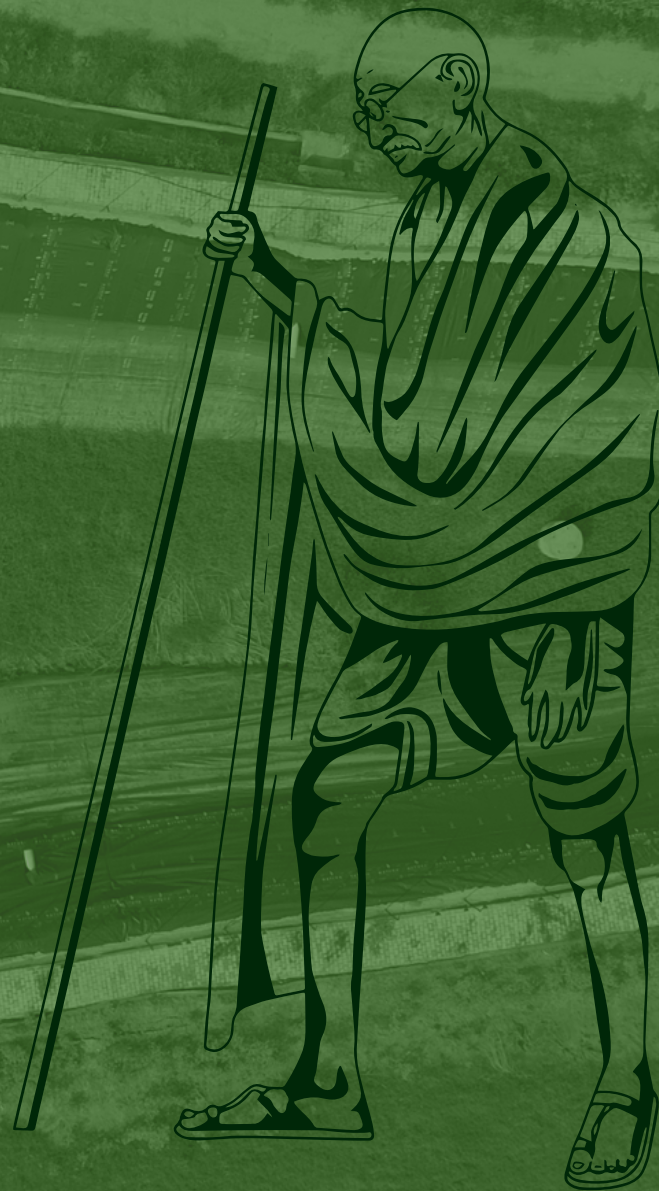


RESONATING CHANGE

Making the Invisible Visible



The earth, the air,
the land, and the
water are not an
inheritance from
our forefathers but
on loan from our
children. So we
have to handover
to them at least
as it was handed
over to us.

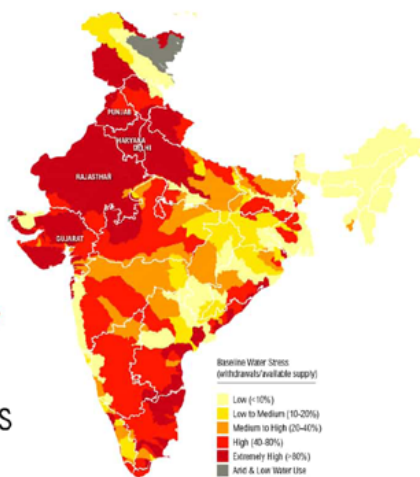




Water Crisis in India

India is experiencing a very significant water challenge. Approximately, 820 million people of India - living in twelve river basins across the country have per capita water availability close to or lower than 1000m³ – the official threshold for water scarcity as per the Falkenmark Index. About 82% of rural households in India do not have individual piped water supply, and 163 million live without access to clean water close to their homes. 70% of India’s surface water is contaminated. Average per capita water availability, which is already low enough for India to be categorized as water stressed, is expected to reduce further to 1341m³ by 2025 and 1140m³ by 2050, close to the official water scarcity threshold.¹

54%
of India
Faces
**High to
Extremely
High**
Water Stress

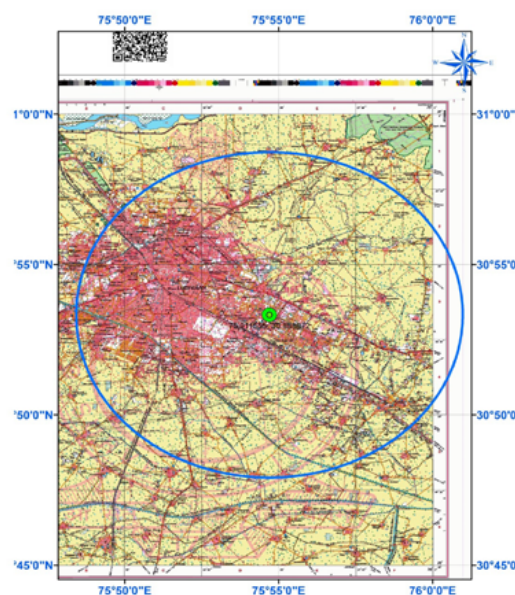


source: www.indiawatertool.in,
WORLD RESOURCES INSTITUTE

Punjab’s Water Crisis

Punjab, an agrarian state is going through a severe water crisis due to a lack of proper planning for systematic groundwater extraction, cropping pattern–extensive paddy cultivation, irrigation through tube wells, etc. Today, nearly 72% of areas are irrigated by tube wells whereas only 28% of areas are through canal systems in the state.²

As per ‘Block wise Ground Water Resource Assessment-2020’ by the Central Ground Water Board, all assessment units of Ludhiana districts falls under ‘Over-Exploited’ category. The major reason for this water crisis is due to the over-exploitation of groundwater to meet the demand of agriculture, industrial sector and domestic consumption.³



source: CWMI-2.0-latest



¹Composite Water Management Index’, NITI Aayog August 2019
²Singh, Inderjeet & Bhangoo, Kesar Singh, 2013. "Irrigation System in Indian Punjab"
³Block wise Ground Water Resource Assessment-2020-CGWB

Addressing the Issue

Reflecting this urgency, a unique partnership was built between United Breweries Limited (UBL) as part of the organisation's Corporate Social Responsibility initiative, Action for Food Production (AFPRO), one of the pioneers in watershed management in India, and the rural population of Ludhiana district of Punjab to improve the status of groundwater level in the affected area. To address the issue two major strategic activities of groundwater recharge and groundwater conservation were undertaken in 20 rural and semi-urban areas/settlements in Ludhiana.



RWH Structure down pipe



RWH measurement for roof catchment area'

Our Response

The Initiative: Water Conservation at Ludhiana, Punjab

The project began in March 2020 as a solution to address the water crisis in the district through groundwater recharge and water conservation initiatives.



Objective:

- ▶ Assess the water security status of the selected villages
- ▶ Revive existing and construct new water conservation/harvesting structures to balance the demand and supply of groundwater
- ▶ Capacitate farmers/water user groups on the use of water through awareness programs



Key Strategies:

- ▶ Rooftop Rainwater Harvesting
- ▶ Pond Rejuvenation



Construction of rooftop rainwater harvesting structure under progress



HR Manager, UBL Ludhiana visiting the Hawas pond site



Lalton Kalan water harvesting site visit by UBL officials



Hawas pond site after completion



Jawaddi water harvesting site visit by UBL at Government Institutions



Celebration of World Water Day at Hawas village



Connecting the underground pipe to the collection pit



Recharge pit construction



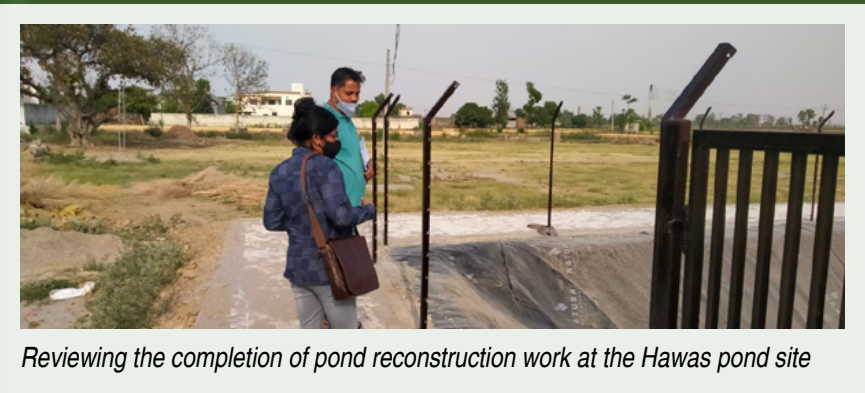
Rooftop rainwater harvesting structures



Rainwater harvesting structures at Government Institutions



HR Manager, UBL Ludhiana visiting the Hawas pond site



Reviewing the completion of pond reconstruction work at the Hawas pond site

Rooftop Rainwater Harvesting

PREPARATORY STEPS

Since its inception, the project adopted an inclusive approach to encourage academia, decision-makers, technical/domain experts, and the local administration to participate, guide, and support in making the initiative more sustainable. In this connection, three preparatory activities were carried out in the initial phase of the project followed by the formal inauguration in November 2020.

Interaction with PAU for Technical Guidance

The project team consulted with Dr. Rajan Aggarwal, the Principal Scientist of Soil & Water Engineering, Department, Punjab Agriculture University (PAU), Ludhiana to learn about different technical issues like the scope and type of recharging structures in the area, method of artificial recharge, groundwater reality/status of Ludhiana, groundwater management, details on rooftop rainwater harvesting structure, etc. that could help in implementing the project on the ground.



Deputy Commissioner for RWH work permission



RWH structure downpipes

Consent from District Authority

The project team approached the District authority for the approval of implementing a 'Water Conservation Project' with the construction of 14 rainwater harvesting structures in 10 locations in Ludhiana. Later, the authority issued a permission letter indicating a list of 10 sites where water conservation structures should be installed.

Technical Survey & NOCs from Gram Panchayat

Before initiating work on the ground, a technical survey was done in every location and No Objection Certificates (NOCs) were collected from the concerned authority and all other necessary documents like design, details of work to be carried out, permission letter of district authority were also obtained for the initiation and smooth running of the project.

Implementation Phase

INAUGURATION OF THE PROJECT

Construction of Rainwater Harvesting Structures



Drilling of one recharge bore well



PVC pipes fitting having a 6-inch diameter



Fixing vertical/down pipes having a 4-inch diameter



Construction of siltation tank (10 feet x 10 feet x 10 feet) with filter net along with filling of gravels as filter media



Desiltation chamber for RWH



After the completion of the groundwork, the project was inaugurated on November 10, 2020, in the presence of different stakeholders.



Construction of desiltation chamber for RWH



The power to maintain safe, reliable, and sustainable practices must rest in the hand of users/villagers themselves. To ensure that an operation and maintenance guideline for rooftop rainwater harvesting structures was developed and shared in all schools for the maintenance of these structures. Further, a sensitisation cum awareness session was organized among school principals to make this initiative grounded and sustainable.

Sensitisation cum Awareness Programme

20TH DECEMBER 2022

A sensitisation cum awareness programme was organised with school authorities to initiate dialogue on Rooftop Rainwater Harvesting. During the event, Mr. Pradeep Kumar, Principal, of Laton Kalan School narrated his experience of Rooftop Rainwater Harvesting with all the participating members. He appreciated the valuable efforts of the AFPRO and UBL teams in making this initiative successful.

The principal of Dolon Kalan High School appreciated that their school was selected for this initiative by the Ministry of Water Resources, Government of India.

Key Speaker of B. S. Rain Harvesting, a volunteer organisation, explained the importance of rainwater harvesting and how it should be maintained after the construction. The awareness program was a great success as it was covered by local media as well.

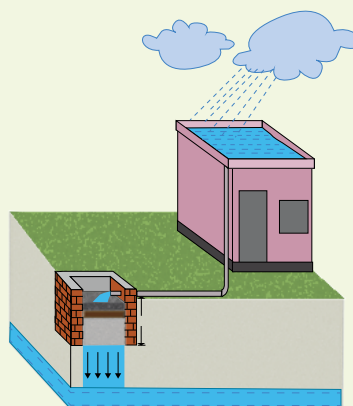


Awareness programme on rooftop rainwater harvesting



Awareness programme on rooftop rainwater harvesting

Milestones achieved



14 Rooftop Water Harvesting Structures are installed.

10 Government Institutions are covered.

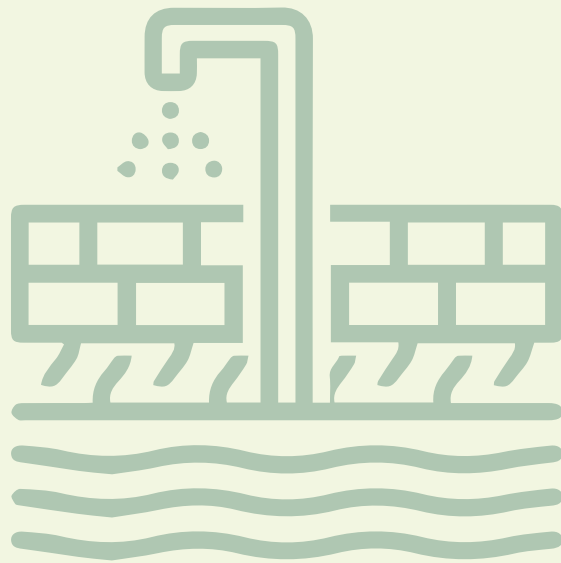
1 Awareness event organised for creating awareness about the importance of rainwater harvesting.

Rejuvenation of Community Pond to Enhance Groundwater Level

PREPARATORY STEPS

Baseline Study

A baseline study was conducted in different Gram Panchayats situated near the UBL Ludhiana brewery to identify the potential pond sites.



Drilling work in progress at Hawas pond site



Technical survey of identified pond sites

Technical Survey & NOC from Gram Panchayat

Once the baseline study was completed, the Budhewal village pond was finalised after ensuring other essential technical aspects were met. NOC from Village Sarpanch was also taken before initiating the work on the ground. A technical survey was conducted by the technical team for the smooth execution of work.

Panglian Village Pond





Pangilian Pond site before rejuvenation



Pangilian Pond site after rejuvenation



Budhewal Pond before rejuvenation



Budhewal Pond site after rejuvenation

Implementation Phase

Project Inauguration

After the completion of the groundwork, the pond rejuvenation initiative was inaugurated on May 7, 2021, at Budhewal pond in the presence of eminent stakeholders.



Steps taken during Pond Rejuvenation

- ▶ As per the approved design, multiple steps were taken from earth excavation to different levels of construction to complete pond rejuvenation.
- ▶ This was followed by the formation of the Village Development Committee (VDC) which is responsible to monitor the rejuvenation activity, operations, and maintenance of the pond.
- ▶ To analyse the impact of the pond rejuvenation, the mapping of 12 bore wells for groundwater monitoring was completed in Budhewal village.
- ▶ A third Party Assessment by Guru Nanak Dev Engineering College (GNDEC), Ludhiana was conducted to validate the technical design of Budhewal pond.

Key Milestones



6 ponds were renovated and rejuvenated



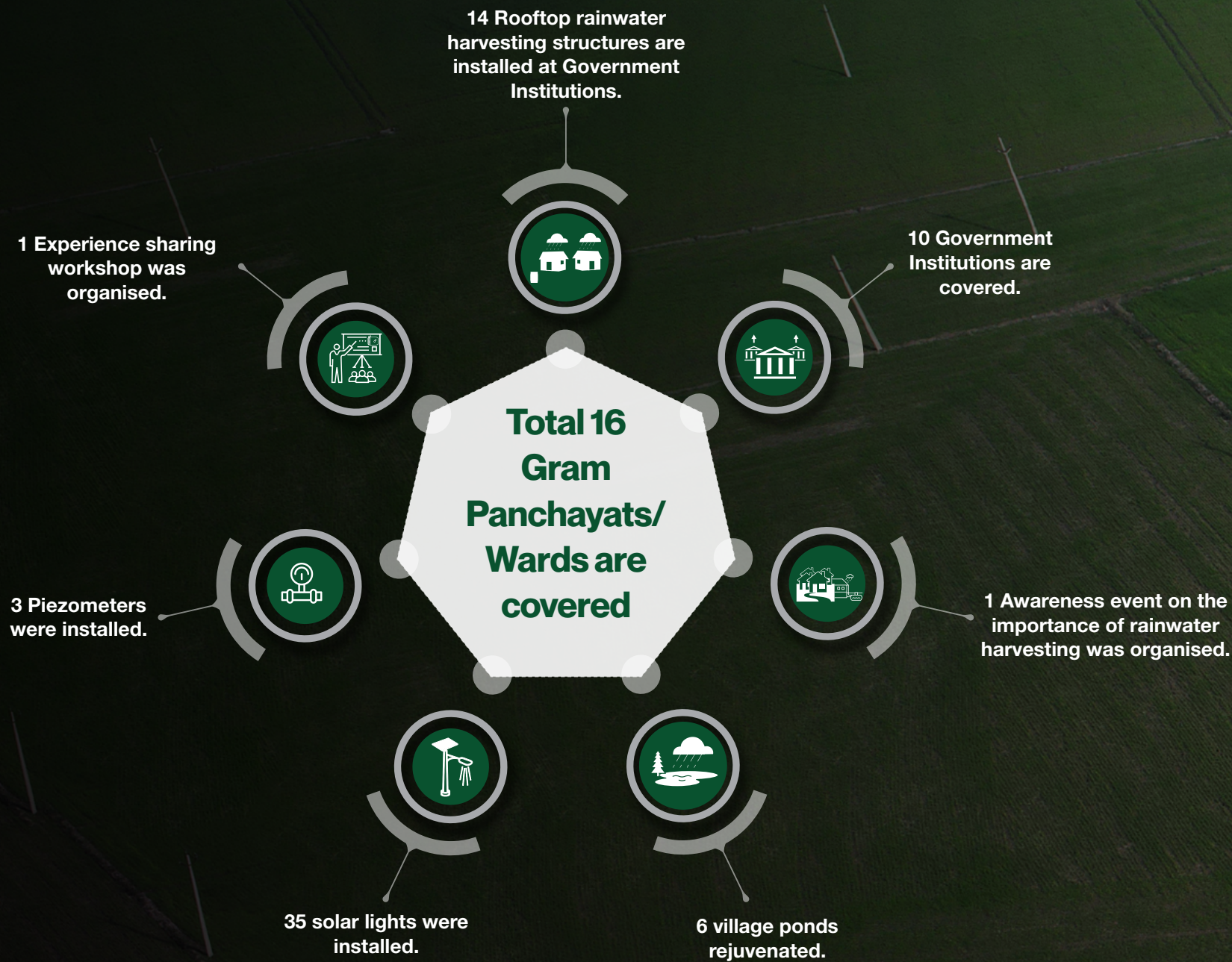
Total 35 solar lights were installed around ponds.



3 piezometers were installed at strategic location to monitor groundwater level.



Fact sheet



An aerial photograph of a large, kidney-shaped reservoir with a concrete lining, situated in a rural landscape. The pond is surrounded by green fields and a road. The text "Bhudhewal Pond" is overlaid in the center of the image.

Bhudhewal Pond

Visit by Block Development and Panchayat Officer, Ludhiana at Kot Gangurai Village Pond





About AFPRO

Established in 1967 as a socio-technical development support Organisation contributing to Food Security, Livelihood, Water and Sanitation, Watershed Management, Natural Resource Management, and Climate change interventions with a 360-degree approach. AFPRO is one of the pioneers of groundwater development in India, focusing on Geo-hydrological assessments, water budgeting exercises, and groundwater recharge. AFPRO helps in creating drinking water infrastructure, water harvesting structures, sanitation facilities, and providing access to irrigation to rural communities with technical inputs, knowledge sharing, and capacity building of various stakeholders.



About UBL CSR

Bengaluru-headquartered United Breweries Limited, part of The HEINEKEN Company, is the largest beer manufacturer in India. The company produces and markets internationally recognized beer as well as non-alcoholic beverages. Founded in 1915, United Breweries currently operates 30 breweries in the country, and sells its brands in more than 60 countries. UBL is committed to operate and grow its business in a socially responsible way. The company aims to bring about sustainable development by balancing the commercial and economic progress with social and environment development. UBL's CSR initiatives are focused to reduce the impact of its business and improve the quality of lives of the communities residing in the vicinity of its breweries. Through its water efficiency efforts, UBL is constantly striving to reduce freshwater consumption in the production of beer and is also consistently working towards recycling of wastewater coming out of production. Through its specific CSR interventions, UBL aims to address the rising water crisis by focusing on water conservation and recharge projects.



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UNITED BREWERIES LIMITED