The Climate Reality Project

INDIA

पुणे महानगरपालिका

A CLIMATE REALITY PROJECT, INDIA'S REPORT ON 'RAINWATER HARVESTING IMPLEMENTED BY PUNE MUNICIPAL CORPORATION'

Prepared by

EXPLOREiT

Ideation. Creation. Consultancy.

Under the guidance of

Col. Shashikant Dalvi

Rainwater Harvesting Report

The Climate Reality Project®

Office of the Additional
Municipal Commissioner
Pune Municipal Corporation

I would like to congratulate Bhavan's department in Pune Municipal Corporation for taking this initiative of implementing rainwater harvesting in 75 buildings of PMC. Rain Water Conservation is the need of the hour. I would also like to congratulate The Climate Reality Project, India and ExploreiT who prepared this report. I am hopeful that this report will enlighten other Municipal Corporations and set a benchmark to follow. We are trying to implement this practice of Rain Water Harvesting in rest of the PMC buildings in Pune and we are there to help other corporations to implement this in their area with our experience and expertise.

(Rubal Agarwal)
Additional Municipal Commissioner (G)
Pune Municipal Corporation.

On 01 Jun 2016, PMC launched the rooftop rain-water harvesting (RWH) program on 74 of its buildings. This program is as per the Govt. of Maharashtra GR dated Feb 2002, which makes roof top RWH mandatory for all the govt & public buildings in the state. The aim was to use roof top rain water to recharge the depleting ground water table & also to spread awareness about need and benefit of rain water harvesting methods to Pune citizens visiting these buildings daily. Pune is the 7th largest city in India. Like most cities, it is faced with an ever-increasing water crisis. Rain water harvesting is one of the best methods to improve availability of water.

This project was completed in Dec 2018, with 5 crore litres of rain water annually recharging ground water table of the Pune city via the rooftops on PMC buildings.

Then Pune Commissioner entrusted me to provide necessary technical support for the successful completion of the project. I provided the design of the RWH systems, trained the relevant personnel and provided my guidance and supervision during the implementation. Mr Khandave, Head of the Bhawan Department, PMC, and his team were extremely proactive in providing necessary help with their direct involvement on the ground. With this, PMC became the first municipal corporation in the state to implement such a green project successfully. This project will become the gold standard for the implementation of similar projects nationally.

For the Climate Reality Project India, it will remain a landmark project. We are thankful to PMC for giving us this opportunity and pledge to work with the PMC for any future green initiatives that they may wish to undertake.

Col S G Dalvi (retd.)
National Co-ordinator for Water Conservation
The Climate Reality Project, India
Director, **Parjanya** : Rain water Harvesting Consultancy

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OVERVIEW

Water is a very essential natural resource for the survival of all the beings on this planet. Planet earth is known as Aqueous Planet since 75% of the planet's surface is covered by Water. 97% of water is in the oceans; about 2% is locked in North & South poles, hence the old saying "Water water everywhere, not a drop to drink" seems to be true in this context because balance 1% is available as fresh water, part as surface water & part as groundwater. Human settlements & animal habitats developed along with water resources. The sum total of water on the planet is constant. Water plays a very important role in the growth & development of all types of habitats on the planet. Rain is the primary source of water. Water is a must for all life forms to survive and it is perhaps the most important natural resource on planet earth because it helps in performing several important activities agricultural, industrial, household etc. and essentially all these activities require fresh water leading to the situation of *water crisis* which can be explained as the lack of fresh water resources to meet the increasing water demand.

There are several reasons for the water crisis. Few of the broad factors are listed below:

1. Mismanagement of water
2. Climate change leading to irregular rainfall
3. Unequal distribution of freshwater resources
4. Increasing freshwater demand due to the growing population.

"There is water crisis today. But the crisis is not about having too little water to satisfy our needs. It is a crisis of managing water so badly that billions of people - and the environment - suffer badly."

- World Water Vision Report

Due to all these factors, humanity has even witnessed "Day Zero" in Cape Town, the capital city of South Africa and several big cities are facing the risk of same events and situations, like Sao Paulo in Brazil, Barcelona in Spain, and Bangalore in India etc.

The water crisis has been listed as the biggest global threat of next decade according to the World Economic Forum in 2015.

SITUATION IN INDIA

Despite having the piece of good fortune in the form of several valued sacred rivers and precipitation (rainfall) in India i.e. 4% of earth's total, India is still facing both water pollution and water scarcity.

According to the study by Asian Development Banks India will face a 50% water deficit by the year 2050. The Niti Aayog report, which draws on data from 24 of India's 29 states, says the crisis is "only going to get worse" in the years ahead. It also warns that 21 cities are likely to run out of groundwater by 2020 despite increasing demand.

More than 20 cities, including New Delhi, Bengaluru and Chennai, will run out of groundwater by 2020, affecting 100 million people, according to the report. Today, India's rank in the world for water availability per person (per annum) is 133. Recently India's two major cities Bengaluru and Shimla have faced acute water shortage.

The 180-page report on Composite Water Management Index goes on to say that *'by 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds and millions of people and an eventual 6% loss in the country's GDP.'*

Right now, the groundwater has been decreasing at a very fast pace, for instance, Bengaluru which is called the Silicon Valley of India that has recently faced water crisis and had to obtain water from more than 1500 ft. underground in comparison with only 200 ft. 30 years back.

The groundwater level is decreasing due to lack of rainfall and wastage of water. Insufficient and erratic rainfall is caused by climate change that is taking place rapidly. To tackle the problem India has, under the Paris Agreement, made three commitments. India's greenhouse gas emission intensity of its GDP will be reduced by 33-35 per cent below 2005 levels by 2030. Alongside, 40 per cent of India's power capacity would be based on non-fossil fuel sources. At the same time, India will create an additional 'carbon sink' of 2.5 to 3 billion tons of Co2 equivalent through additional forest and tree cover by 2030.

PROBLEM

Of the total water available on Earth, only 1% is fresh water. India's share of this 1% is only 4%, to take care of 18% of the World Population. Surface water is highly contaminated due to the release of untreated domestic sewage, industrial effluents & agriculture runoffs containing pesticides, fertilizers etc. Due to unsustainable over-extraction of groundwater to meet the water needs of all water users the groundwater table across the country is falling at an alarming rate. We need to change our attitude towards this life saving natural resource.

SOLUTION

Use of Rainwater Harvesting to recharge groundwater is the only solution to tide over water needs of rising population, industry & agriculture. Such methods are economical & long lasting. We need to change our attitude towards this life saving natural resource from *USE & DISCARD to USE, REUSE, RECYCLE, RECHARGE, CONSERVE & DISCARD*. Remember quantity is finite & constant on the Earth.

BENEFITS

Recharging of groundwater using rainwater harvesting methods helps improve falling groundwater table, helps people tide over their water shortage. It also reduces Carbon Foot Print of the rainwater harvesting site. Take the case of our society. Each water tanker travels 10 KMs from water loading point to our society. This means that each tanker had a round trip of 20 KMs daily. We use three tankers i.e. a total of 60 kilometers travelled to meet our daily water needs. This translates into roughly 21,000 KMs annually. All these tankers use diesel fuel. With an average mileage of 8KM/L, 2700L of Diesel was being used to deliver water to us annually. One litre of diesel, when used in a vehicle, releases 2.65KG of CO_2.

CONCLUSION

Along with water conservation & daily water saving methods, we can together reduce the water problem, however as a permanent solution to countries' water problems we must spread awareness and implement Rainwater Harvesting methods to recharge the rapidly falling groundwater table.

SCENARIO OF PUNE: WATER MANAGEMENT

Average annual rainfall of Pune city is about 750 mm. It means 1000 sq. ft. of Roof Top area receives about 75,000 litres of rainwater per year & 1 acre of catchment area receives about 30 lakh litres of rainwater annually. Despite such a huge amount of rainwater, which we receive year after year, we have failed to utilize this potential for our benefit to tide over our water shortage.

Dams at **Panshet, Warasgaon** and **Temghar** supplement the storage capacity of **Khadakwasla** Dam to be supplied to the city of **Pune**. The total live storage of all the four Dams is around **30 TMC** (thousand million cubic feet). Pune city besides 750 mm of annual average rainfall, three natural rivers: **Mula, Mutha** & **Pavana**. At present, there are about 10,000 bore wells & 1000 open wells in the city.

The total water supplied to the city is around **14.5 TMC**. 70% of this water is supplied through a closed conduit and 30% through an open canal.

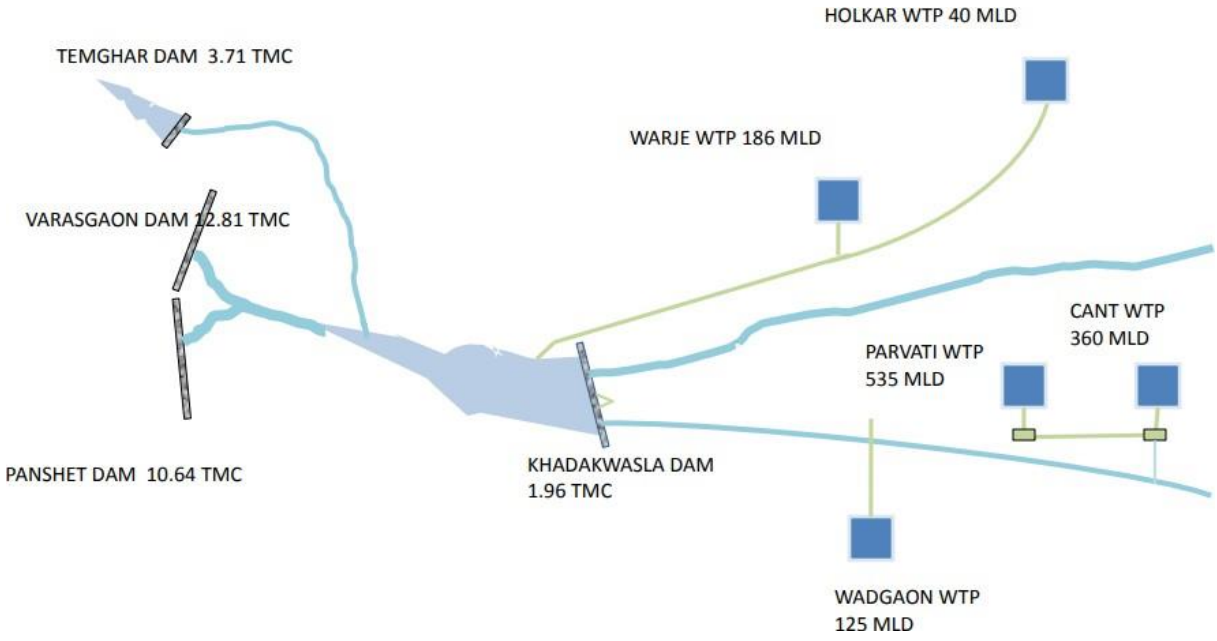

Figure 1: Water Management in Pune

All these Dams are managed by the **State Irrigation Department**. PMC buys water from Irrigation Department and treats it and supplies it to the city of Pune.

Water treatment plants have been built by PMC at **Parvati, Pune Cantonment, Holkar Bridge Wajre, Wagholi and Wadgaon**. Untreated water from the dam may contain dirt and germs. It is treated by PMC to make it safe for consumption and use. The treatment involves straining, alum addition (flocculation), settling, filtration and chlorination.

Regardless of ample water resources, the city of Pune is facing patchy and dwindling water supply due to numerous reasons like:

- Climate Change
- Injudicious use of water
- High population
- Deforestation
- Growing vehicles
- Contamination of water

Climate Change has resulted in dangerous alterations in the environment whose results are evident to society. The climate change has resulted in alteration of rainfall pattern in the Pune district. Rainfall has significantly increased in the monsoon season and according to the future projections, rainfall will widen in the months of July and August. Climate Change has also resulted in the increasing temperature of the city giving rise to the waterborne diseases in stagnant water. For instance, a Pune state health report states that the number of deaths due to waterborne diseases has increased nearly three times between April 2012 & August 2012, of which 41 were due to diarrhea, gastroenteritis and jaundice.

Climate change has taken place in Pune due to setting up of different factories and industries which in turn lead to deforestation of trees and the current scenario is as such that there is not even one complete tree for one individual in Pune as the population of Pune is approximately 40 lakhs and the tree count of the city is merely 32 lakhs. As per a study, the ideal number of trees per individual should be 8 trees, in that case, the ideal number of trees in the city of Pune should be 3.2 crores and on the other hand it only 32 lakhs a minor 10% of the required number. Also, the growing number of vehicles in the city has also contributed to Climate change by releasing toxic harmful gases in the atmosphere by increasing the city's pollution. In a recent study, it was revealed that Pune has become the first city that has more than one vehicle per person. It is quite ironical to point out here that the number of vehicles per person is more than the number of trees whereas it should be the other way around.

This shows the ignorance on the part of the locals and the authorities operating the city of Pune.

The reason for contamination of Pune groundwater is due to discharge of industrial effluent and hazardous industrial and residential solid waste on the surface soil as well as directly into the river Mutha which perhaps percolated and contaminated the groundwater.

Even today the people of Pune live on the mercy of water tanker operators and farmers do not get enough water supplies for irrigation

AUTHORITIES MUST ADDRESS THESE ISSUES TO IMPROVE WATER SUPPLY

- Unequal water distribution ranging from 350 litres/citizen per day to around 80 litres
- Heavy transportation losses of 40 % in the city water supply system
- Poor implementation of Water Conservation & Rainwater Harvesting policies.
- No Recycling & Reuse of Greywater. Around 65 % of daily water supply gets converted into Greywater.
- Rainwater harvesting can make a society up to 65% self-sufficient.
- Around 1 cr. litres of water is wasted to clean and wash vehicles every day.

Therefore, **On 14th February 2002, Water Supply & Sanitation Department of Government of Maharashtra has issued a G.R approving Rainwater Harvesting** as a means of improving water supplies. The G.R. details various techniques of Rainwater Harvesting, their costing & availability of funds. In furtherance Municipal Corporation of Greater Mumbai has issued a Circular insisting provision for of Rainwater Harvesting while developing plots having area more than 1000 Sq. Mts, as I.O.D. conditions from 1st Oct. 2002. The design of the Rainwater Harvesting system shall be prepared by an approved consultant in the field & shall be to the satisfaction of the Corporation. Further, all Centrally Air-conditioned building shall have their own wastewater treatment plant & treated waste shall be used for cooling purposes.

Government is pleased to accord sanction to the implementation of "Shivkalin Pani Sathawan Yojana" (Shivkalin Water Harvesting scheme) providing for conventional and non-conventional measures for drinking water source strengthening, roof-top rainwater harvesting, construction of storage tanks in the hilly areas of the villages for storage of rainwater and similar other measures.
Several measures have been adopted in the GR:

1. Necessary measures for collecting the rainwater for drinking and other purposes by adopting roof-top rainwater harvesting on all the public and government buildings in villages, towns and cities.
2. Measures for collecting the rainwater for drinking and domestic use by adopting roof-top rainwater harvesting on private houses and structures.
3. Measures for constructing storage tanks in the hilly areas of villages and storing spring water for drinking and other purposes.
4. Measures for collection of rainwater and its direct recharge into the public drinking water sources by all possible conventional and unconventional methods.
5. Other conventional measures, by which drinking water can be made available. (e.g. Water conservation measures like de-silting and deepening of tanks /wells, check dams, etc.)
6. Unconventional measures like jacket well, bore-blast technique, fracture seal cementation, stream blasting, recharging through borewells etc. will be implemented in selected villages/wadis of all the districts in the state.

Therefore, following the rules of this GR, the Pune Municipal Corporation (PMC) has commenced building rainwater harvesting plants on its selected 72 buildings in Pune city to save, conserve and manage water. And use the excess water to recharge groundwater.

NEED FOR RAINWATER HARVESTING

Nature replenishes the groundwater resources annually through rainfall; by way of infiltration through soil layers. Due to urbanization, the soil surface exposed to natural recharge gets reduced. Therefore, the natural recharge is diminishing, resulting in drying of wells. Groundwater source has the benefit of availability where water is needed and during emergencies and scarcity period, the public at large or NGOs should take measure to improve the groundwater recharge by rainwater harvesting to maintain the reliable and sustainable groundwater resource for supplementary domestic and industrial needs by groundwater balance use.

RAINWATER HARVESTING:

AIMS, OBJECTIVES & SCOPE

Rainwater harvesting may be defined as the process of augmenting the natural infiltration of rainwater or surface runoff into the ground by some artificial methods. The methods suggested are recharge through pits, trenches, borewells shafts by directly diverting runoff water into existing or disused wells or conserving the rainwater by artificial storing and using the same for human use. The choice and effectiveness of any method is governed by local hydrological and soil conditions and the ultimate use of water.

METHODS OF RAINWATER HARVESTING IN URBAN CITIES

Broadly the rainwater can be harvested by two methods:

1. Store the rainwater in containers above or above grounds or below grounds
2. Recharge into the soil for withdrawal later by groundwater recharging basis.

ANY RAINWATER HARVESTING WILL HAVE FOUR AREAS:

1. Catchment area
2. Conduits
3. Settlement Tank
4. Recharge facility or storage facility.

The rationale behind using the existing Rainwater Harvesting systems

- Reduces the run-off volume and the peak flow, hence mitigate floods.
- Recharges groundwater thus is a solution to water shortage problem in winters.
- Reduces the cost per litre of water since a large amount of power that is consumed while pumping water from subsurface aquifers can be saved.
- No worry dealing with inevitable shutoffs of water as there will be a stored reserve.
- Cuts down energy use on supplying water. Hence it could provide leverage to the municipality.

SITE VISIT

For the purpose of finding out the benefits of the rainwater harvesting, fieldwork was conducted where multiple sites were visited to study the functioning of these rainwater harvesting systems.

The sites have been categorized:

1. Schools
2. Vegetable Market
3. Community Halls

4. Hospitals
5. Recreational Centers
6. Printing Press
7. Art Gallery
8. Swimming Pools
9. Sports Complex

In order to see the effect of rainwater harvesting in a real-world situation, visits to some of the sites were carried out. These sites come under PMC and rooftop rainwater harvesting system has been already set up on these buildings. Some of these buildings have been mentioned below along with the water harvested by them along with the pictures.

PMC'S INITIATIVE IN 2016

The Pune Municipal Corporation, in 2016, undertook an initiative to install rain water harvesting systems in 75 civic body buildings under the guidance of Col. Shashikant Dalvi. It was found that an area of 73735.36 sq mtrs. which included the terraces of various hospitals, theaters, schools and ward building had the potential to harvest 55.3 million litres of rain water. This is enough to fulfill the water requirement of 5,00,000 people. This report focusses on the possibility of the installing rainwater harvesting systems on all the 13,000 buildings in Pune and their potential to fulfill the water requirements of the 40 lakh people residing in Pune. This report includes data collected from site visits to various schools, community halls, hospitals etc.

SHIRISHKUMAR VIDYALAYA

Figure 2: Shirishkumar Vidyalaya

ADDRESS: SHIVAJI NAGAR

ROOFTOP AREA:

64 m X 33 m = 2112 sq. m

SIZE OF FILTRATION

CHAMBERS: 2.60M x 2.75M

DEPTH OF BORE: 110 M

STATUS: COMPLETED

RUNOFF: 401052.28 GALLONS

Figure 2 (i)

Figure 2 (ii)

Figure 2 (iii)

OTTA MARKET

ADDRESS: DHANORI

ROOFTOP AREA: 243.50 sq. m.

SIZE OF FILTRATION CHAMBERS: 2.0m x 2.0m

DEPTH OF BORE: 30 M

STATUS: COMPLETED

RUNOFF: 4623.86 GALLONS

Figure 3 (i)

Figure 3 (ii)

Figure 3 (iii)

KRANTIVEER LAHUJI SALVE E-LEARNING SCHOOL

Figure 4: Krantiveer Lahuji Salve E-learning School

ADDRESS: YERAWADA

ROOFTOP AREA:

30 m X 32 m = 960 sq. m.

SIZE OF FILTRATION CHAMBERS: 2M x 2M

DEPTH OF BORE: 45M

STATUS: COMPLETED

RUNOFF:

182296.47 GALLONS


Figure 4 (i)


Figure 4 (ii)


Figure 4 (iii)


Figure 4 (iv)


Figure 4 (v)

BAPUSAHEB KEDARI SWIMMING TANK

ADDRESS: WANOWRIE

ROOFTOP AREA: 16.04 m X 9.54 m = 153.02 sq. m.

SIZE OF FILTRATION CHAMBERS: 7.85 cu. m.

DEPTH OF BORE: 100 m

STATUS: COMPLETED

RUNOFF: 78241.26 GALLONS

Figure 5: Bapusaheb Kedari Swimming Tank

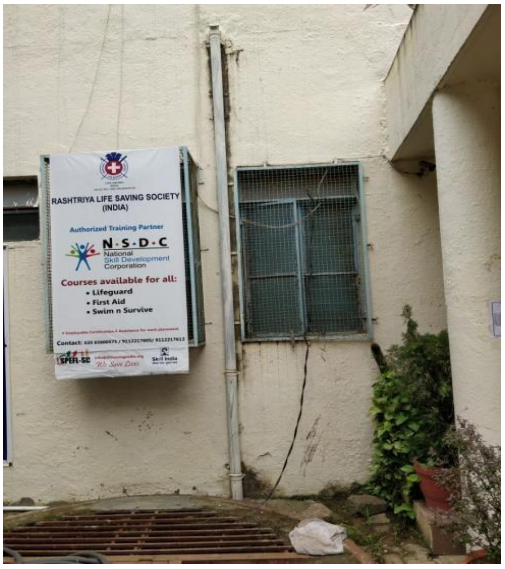

Figure 5 (i)

KASTURBA GANDHI VIDYALAYA

Figure 6: Kasturba Gandhi Vidyalaya

ADDRESS: KOREGAON PARK

ROOFTOP AREA: 832.18 sq. m.

SIZE OF FILTRATION CHAMBERS:

2m x 2m

DEPTH OF BORE: 35 M

STATUS: COMPLETED

RUNOFF: 157075.24 GALLONS

Figure 6 (i)

Figure 6 (ii)

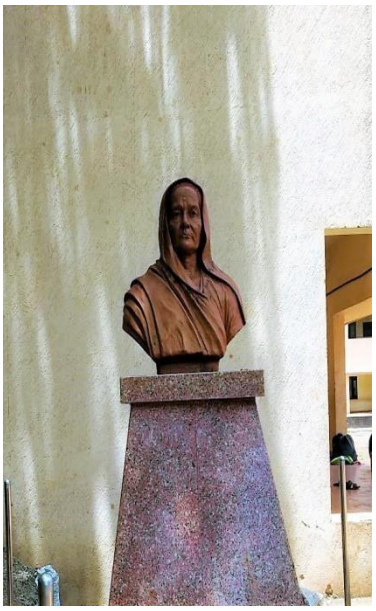

Figure 6 (iii)

LATE V.D. GHATE SCHOOL

ADDRESS: YERAWADA

ROOFTOP AREA:

9.3m X 48m = 446.4sq.m.

SIZE OF FILTRATION CHAMBERS:

2M x 2M

DEPTH OF BORE: 45M

STATUS: COMPLETED

RUNOFF: 84767.85 GALLONS

Figure 7: Late V. D. Ghate School

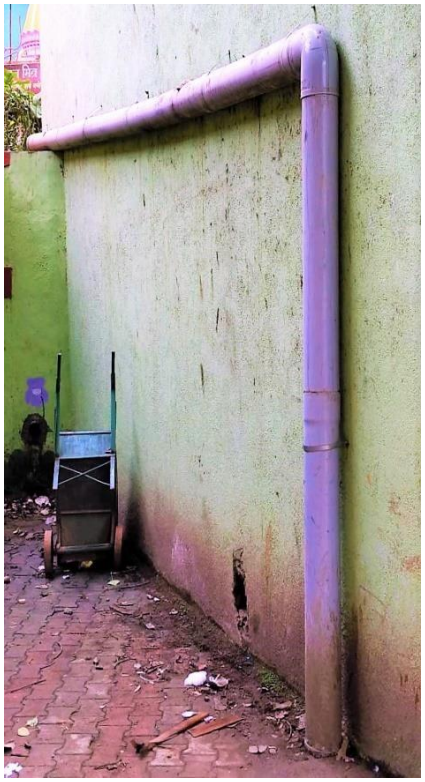

Figure 7 (i)

Figure 7 (ii)

Figure 7 (iii)

VITHAL RAO GADGIL PRIMARY SCHOOL

Figure 8 (i)

ADDRESS: VISHRANTWADI

ROOFTOP AREA: 28 m X 9.4 m = 263.20 sq. m.

45 m X 9.4 m = 423 sq. m.

Total = 686.2 sq. m.

SIZE OF FILTRATION CHAMBERS: 2M x 2M

DEPTH OF BORE: 45M

STATUS: COMPLETED

RUNOFF: 130902.562784

Figure 8 (ii)

Figure 8: Vithal Rao Gadgil Primary School

Figure 8 (iii)

Figure 8 (iv)

BHAJI MANDI – KALAS

ADDRESS: KALAS

ROOFTOP AREA: 691.78 sq. m.

SIZE OF FILTRATION CHAMBERS: 1.5m x 1.5m

DEPTH OF BORE: 45 M

STATUS: COMPLETED

RUNOFF:

131363.603 GALLONS

Figure 9: Bhaji Madi - Kalas

Figure 9 (i)

Figure 9 (ii)

Figure 9 (iii)

Figure 9 (iv)

SANT GYANESHWAR VIDYALAYA

Figure 10: Sant Gyaneshwar Vidyalaya

ADDRESS: VISHRANTWADI

ROOFTOP AREA:

15 m X 43 m = 645 sq. m.

48 m X 9.5 m = 456 sq. m.

5 m X 7 m = 35 sq. m.

31.8 m X 9.4 m = 298.92 sq. m.

30 m X 9.5 m = 285 sq. m.

Total = 1649.92 sq. m.

SIZE OF FILTRATION CHAMBER:

2M x 2M (2 Nos.)

DEPTH OF BORE: 45M + 45M

STATUS: COMPLETED

RUNOFF: 2557381.115 GALLONS

Figure 10 (i)

Figure 10 (ii)

Figure 10 (iii)

COLONEL SHASHIKANT DALVI

Colonel (retd) Shashikant Dalvi served with the Indian Army from 1969 to Feb 2002. During that time, he participated in the 1971 war to liberate Bangladesh. He was also involved in cutting edge technological achievements to enable defence machinery to operate at sub-zero temperatures in high altitudes.

Post-retirement, he implemented Pune city's first roof-top rainwater harvesting project in 2003 in his housing society. This resulted in a 'Tanker Water' free society, which saved costs and improved the water table in Viman Nagar. After that, he started spreading awareness on water conservation, through his organisation, *PARJANYA*. He successfully helped more than 500 different organisations like Housing Societies, Schools, Colleges, Hospitals, Industry etc. to improve the falling ground-water table in their locations and to overcome water shortages.

He attended the Climate Reality Leadership training at Melbourne, Australia in 2014. It was a 3-day workshop was conducted by Nobel Laureate, Al Gore. Since then, he has tirelessly been spreading awareness on Climate Change and its adverse impacts. He is currently District Manager, which is a purely voluntary position.

EXPLOREIT

EXPLOREiT
Ideation. Creation. Consultancy.

ExploreiT is a team of energetic and motivated youngsters formed by alumni of XLRI, Jamshedpur and the students from Symbiosis Centre for Management Studies, Pune. We came up with the idea of this startup when we observed a huge gap between research and the students, especially the ones pursuing their undergraduate. We believe that there should not be a valley of difference between recreation and education but they should run together and therefore we want to set up an intellectual environment where the youth of the country, grow morally and mentally.

Building Categories	Numbers	Rooftop Area- Sq Mtrs	Rain Water Potential- Ltrs
Drama Theaters	10	25882.82	19.4 million litres
Hospitals	28	12646.9	9.48 million litres
Schools	21	21350.79	16.1 million litres
Ward Offices	07	4200.00	3.15 million litres
Commercial Buildings	02	3161.85	2.38 million litres
Sports Buildings	07	6490.00	4.87 million litres
	75	73735.36 sq meters	55.3 million litres

SUMMARY

Water supply management problem is once again in limelight. Civic administration & political parties are promising 24/7 water supply to citizens since the last few years. This planning is based on Water availability from the four dams including Khadakwasla & water from Bhima Ashked dam. Rising population & addition into population due to the merging of 34 villages raises the doubts about the success of this scheme. Also, Deficit monsoon due to rising global warming will reduce the water supply from the dams. This scheme is a possible reality provided Civic administration implement the following:

Unequal Water Distribution- Presently due to inadequate infrastructure Civic administration is unable to provide equal water distribution at the rate of 135 litres per day per person. This has led to increased dependency on groundwater, also on tanker water.

Groundwater Management- At present anybody can dig a bore well & start extracting groundwater to meet water demands. Unchecked over-extraction of groundwater has resulted in rapid depletion of groundwater level. PMC should enact a legislation to seek written permission to dig a bore/ open well with a written undertaking to recharge groundwater using Rainwater Harvesting (RWH) methods.

Implementation of Rainwater Harvesting- Lack of implementation of State Govt & PMC guidelines on rainwater harvesting. State Govt GR dated Feb 2002 makes Rooftop rainwater harvesting mandatory on all Govt & Public Buildings. In 2007 PMC issued guideline to make rainwater harvesting mandatory on all new buildings. The rainwater potential of Pune city is around 75,000 litres of rainwater on a 1000 sq. ft. of catchment area like rooftop, or 3 million litres on an acre.

Recycling & reuse of Greywater- Out of 135 litres of water around 65 litres of water turns in to greywater. This needs to be recycled & reused for flushing & gardening.

Leakage of Water in Transportation- as per PMC report around 40 % leakage is reported in pipelines. Unless there is a planned program to replace the old pipe, the leakage will continue.

In summary, by implementing the above-mentioned doable things we can positively achieve 24/7 water supply not only in Pune but anywhere in the state or the country. Dams alone will not be able to meet the water demand of the rising population. Also, non-desilting of all the dams reduces the availability of reservoir capacity to hold useful water. The blessings of Mother Nature are available at free of cost on our rooftop & other catchments. The above-mentioned provisions will help augment the water supply from the dams. Unfortunately, our elected representatives & also civic administration is not paying desired attention to such important issues.

The Climate Reality Project
INDIA

Al Gore's Climate Leadership Program

The Climate Reality Project

In 2006, The Climate Reality Project Chairman and former U.S. Vice President Al Gore sparked an international conversation on climate change with his Academy Award-winning documentary, An Inconvenient Truth. It was just the beginning of a climate revolution, and a year later he founded The Climate Reality Project. At The Climate Reality Project, our mission is to catalyze a global solution to the climate crisis by making the urgent action a necessity across every level of society.

The Climate Reality Project has branches in 10 countries. The Climate Reality Leadership Corps has been training and empowering everyday people to become world changers – and then mobilizing them for action. Currently, more than 17,000 diverse and dedicated volunteers internationally called Climate Reality Leaders from over 150 countries have been trained. Every year, Climate Reality reach millions of households and individuals on television and online platforms through its annual broadcast 24 Hours of Reality.

The Climate Reality Project India

The Climate Reality Project India is an independent chapter of The Climate Reality Project (International) was established in March 2008 with the help of Al Gore and TERI. In 2009, it was incorporated as a trust in Mumbai with eminent Indians as trustees.

Apart from continuing to expand climate change training and presentations, Climate Reality India's work includes the climate change awareness and action programs to make a bigger impact, for example through our education program we are working with teachers to take the message deeper into classrooms.

Programs like climate change and sustainability education for schools and Climate Youth Leadership Program for colleges aims to bring leadership to future generation and help educational institutes in a transition towards a more clean and sustainable future.

Climate Reality has been working closely with partners and like-minded organizations, with a goal to strengthen India's Paris commitments. Some of the campaigns are tree plantation drives, 100% committed for clean energy, water conservation, rainwater harvesting, and support to electric mobility.

The India branch supports more than 550 trained Climate Reality Leaders who are taking climate actions at many levels, and more than 900 volunteers spread all over the country. Climate Reality India is developing new content to enhance community actions, both online and on the ground.

The Climate Reality Project
INDIA

Al Gore's Climate Leadership Program

Highlights of our Programs:

Teachers Training Program on Climate Change and Sustainable Development Goals (SDGs)

The Teacher Training Program is our flagship program running successfully since 2009. We have trained more than 5000 teachers from over 500 schools across India. We have reached out private as well as government schools in Delhi, Himachal, Uttarakhand, and Maharashtra to train teachers. These teachers are supported by online training and teaching content through website and mobile application.

Principals Conclave on SDGs and Climate Change Education

Half day conference to sensitize and build leadership in the school's administration to teach sustainable development Goals and environmental education in schools and create a sustainable environment. The project partner is UNESCO India. The conclaves have been already done in Bhubaneshwar, New Delhi, Mumbai and Dehradun sensitizing more than 350 principals from government and private schools.

Tree Plantation Drives and Water Conservation

Seeing forests as a critical tool for offsetting emissions, and to support India's INDC, Climate Reality India is supporting plantations through its partners, Earth Day plantation events and Climate Reality Leaders. We have planted more than 1,50,000 fruit trees to marginalized farmers in India and more than 50,000 mangroves in Sundarbans with the help of Climate Reality Leaders.

Knowing climate change is and will continuously induce water stress in most of the country, Climate Reality India is promoting Rain Water Harvesting through training and awareness programs. We have built RWH structures in Beed District, in the Marathwada region of Maharashtra, one of the worst droughts hit region, with the help of the local community, leaders and civic bodies.

To support our initiatives / request a presentation / or get any other information, you may contact us at:

The Climate Project Foundation
513-516, 5th Floor, Narain Manzil, Barakhamba Road, New Delhi-110001
Email: india@climatereality.com| website: www.tcpf-india.org, www.climatereality.org.in