Compendium of Best Practices

Recognising excellence in water management and conservation

4th Edition of FICCI WATER AWARDS



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This report is a compilation of best practices received as part of the 4th Edition of FICCI Water Awards. The case studies of the awardees are published in the report.

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FICCI acknowledges the eminent members of the Jury for their exceptional guidance and contribution in assessing and evaluating each case study submitted. We also extend our gratitude to the organizations who participated under the various categories of the 4th Edition of FICCI Water Awards.

Team's Contribution to the FICCI Water Awards and Compendium

The entire process of the FICCI Water Awards and development of Compendium has been executed by the FICCI Water Mission Secretariat; Rita Roy Choudhury, Senior Director, Head – Environment, Climate Change, Renewable Energy & Water Division, Head – India Sanitation Coalition Secretariat; Biba Jasmine, Assistant Director; Pradnya Mihir Mathur, Assistant Director; Swapna Patil, Senior Assistant Director.

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FOREWORD



Access to freshwater is one of the biggest crises India faces considering the pace at which it is developing and urbanizing. The growing population, increasing urbanization, changing lifestyles and rapid economic growth have brought water conservation and management to the forefront of issues requiring resolution as well as policy making. It has nudged both users of water as well as the service providers of water related solutions to rethink strategies for water sustainability and wastewater management.

Water availability is and will continue to be a major driving factor for meeting the growth essentials across all sectors – agriculture, industry and public services. In recent years, we have witnessed a growing incidence of conflicts amongst different users and across different regions of our country over sharing of water. It is time that each and every user of water values the need for water conservation and takes steps to prevent its wastage.

The FICCI Water Mission highlights the need for sustainable initiatives in the management of water resources and calls for greater sharing of good practices that can be replicated.

While in today's times the discussion is focused more around what is not being done appropriately for water conservation and management, and rightly so, as the need for adopting multifarious solutions to address the crisis is an absolute imperative, we also need a strong focus on what is being done right, in a positive and proactive manner by industry for managing our scarce water resources in a sustainable manner. This is where FICCI believes in creating sensitization on models that are robust, scalable and replicable.

To recognise excellence in water management and conservation, the annual FICCI Water Awards was launched under the aegis of the FICCI Water Mission. The Awards give recognition to significant sustainability initiatives and best practices in water adopted by industry, in their operations as well as in communities. The Awards also provide recognition to initiatives by NGOs. The various categories of the FICCI Water Awards address crucial issues :ways to reduce water consumption by suppliers and purchasers up and down the supply chain, working towards the goal of zero discharge; what best practices need to be adopted to recycle and reuse water by lowering toxic and other contaminants and changing production processes to be more water efficient; encouraging water conservation and improved water management systems by the non-governmental groups; and how small and medium sized enterprises can be assisted to improve water management using innovative practices.
Fortunately, there are bright spots of innovation and new approaches within the water space that are learning to do more with less.

This Compendium of Best Practices is a compilation of the award-winning case studies which identify opportunities to reduce water use while achieving the aspirations of growth. It also aims to raise awareness on the scale and urgency of the water challenge facing the industrial sector in India and facilitate the engagement of new stakeholders in the discussion on the future management of water.

The FICCI Water Awards is a continuing journey of great learning and insights that come from the highly experienced and knowledgeable members of the Jury as well as from the winners of the Awards themselves. That in itself also lends a huge impetus to our effort to continually reform and strengthen the Awards process each year. For this, I am truly grateful to the eminent Jury and all the award nominees who have been part of this process.

Naina Lal Kidwai

Past President FICCI
Chairman, FICCI Water Mission

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Compendium of Best Practices

MESSAGE



Water touches every aspect of life, and in India uncertainty over access to and the availability of this basic resource may be reaching crisis levels. As India continues to undergo dramatic shifts caused by a growing economy and population, competing demands for this limited resource coming from households, industry, and agriculture have wide-ranging implications for the country's future.

The Global Water Resources has estimated that two out of every three people will live in water-stressed areas by the year 2025. Also, it is estimated that 25 countries will be experiencing water stress (below 1,700 m3 per capita per year) by 2025. In today's times, 450 million people in 29 countries suffer from water shortages, which puts a huge pressure especially on the growing economies to use water sustainability and also resolve their growing imbalance of supply and demand.

FICCI with its bilateral, multilateral partners, and industry members have been working consistently to promote water conservation strategies among its member companies. Considering the urgent need to recognize efforts of Indian industry and civil society in the areas of water efficiency, management and conservation, the FICCI Water Mission was constituted in 2011 to advance the policy dialogue and promote awareness and thought leadership in water use efficiency.

The FICCI Water Mission, instituted the Water Awards to recognise excellence in water conservation and management by industry. It also recognizes the contribution of the NGO sector in this space.

The FICCI Water Mission Team will carry on the work of documenting good practices and continue with their efforts to recognize excellence in water management and conservation. We also continually strive to bring the connect between water with the areas of environment, climate change, and sanitation.

Dr A Didar Singh

Secretary General
Federation of Indian Chambers of Commerce & Industry (FICCI)

4th Edition of FICCI WATER AWARDS

FICCI Water Awards







FICCI launched the Annual Water Awards in 2012. The awards were initiated with the following objectives:

- Recognize efforts and leadership in the area of water efficiency and conservation; and
- Develop a knowledge base on sustainable water management practices adopted by different stakeholders and disseminate best practices for encouraging their adoption.

Sl. No	Categories	Awardees
1	Industrial Water Use Efficiency	Industrial units belonging to the water intensive sectors
2	Community Initiatives by Industry	Industrial units (CSR related but community focused initiatives only)
3	Initiatives by NGOs	NGOs (Registered as a society, trust, not for proit organization) working in the area of watershed management and drinking water
4	Innovation	Product developer / technology supplier in the area of water purification and treatment



Selection Process

The call for awards is put up through print and online advertisements, and nominations for the different categories are received. A standard template for sending information is developed for every category. An initial screening is done to see if the applications received fulfiled the eligibility criteria. This is done on the basis of the narrative submission by the applicants.

After the first level of screening, gaps and the missing information was identified, and a set of questions were sent to the individual participants and more clarification was sought. The additional information received was used to assess the overall application form by the Jury in the second screening round and shortlisting was done. The shortlisted candidate was then called to present their work to the Jury followed by a question and answer round. The final list of winners was unanimously selected by the eminent Jury in the each category.

Announcement of call for awards

↓

Submission of entries

↓

First round of screening and shortlisting

↓

Second round of shortlisting

↓

Presentation by the finalists to the Jury

↓

Selection of winners



JURY MEMBERS















Chair, Jury of FICCI Water Awards 2016



Dr Mihir Shah
President, Bharat Rural Livelihood Foundation
Former Member, Planning Commission

From 2009 to 2014, Dr Mihir Shah was Member, Planning Commission, Government of India, holding the portfolios of Water Resources, Rural Development and Panchayati Raj. Dr Shah was chiefly responsible for drafting the paradigm shift in the management of water resources enunciated in the 12th Five Year Plan. He also initiated a makeover of MGNREGA, the largest employment programme in human history, with a renewed emphasis on rural livelihoods based on construction of productive assets.

Dr Shah graduated in Economics from St. Stephen's College, Delhi University (where he won the prestigious KC Nag Economics Prize) and did his post-graduation from the Delhi School of Economics (where he was Merit Scholar) in the 1970s, before going on to complete a much-acclaimed doctoral dissertation at the Centre for Development Studies, Kerala.

Dr Shah is the first President of the Bharat Rural Livelihoods Foundation, which supports innovative civil society action in close partnership with state governments. He is Distinguished Visiting Professor, Shiv Nadar University. He is also Visiting Professor of Political Economy at Ashoka University, where he teaches a very popular course on the Political Economy of India's Development 1947-2015. He serves on the Academic Council of the Ambedkar University, Delhi. He is a Member of the International Steering Committee of the CGIAR Research Program on Water, Land and Ecosystems (WLE).

His papers have been published extensively in journals such as Economic and Political Weekly, Ambio, Hydrogeology Journal, Journal of Hydrology, Contributions to Indian Sociology, Review of Development and Change, Seminar and Indian Journal of Labour Economics.





Dr A K Gosain
Professor
Department of Civil Engineering
Indian Institute of Technology-Delhi

Professor Gosain of Civil Engineering, Department of Civil Engineeri ng, Indian Institute of Technology Delhi. He has his M.Tech. Water Resources Engineering and Ph.D., Water Resources Engineering (Hydrology) from IIT Delhi. Professor Gosain, a water resources expert of international repute, has served as Head of Civil Engineering Department and Computer Services Centre of IIT Delhi. He has made significant contributions to the National Communication to United Nations Framework Convention on Climate Change (UNFCCC) and formulation of the Ganga River Basin Management Plan (GRBMP).

His laurels also include, member, National Standing Committee on Watershed Conservation and Development Programme, Council for Advancement of People's Action and Rural Technology (CAPART). Besides this, Dr Gosain, has thirty two research papers in journals, conferences, symposia and workshops. Six research reports which have been widely circulated within the technical community of the country; and has been invited for lectures at seminars, workshops and training courses conducted by various organizations. He has also won the 11th 'MAUSAM' award for his paper 'Application of Deterministic Conceptual Models for Water Balance Studies', in the Journal 'MAUSAM', published by the India Meteorological Department.



Er M Gopalakrishnan
Secretary General (Retd.)
International Commission on Irrigation and Drainage

Er. Gopalakrishnan FNAE is a retired Secretary General of the International Commission on Irrigation and Drainage (ICID), a global organisation promoting the best agricultural water management practices. He is involved in the national and global community dialogues on water. He is a member of the TAC of World Water Development Reports, annually released by UN Water and WWAP, UNESCO.

Er. Gopalakrishnan had held several leadership positions in water sector after retiring from Country's premier water set up, Central Water Commission attached with Union Ministry of Water Resources in 2003. He is associated with the Interlinking of Rivers programme since 2003 and is currently associated with Special Committee on the subject under the Chairmanship of Union Water Resources Minister. He held lead professional positions such as President of the Indian Water Resources Society, Governor of the World Water Council etc. He is currently President of New Delhi Associate Centre of World Water Council which has its Secretariat in Central Board of Irrigation and Power, New Delhi.

Er. M. Gopalakrishnan possesses a thorough knowledge of Indian water related institutions and had actively contributed to the sector for over 53 years. He is professionally active and is associated in many Panels of Experts of various Power Utilities / Corporations dealing with Hydro and Dams in India as well as Nepal. His sensitiveness for environmental concerns are apparent in IUCN's choice to associate him in their regional Advisory Committees on Ecosystem for Life in recent times. He has assisted the UN Water in their TAC for assessing the best practices around the Globe for UN Water Awards for over 5 years.



Dr Nagesh Kumar
Professor
Department of Civil Engineering
Indian Institute of Science

Professor Dr Nagesh Kumar is working in the Department of Civil Engineering, Indian Institute of Science, Bangalore, since May 2002. Earlier he worked in IIT, Kharagpur (1994-2002) and NRSC, Hyderabad (1992-1994). He obtained Ph.D (Engg) from Indian Institute of Science, Bangalore, India in 1992. He visited Utah State University, USA in 1999 for 6 months on BOYSCAST fellowship. He worked as Visiting Professor in Ecole Nationale Supérieure des Mines, Saint-Etienne, France, in 2012. He has published more than 150 papers in leading international journals and conferences in his research fields. He has co-authored two text books viz., "Multi-criterion Analysis in Engineering and Management" published by PHI, New Delhi and "Floods in a Changing Climate: Hydrologic Modelling" published by Cambridge University Press, U.K. He is Associate Editor for ASCE Journal of Hydrologic Engineering. He is in the Editorial Board of Open Hydrology Journal, ISH Journal of Hydraulic Engg and Journal of Applied Computational Intelligence and Soft Computing. He is a member, Working Group on Climate Change, International Association of Hydraulic Engineering and Research (IAHR), Spain. He has been reviewer for more than 50 international journals including Water Resources Research and Journal of Hydrology. He is a Fellow of Institution of Engineers (India) and Indian Society for Hydraulics. He is a member of the AGU, IAHR, ASCE, IAHS (UK), IS-MCDM (USA) and Indian Society of Remote Sensing.











Mr Raghava Neti
Senior Infrastructure Specialist
The World Bank, India

Raghava Neti has about 25 years' experience in Urban Development, Rural and Urban Water and Sanitation, Natural Disaster Risk Mitigation sectors, working in diverse set of development projects and Technical Assistance activities, supporting the central and state governments in India. He is currently working with the World Bank as Senior Infrastructure Specialist, with Water Global Practice, based at New Delhi, leading many of its projects. Raghava Neti has led many of the innovative projects in the World Bank, some of them are conceived for the first time in India. He is the Team Leader for the country's first Program-for-Results (PforR) investment support program that was designed to disburse funds only upon achievement of results in the Rural Water Supply and Sanitation (RWSS) Sector in Maharashtra. In the Urban Water Sector, he has successfully led to completion, the country's first 24x7 water supply project in India that has for the first time demonstrated improved and sustainable 24x7 water services in India, which is now being scaled up.



Dr Vinod Tare
Professor
Indian Institute of
Technology- Kanpur

Dr Vinod Tare is a Professor of Environmental Engineering and Management at the Indian Institute of Technology Kanpur. He is a Civil Engineer, obtained his Master's and Doctoral degrees in Environmental Engineering from IIT Kanpur, and subsequently did post-doctoral research at the Illinois Institute of Technology, Chicago. Dr Tare has guided numerous masters' and doctoral dissertations. He was the Chairman of the India Water Impact Summit 2013 held at the India Habitat Centre, New Delhi and International Conference on Water - Harvesting, Storage and Conservation (WHSC-2009). Dr Tare is consultant/advisor to many government organisations, NGOs, Industries, and Institutions. Dr Tare is presently leading consortia of seven IITs for the preparation of Ganga River Basin Environment Management Plan to be submitted to the National Ganga River Basin Authority chaired by the Prime Minister.



Mr VK Madhavan
CEO
Water Aid-India

V K Madhavan is the Chief Executive of WaterAid India. Following a Master's in International Politics from Jawaharlal Nehru University in 1991, Madhavan commenced working with the Urmul Rural Health Research and Development Trust in Bikaner district of north-western India where he worked in various capacities till 1998. Since then, Madhavan has worked with ActionAid and The Hunger Project and subsequently spent eight years working in the Kumaun region of Uttarakhand with the Central Himalayan Rural Action Group (Chirag). In his years as a development professional, Madhavan has worked on an integrated approach to rural development - community health, primary education, natural resource management, on and off-farm livelihoods and investing in young people. Prior to assuming his role as Chief Executive of WaterAid India, Madhavan was Managing Director of Skills Education Private Limited, a company that provides youth with access to information, skills and opportunities leading to employment. Madhavan was a TED Global Fellow in 2009 and a TED Senior Fellow in 2010.



Water Awards Through The Years



4th Edition of FICCI WATER AWARDS

2012











1. Essar Steel India Limited, Hazira, Winner, Industrial Water Use Efficiency Category.
2. ITC Limited, 1st Runner Up, Industrial Water Use Efficiency Category.
3. Tata Chemicals Limited, Winners, Community Initiatives Category.
4. Hindustan Unilever Limited, 1st Runner Up, Community Initiatives Category.
5. HSIL Limited, Winners, Innovation Category.

Winners of the Water Awards being felicitated by Shri Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission, Government of India, Smt. Shiela Dixit, the then Chief Minister of Delhi, Ms. Naina Lal Kidwai, Chairman, FICCI Water Mission, and the then President, FICCI and Dr. Arbind Prasad, Director General, FICCI.





















2013

1. Noamundi Iron Ore Mine - Tata Steel Limited, Winners, Industrial Water Use Efficiency Category.
2. ITC Ltd – Bangalore, 1st Runner-Up, Industrial Water Use Efficiency Category.
3. JSW Steel Limited, Vijayanagar Works, 2nd Runner Up, Industrial Water Use Efficiency Category.
4. Ambuja Cement Foundation, Winners, Community Initiatives Category.
5. ITC Limited, 1st Runner Up, Community Initiatives Category.
6. Vikram Cement Works, 2nd Runner Up, Community Initiatives Category.
7. IRRAD (An Initiative of S. M. Sehgal Foundation), Winners, Initiatives by NGOs.
8. Watershed Organisation Trust, 1st Runner Up, Initiatives by NGOs.
9. KGDS RE Pvt. Ltd., DST & NIOT, Winners, Innovation Category.
10. Ortho Clinical Diagnostic, J&J Company, 1st Runner Up, Innovation Category.

Winners of the Water Awards being felicitated by Shri Montek Singh Ahluwalia, Deputy Chairman of the Planning Commission, Government of India, Ms. Naina Lal Kidwai, Chairman, FICCI Water Mission, and the then President, FICCI and Mr. Atul Singh, Group President, Asia Pacific, The Coca-Cola Company.

















2015

1. ITC Munger (1st Prize winner), Industrial Water Use Efficiency
2. Ambuja Cements Ltd (2nd Prize winner), Industrial Water Use Efficiency
3. Infosys Limited, Bangalore (3rd Prize Winner), Industrial Water Use Efficiency
4. Ambuja Cements Foundation (1st Prize winner), Community Initiatives by the Industries
5. Ultratech Cement Ltd (2nd Prize Winner), Community Initiatives by the Industries
6. Ramkrishna Jaidayal Dalmia Seva Sansthan (1st Prize winner), Initiatives by NGOs
7. SIRUTHULI and Watershed Organization Trust (joint 2nd Prize Winner), Initiatives by NGOs
8. Sanjeevani Institute for Empowerment and Development (3rd Prize Winner), Initiatives by NGOs

Winners of the Water Awards being felicitated by Ms Jyotsna Suri, FICCI President (2015) and Ms Naina Lal Kidwai, Past president FICCI (2014).

Category: Industrial Water Use Efficiency

1. ITC Limited, Saharanpur

ITC Ltd Saharanpur: ITC's vision to serve larger national priorities is realised by this strategic approach of embedding sustainability in its core business models. To strengthen its commitment further-ITC has its corporate strategy on water, which comprises of:

1. Conservation, Audits and Benchmarking - To achieve the lowest specific water consumption (water per unit of production).
2. Zero Waste Water Discharge - Treating and recycling all wastewater, thereby not only reducing fresh water intake but also preventing pollution of fresh water resources.
3. Creating Positive Footprint - Through rainwater harvesting, both at the Company premises and through relevant watershed projects.

Also, ITC is committed to achieving zero effluent discharge through treating and recycling of all wastewater and harvesting of rainwater on its properties. This not only reduces fresh water intake but also maximises groundwater recharge, reduces run off etc. Innovative strategies have been designed and implemented to create sustainable value chains linked to its businesses that encompass some of the most disadvantaged sections of society, especially those residing in rural India.

Water Use Pattern

Table 1 : Water use pattern for different purposes at the ITC Ltd Saharanpur Unit

Year	Water use in Industrial process only (in m^3)	Water use in Utilities and other services# (in m^3)	Water use for Drinking purposes (in m^3)	Actual production of the plant (MNC - Million Cigarettes)	Specific water consumption (m^3 per unit of production) Year	
					For fresh water only	For total water
2013-14	48071	40531		19638	4.51	NA
2014-15	35394	43751		17288	4.58	NA
2015-16	29949	30122		19638	4.06	NA

#other services like fire water, dust control etc.

Water Intake Sources

Table 2 : Various sources of water used by the Saharanpur unit.

Source of Water	Annual Water Intake in m^3	Cost of Water (₹/m^3)
Municipal Fresh Water Supply	-	-
Municipal Sewage/ Treated Sewage Supply	-	-
Groundwater Withdrawal	29949 (Industrial) + 30122 (Utility, Drinking and Other Services)	1.97
Private Water Tankers	-	-
Other sources (Mention source)	-	-

Water Conservation Measures (2012-2016):

Table 3 : Water conservation projects implemented form 2012-2016

Sl. No	Water conservation project/ measures implemented	Year of implementation	Actual / Planned date of completion	Annual water saving in m^3	Monetary saving due to water saving (Rs.)	Investment made (₹ Lakhs)	Payback period in years	Replicability of the measures implemented
1.	Water free urinals in place conventional water type	2012	Apr-12	308	607	3.8	-	Replicated
2	Drinking water taps is to be replaced with push type	2012	Feb-13	260	512	1.8	-	Replicated
3	Sensor based taps fixed in Canteen	2013	Sep-13	280	552	1.2	-	Replicated
4	Tertiary treatment Plant for ETP water recycling	2013	Nov-13	8000	157605	103	-	-

Sl. No	Water conservation project/ measures implemented	Year of implementation	Actual / Planned date of completion	Annual water saving in m^3	Monetary saving due to water saving (Rs.)	Investment made (₹ Lakhs)	Payback period in years	Replicability of the measures implemented
5	Replacement of water cooled compressor with air cooled compressor	2014	Dec-14	912	17328	65	-	-
6	Condensate recovery from AHU	2015	Aug-15	1200	2364	0.05	-	Replicated in all AHUs
7	Installation of Nozzles Type brush for Solar PV module cleaning	2012	Sep-15	180	360	0.2	-	Replicated
8	Hydrant Pipeline Replacement	2014	Nov-14	600	1182	15	-	-
9	Condensate and flash steam recovery improvement from process	2015	Nov-15	2569	48811	33	-	Replicated in all equipment
10	Steam humidifiers in AHU's replaced with Celdek pads for shop floor humidification	2015	Dec-15	920	1812	3.5	-	Replicated in all AHUs
11	UNIS 2015-16 – Water & Energy Conservation Drive at ITC Saharanpur	2015	Jan-16	60	NA	-	-	-
12	Rain Water Harvesting at Finished Goods Storage Area	2016	Feb-16	1090	NA	6.5	-	Replicated in all new buildings

Wastewater Generation and Treatment

Table 4 : Effluent generated and treatment from 2012-2016

Year	Effluent generated in m^3	Effluent treated in m^3	Effluent recycled back into the industrial process	Effluent discharged in m^3	% Effluent discharged in m^3	Effluent discharged/ unit of production
2013-14	15195	15195	15195	0	0	0
2014-15	16213	16213	16213	0	0	0
2015-16	15661	15661	15661	0	0	0

Rainwater Harvesting and Use

Rain Water Harvesting Structures completed

- Constructed 37 recharge pits across factory for Rain Water Harvesting
- Capacity of each recharge pit is 625 Lt./min

Two Types of recharge pits structures have been constructed as per the site location for Rain Water Harvesting:

- Recharge Trench with one bore well – 250mm Bore Diameter and 153mm PVC Pipe Diameter
- Recharge Trench with two bore well – 250mm Bore Diameter and 153mm PVC Pipe Diamete

Figure1: Recharge Pit Structure



Water Harvesting Structures

A detailed local Hydro-geology study was carried out by IIT Roorkee and Albien Groundwater Consultants for ITC Saharanpur to certify the actual benefits by Rain Water Harvesting via Recharge Pits.

To summarize the detailed study, Saharanpur is underlain by Indo-Gangetic alluvium of extensive thickness. There are three sand aquifers within 350ft below ground surface.

The following is the configuration of the aquifer systems:

1st Aquifer - Extends to a depth of 30 ft followed by clay formation, 5 ft thick

2nd Aquifer - Between 45 & 155 ft followed by clay extending to a depth of 215 ft

3rd Aquifer - Between 215 & 315 ft followed by 20 ft thick formation

Based on the study conducted, it was recommended that injection well must be drilled to an average depth of 100ft (30m) so that the advantage of both the first and second aquifer can be taken for recharging water.

Based on the study, Saharanpur factory has:

- Constructed 37 recharge pits across factory for Rain Water Harvesting - Capacity of each recharge pit is 625 Lt./min

Two Types of Recharge Pits Structures Constructed for Rain Water Harvesting

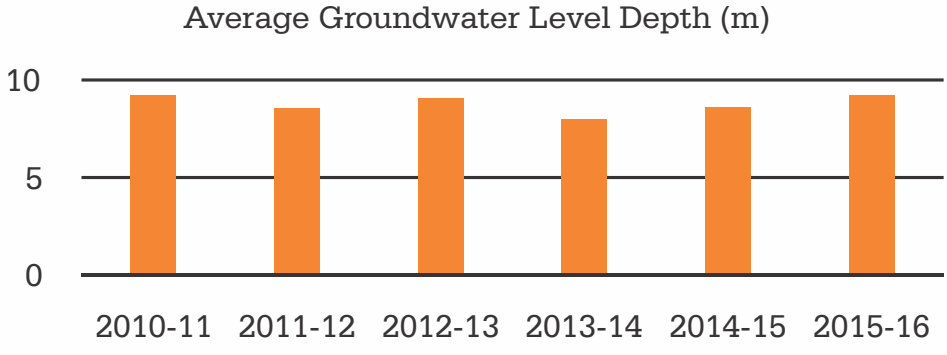
a. Recharge Trench with one bore well - 250mm Bore Diameter and 153mm PVC Pipe Diameter

b. Recharge Trench with two bore well - 250mm Bore Diameter and 153mm PVC Pipe Diameter

Monitoring Impacts of Groundwater Recharge

ITC Saharanpur Factory is having a Piezometer installed in the factory premises to measure the groundwater level. ITC Saharanpur factory consumes approximately 202 m^3 of fresh water per day. Complete quantity of water is drawn by three bore wells present in factory premises. Groundwater level is measured at a regular interval. Below table clearly shows that rain water harvesting in factory premises has positively impacted the groundwater table. groundwater level is also constant since last 6 years

Figure 2: Changes in level of groundwater form 2010-2016



Awareness Activities

Sl.No	List of Activities	Coverage	Reference
1	UNIS Event - Water Conservation Drive at ITC Saharanpur	786 Employees of ITC Saharanpur Participated	
2	Training by external expert to all ITC Employees on Leakage Management at Factory and Home	53 Participants	
3	Environment Day Celebration at ITC Saharanpur - contract workman took part in water conservation quiz and poster competition	108 contract workman participated	
4	Awareness session organized by ITC EHS Manager for Gardeners of ITC Saharanpur to reduce water consumption in gardening by using flexible sprinklers	12 Factory Gardeners Participated	
5	Training conducted for ETP, WTP and RO personals to implement best practices in conserving water and arresting leakages	8 Employees Covered	
6	Awareness session for the employees to eliminate water wastage in Solar Panel cleaning, equipment washing etc.	13 Employees Covered	
7	Environment Day Celebration at ITC Saharanpur - all employees and contract workman took part in water conservation quiz and poster competition	All Employees and Contract Workman	

2. Tata Motors Ltd.

Tata Motors Ltd. uses reduce, reuse and recycle, when it comes to water management.

An extremely hazardous product to the environment if released untreated, the waste industrial water from manufacturing units are all channelled to the effluent treatment system which conditions used water through many stages, including biological and chemical processes. The staff in charge of the treatment system regularly tests water in the plant laboratory to ensure that the treated water is of the optimum pH level.

Recycled water is then used for horticultural purposes within the plant. Part of them is channelled back into eco-lakes, which are home to species of birds and fishes.

Part of them is also transported through tankers to the water reservoirs within the plant which are used for fishery. In addition, sludge - a by-product from the sediments of the waste water, is reused after processing into bricks and paint. Through its effort to protect the environment, the Company strives to be a responsible corporate citizen by taking proactive stand towards industrial waste disposal.

Water Use Pattern

Table 9: Water used across various activities at the Tata Motors Limited Unit

Year	Water use in Industrial process only (in m^3)	Water use in Utilities and other services# (in m^3)	Water use for Drinking purposes (in m^3)	Actual production of the plant (mention unit of production in MNC)	Specific water consumption (m^3 per EVO)	
					For fresh water only (excluding rainwater)	For total water
2012-13	455995	56575	367700	114373.31	3.99	7.70
2013-14	330240	47450	326960	68104.52	4.85 #1	10.35 #1
2014-15	334950	40150	321060	74153.05	4.52	9.39
2015-16	406750	36600	322900	67023.35	6.07 #2	11.43 #2
2016-17 as on date	98600	16470	155550	37441.00	2.63 *	7.23

Other services like fire water, dust control etc.
1 Sp Water Consumption increase due substantial decrease in production. 41 % reduction in production while Sp water consumption increase is only 22%
2 Fresh water increase due to revamping of RP plant

Water Intake Sources

Table 10: Annual Water Intake against cost of water at the Tata Motors Ltd (m3)

Source of Water	Annual (2015-16) Water Intake in m^3	Cost of Water (₹/m^3)
Municipal Fresh Water Supply	766250	32.25
Municipal Sewage/ Treated Sewage Supply	0.00	0.00
groundwater Withdrawal	0.00	0.00
Private Water Tankers	0.00	0.00
Rainwater Harvesting	34850	7.00
Other sources (Mention source)	0.00	0.00

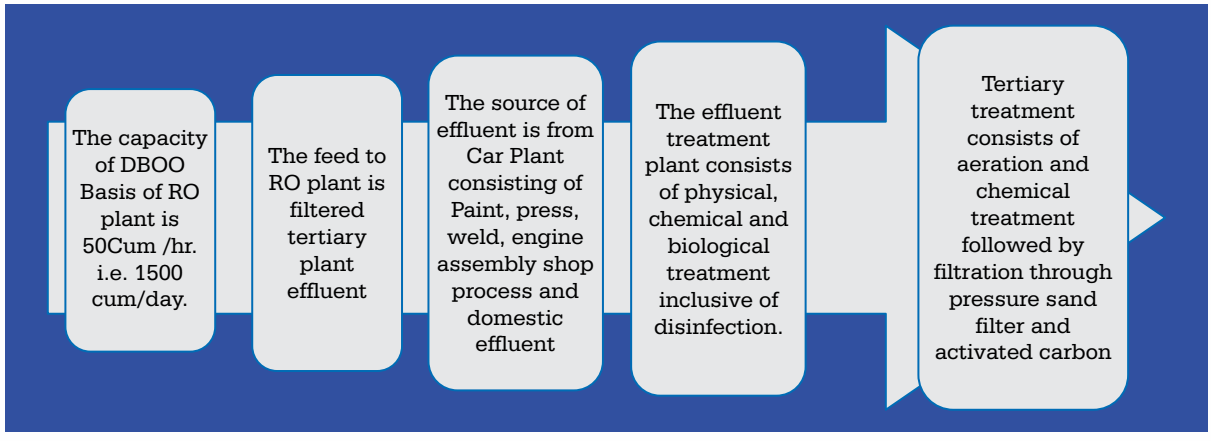
Water Conservation Measures

Table 11: Water conservation measures implemented from 2012-2016

Sl. No	Water conservation project/ measures implemented	Year of implementation	Actual / Planned date of completion	Annual water saving in m^3	Monetary saving due to water saving (in Lakhs)	Investment made (in Lakhs)	Payback period in Months
1	Replacement of Underground line below shop floor with new above ground line (South of assembly, Paint and weld shop)	12-13	12-13	109500	35.31	55	18.69
2	Isolation of redundant process water lines at Weld and Press shop	12-13	12-13	43800	14.13	0.5	0.42
3	Intermittent water supply for compressor house	12-13	12-13	18250	5.89	Nil	--
4	Direct Feeding of overhead process tank for Paint shop	12-13	12-13	43800	14.13	0.75	0.64
5	Treated effluent supply to JLR area	12-13	12-13	9125	2.94	15	61.17
6	DBOO Basis RO Plant (1000KLD)-To replace DM Plant	12-13	12-13	300000	60.0	20.0	Nil
7	Supply of drinking water for process purpose Weld shop	13-14	13-14	29200	9.42	20	11.27
8	New process water line to Engine shop	13-14	13-14	18250	5.89		
9	Isolation of leak prone drinking line	13-14	13-14	14600	4.71		

Sl. No	Water conservation project/ measures implemented	Year of implemen-tation	Actual / Planned date of completion	Annual water saving in m^3	Monetary saving due to water saving (in Lakhs)	Investment made (in Lakhs)	Payback period in Months
10	Identification and rectification of leakage P.H. No 3 to P.H. No 4	13-14	13-14	18250	5.89	0.25	0.09
11	Quality based draining Compresser House cooling Tower	13-14	13-14	5475	1.77	Nil	--
12	Hydrant Drain (During testing) with Small draining arrangement	14-15	14-15	7300	2.35	Nil	--
13	Restricted hour process water supply / On demand water supply	14-15	14-15	62050	20.01	NIL	--
14	Use of treated effluent for toilet flushing	14-15	14-15	7300	2.35	--	--
15	Leakage rectification at Engine shop area	14-15	14-15	10950	3.53	--	
16	Local cooling, recirculation and overhead water tank filling during non-peak hours	14-15	14-15	18250	5.89	Nil	--
17	DBOO Basis RO Plant (500KLD)	14-15	14-15	150000	30.0	10.0	--
18	Leakage rectification of Fire Hydrant line	15-16	15-16	9125	2.94	1.9	1.11
19	Partial replacement of RP feed water line	15-16	15-16	10950	3.53	3.09	2.00

Re-Cycling of Treated Effluent DBOO Basis RO Plant Design



Wastewater Generation and Treatment – ZID Achievement

Table 12: Effluent discharged/ unit of production from 2012-2016

Year	Effluent generated in m^3	Effluent treated in m^3	# Effluent recycled back into the industrial process in m^3	## Effluent used for maintaining the green cover	Effluent discharged in m^3	% Effluent discharged	Effluent discharged/ unit of production
2012-13	884878	884878	260180	624698	Nil	Nil	Nil
2013-14	753544	753544	224500	529044	Nil	Nil	Nil
2014-15	671383	671383	239770	431613	Nil	Nil	Nil
2015-16	644137	644137	100672	543465	Nil	Nil	Nil
2016-17 as on date	332469	332469	74840	257629	Nil	Nil	Nil

There are two RO plant installed on DBOO basis having capacity of 1000 KLD & 500 KLD to cater huge water demand at higher production level. The effective RO water generation capacity is more than 450000 Cum /year However; it may be noted that these plants are presently operated at lower level. So, as to fulfil the water demand of green cover. The treated effluent is first used for fulfilling green water demand & remaining treated effluent is converted for process purpose.

The green cover of 137318.00 Sq. Mtr at plant premises & 250 acres from lake house area has a huge water demand which is being fed by treated effluent. So as to ensure survival & sustenance of green cover

Wastewater Treatment Measures Undertaken

Figure 5: Wastewater Treatment Plant



The Effluent Treatment Plant (ETP) and Sewage Treatment Plant (STP) was commissioned in 1999 and caters to the industrial effluent and domestic sewage generated at Chikhali Works. The treatment includes primary and secondary biological treatment. The treated effluent with or without further tertiary treatment is used for gardening, horticulture, toilet flushing, and for use in process. The entire treated effluent is being used within plant premises.

(I) Industrial effluent:

1. Screening: This step includes coarse manual bar screen followed by a fine screen (DSM Screen) to remove large material, grit which otherwise would adversely affect the performance of the downstream equipment.

2. Oil water separation: The screened effluent flows into a Parallel Plate Separator (PPS) type Oil Water Separator unit which is a high rate unit of compact design. During this process the free oil globules whose density is less than that of water tend to move vertically upward and get collected on plates in the crests. The clarified effluent from the oil water separator then flows through a channel having a flow measuring device, to the primary clariflocculation section.

3. Clariflocculation: In this section the effluent is dosed with chemicals such as lime, alum, coagulant, and polyelectrolyte etc. in flash mixer tank. The effluent is then flocculated in a flocculator, to increase the floc size and remove any phosphates, heavy metals and silica as precipitates (with lime).

4. Biotower: is a high rate aerobic trickling filter having special PP packing media which provide a high surface area for adherence of biomass, as well as high voidage which prevents clogging of the filter bed. Here aerobic biochemical processes remove dissolved organics.

(II) Domestic Effluent Treatment:

1. Domestic effluent stream is provided with coarse and fine screens, followed by PPS type oil water separator.

2. Secondary biological treatment involves Activated Sludge Process in Aeration Tank provided with mechanical surface aerator. Under-flow sludge is recycled back into the aeration tank to maintain optimum MLSS levels in the Aeration Tank.

3. Secondary Clarifier is of compact PPS type. The clarified effluent from Secondary Clarifier, joins with the partially treated industrial effluent stream coming from biotower. Bio-sludge generated from Secondary Clarifier is mixed with underflow of Secondary Clarifier (Industrial stream) and taken for further treatment.

(III) Sludge Treatment:

1. Sludge from OWS is collected in sludge sump and pumped to a sludge conditioning unit where chemicals are added (If required) for thickening of sludge.

2. Conditioned sludge flows to a PPS type thickener, where thickened sludge is withdrawn by gravity to a thickened sludge sump, while the overflow is routed back to the influent receiving sump.

3. Chemical sludge is pumped to a conditioning tank where it is dosed with chemicals (If required) and thickened in a PPS type thickener. The process is similar to the working of oily sludge thickener. Bio-sludge is similarly conditioned with chemicals and thickened in a separate PPS type thickener.

4. The three thickened sludge streams are combined in the thickened sludge sump from where it is pumped to the centrifuge after conditioning it with polyelectrolyte.

5. De-watered sludge cake from the centrifuge is taken for disposal while the centrate is recycled back to the inlet sump.

6. Provision is also made for taking sludge from PPS, thickener sludge or centrifuge sludge on sludge drying beds if required.

(IV) Recycling Plant:

Recycling Plant is provided for tertiary treatment of treated effluent for re-use back in manufacturing process. The treatment scheme is described below:

1. Polishing by aeration: Treated effluent from final clarifier flows into a 'Polishing Aeration Tank, fitted with a floating mechanical aerator. Aeration helps to remove dissolved gases such as CO2, as well as impart dissolved oxygen.

2. Clariflocculation: As part of tertiary treatment treated effluent is conditioned with chemicals based on treatability in a flash mixer before it enters a PPS type clarifier. Flocculated suspended matter settles down and are withdrawn by gravity. This sludge is recycled back to the common chemical sludge sump in the main ETP.

3. Disinfection: Disinfection is done using sodium hypochlorite generated by electro-chlorination process.

4. Pressure Sand Filter (PSF) and Activated Carbon Filter (ACF): After disinfection water is passed through PSF and ACF. PSF eliminates suspended solids while ACF removes dissolved organics and residual chlorine.

5. De-Mineralisation (DM) Plant and RO Plant: Treated effluent is re-cycled for process purpose using DM or RO plant. DM Plant consists of strong acid cation exchangers followed by strong base anion exchangers.

6. The de-mineralised / RO water is blended with filtered water from ACF before and stored in final blended water storage tank, from where it is taken for use in process purpose.

   ETP / STP also includes other buildings like service block, laboratory, chemical house, common pump house, DM Plant building, RO plant etc.

Achievement of ZLD:

The ZLD action plan and water mass balance is worked out on the basis of maximum utilization of treated effluent for process purpose after fulfilment of optimum green cover demand. This aims at minimum use of Maharashtra Industrial Development Corporation (MIDC) supplied water and reduce dependence on the other sources of water. Tata Motors PVBU-

Chikhali Pune plant is having a huge plantation, landscaping and garden area within premises. This plant is adjacent to TML - CVBU Pune plant which has even more green area. The residential premises, lake house area is also spread over 400 acres with 40 acre of lake & 250 acres of green area. The green area from all this location had huge water demand. The treated effluent is preferably supplied to this green area. ZLD action plan accounts for all such requirement and based on which DBOO basis RO plants are installed / are being installed.

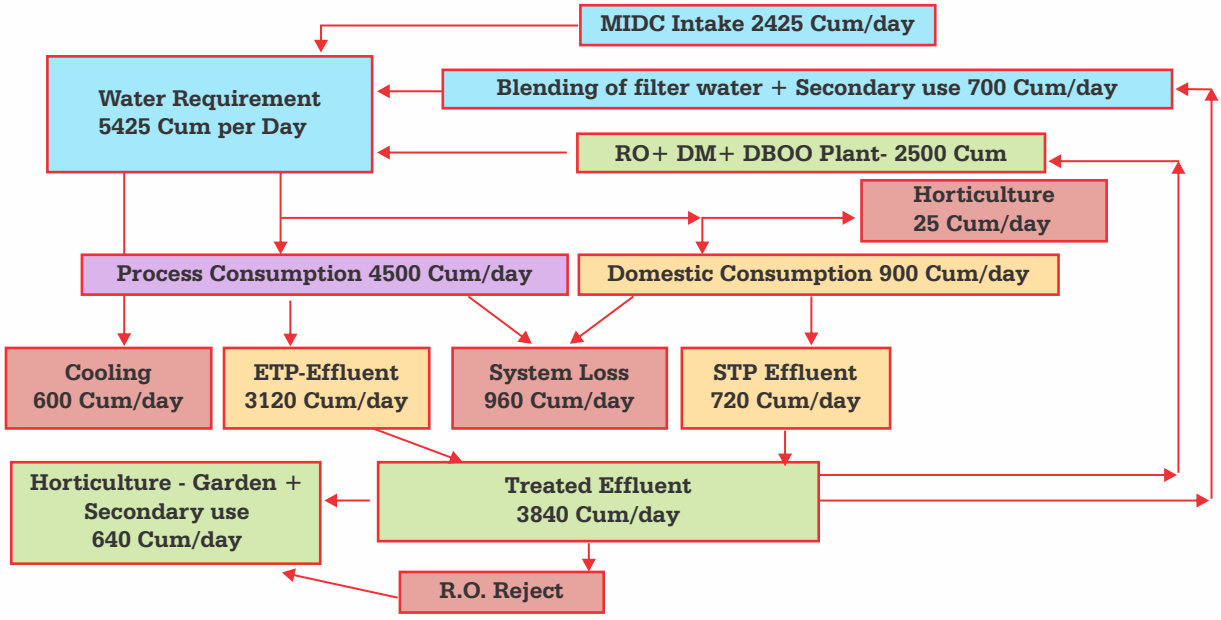
As such the recycling of treated effluent for process purpose is calculated based on the balance treated effluent available to avoid the fresh water consumption from MIDC (Maharashtra Industrial Development Corporation) which is nodal agency supplying the water to plants.

The Tata Motors PVBU Pune is already ZLD plant. The treated effluent is recycled back into process purpose through RO plant. The treated effluent is also used for secondary purpose such as toilet flushing, floor washing, vehicle washing etc. However, priority is given to maintain the green cover.

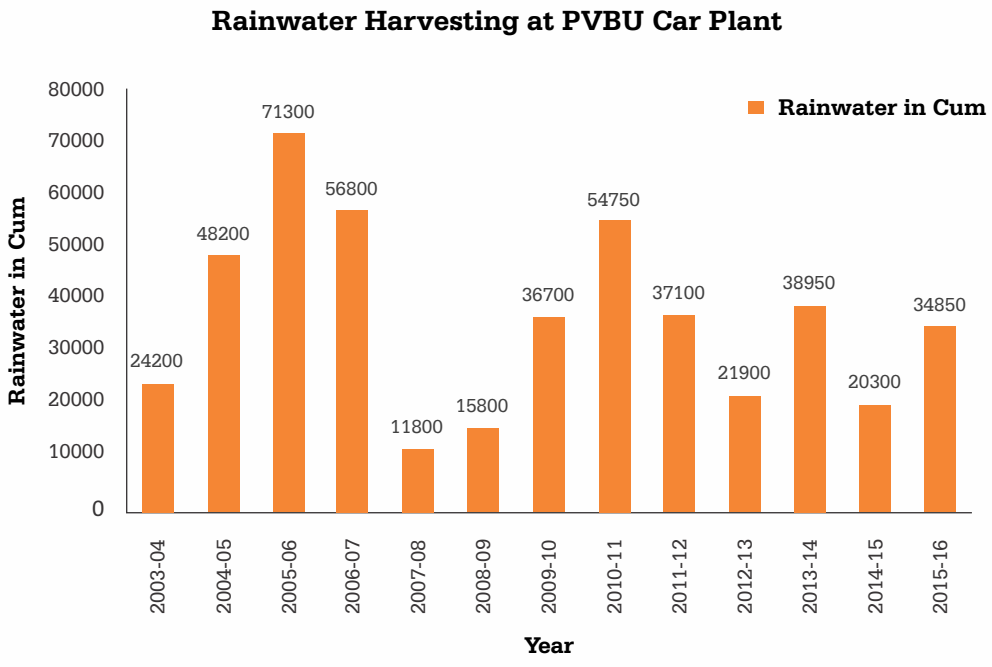
The installed capacity of RO plant as on date is 1500KLD. Which can produce 450000 Cum of process quality water from treated effluent.

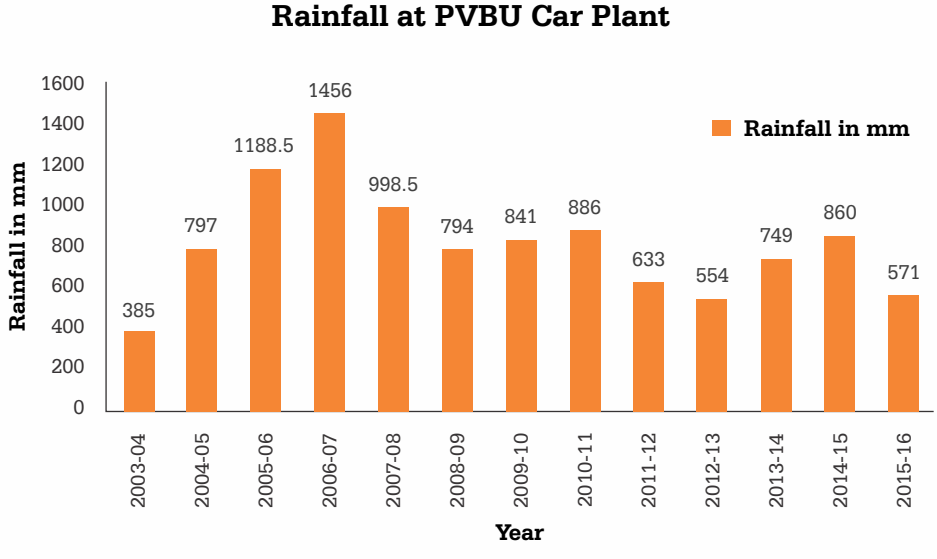
ZLD Long-term Strategy

PVBU - Chikhali ZLD - Ref Water Budget - MPCB



Rainwater Harvesting and Use





Generated water is blended with MIDC (Raw water source) water & same is supplied for process purpose. The general features of the blending activity are as - MIDC Raw water is analysed for specific parameters such pH, TDS, Hardness & chlorides. Generated process water from rainwater is also analysed for above parameters. Appropriate quantity of water is blended with MIDC water to maintain required process water quality checking of the water quality after addition of generated water. This blended water is supplied through distribution network on continuous basis.

Rain Water Use in Industrial Process

Year	Rain water use in Industrial process (in m^3)
2012-13	21900
2013-14	38950
2014-15	20300
2015-16	34850
Total	**116000**

The use of rain water in industrial process had significantly increased from 2012-2013 and 2015-2016, respectively.

3. ITC Limited, Jalahobli

Project programme: Wastewater Treatment

The company is a global exemplar in 'Triple Bottom Line' performance and is the only enterprise in the world of comparable dimensions to have achieved and sustained the three key global indices of environmental sustainability of being 'water positive' (for 12 years). The company is also making investments to reduce specific energy and water consumption to further enhance the green footprint of its operations while generating substantial cost savings.

The factory is having 20,000 trees and shrubs in the campus. All the effluents are treated in-house. Rainwater is harvested and stored in a pond within the premises with a capacity of 11700KL, through which 40% of our water requirement is met in 2015-16. Water used by the factory has been reduced from 340 KLD to 268 KLD. Municipal waste water is being reused for non-portable process application, through which 11% of our requirement is met in 2015-16.

Water Use Pattern

Table 5: Water use pattern at ITC Ltd. Jalahobli

Year	Water use in Industrial process only (in m^3)	Water use in Utilities and other services# (in m^3)	Water use for Drinking purposes (in m^3)	Actual production of the plant (mention unit of production in MNC)	Specific water consumption (m^3 per unit of production) Year	
					For fresh water only (excluding rainwater)	For total water
2012-13	39715	33942	27104	22255	2.4	4.5
2013-14	33323	23864	39163	22039	2.5	4.4
2014-15	42480	33603	24274	20644	2.9	4.9
2015-16	31867	32400	33648	20210	2.4	4.8

Figure 3: Total Water Consumption 2008-2016

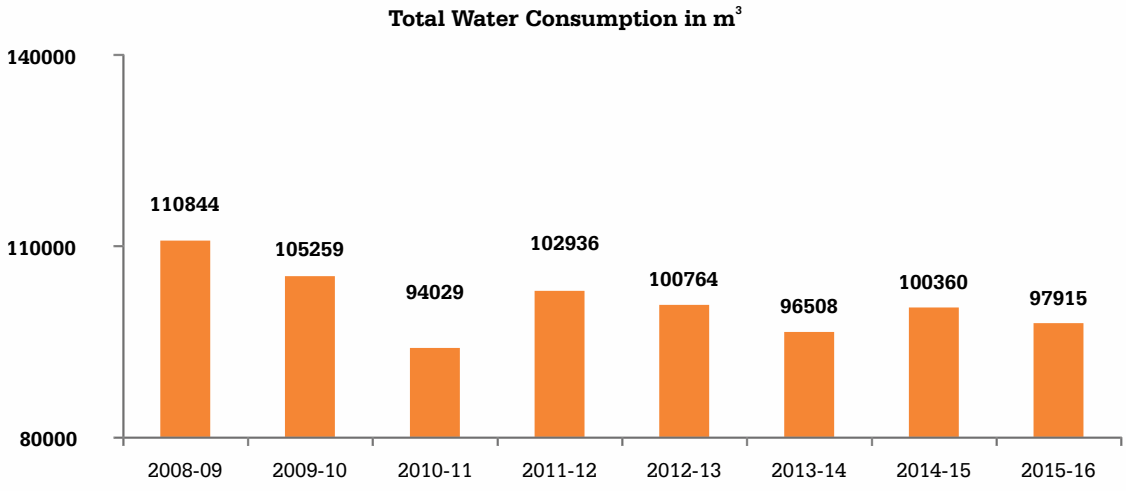
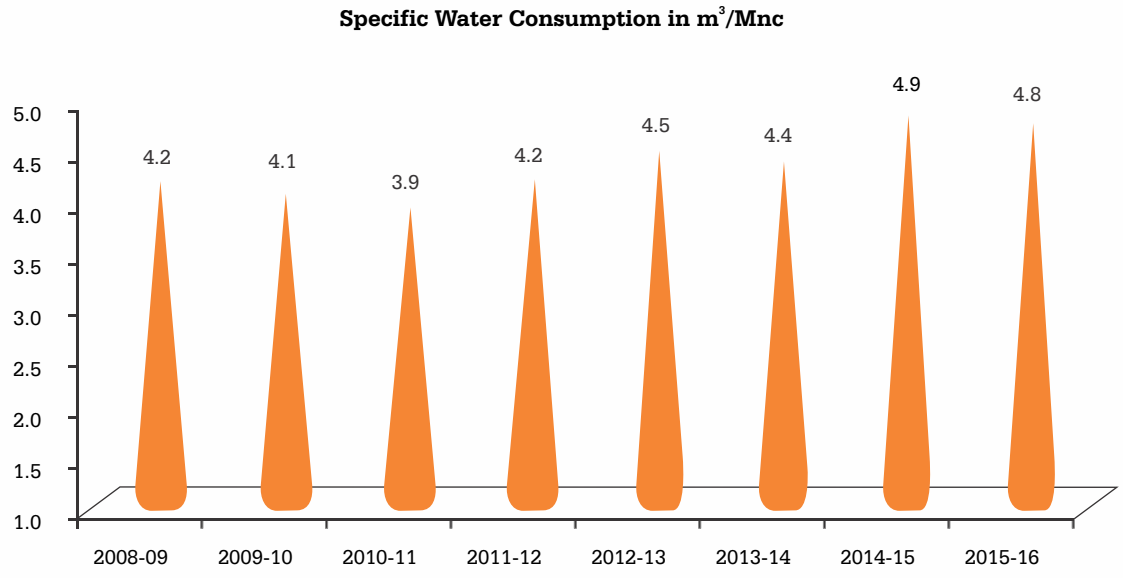


Figure 4: Specific Water Consumption form 2008-2016



Water Intake Source Wise

Table 6: Water used from various sources at Jalahobli unit.

Source of Water	Annual (2015-16) Water Intake in m^3	Cost of Water (₹/m^3)
Municipal Fresh Water Supply	-	-
Municipal Sewage/ Treated Sewage Supply	10954	26
groundwater Withdrawal	47726	-
Private Water Tankers	-	-
Rainwater Harvesting	39235	-
Other sources (Mention source)	-	-

Water Conservation Measures

Table 7: List of Water Conservation Projects implemented from 2015-2016

Sl No	Title of Water Saving project implemented	Year of Implementation	Planned date of completion	Actual date of completion	Annual Water Savings	Rs. L	Invest Made	Payback Period (Months)
			m3	Rs L	M3		Rs Lakhs	
1	Auto tap system for Labour Canteen	2015	Apr-15	Apr-15	300	0.04	0.18	54
2	Survey of water consumption points in toilets/ Other places	2015	Oct-15	Oct-15	500	0.06	0	0
3	AHU condensate recycling	2015	Mar-15	Mar-15	3000	0.38	1.5	47
4	Leakage audit of entire plant	2015	Jul-15	Sep-15	100	0.01	1.5	1800
5	Optimizing Blowdown TDS set point of Boiler	2016	Dec-16	Dec-16	120	0.00	0	0
6	Audit by Nalco	2016	Nov-16	Dec-16	500	0.06	1.8	360
7	RO Reject connected to all toilet for flushing	2016	Jan-16	Mar-16	9750	1.23	1	10

Wastewater Generation and Treatment

Table 8: Wastewater generation and treatment form 2012-2016

Year (April-March)	Quantity generated (m^3)	Quantity recycled (m^3)		Quantity discharged (m^3)		Waste Water Discharge/Ton of Product
	(m^3)	%	(m^3)	%		
2012-13	49756	49756	100	0	0	0
2013-14	42103	42103	100	0	0	0
2014-15	48203	48203	100	0	0	0
2015-16	36120	36120	100	0	0	0

The Bangalore factory is sustaining the Zero Discharge Status and the Treated waste water is being used for irrigation purpose inside the factory.

The unit has installed an Effluent treatment plant of capacity 300 m^3/day. The type of process followed is Extended Aeration activated Sludge process.

Waste water is first collected in an equalization tank after filtering solids through the Bar screen. The equalization tank is used for pH correction of the wastewater.

The water is then pumped into the Aeration tank where the treatment of the wastewater happens. The MLSS of the water is maintained between 350-400 in this tank. The MLSS is maintained by re-circulating the sludge from the Recirculation tank.

The water overflows through gravity into the clarifier where clear water overflows from the top into the Treated water tank and the sludge from the bottom is removed into the Recirculating tank.

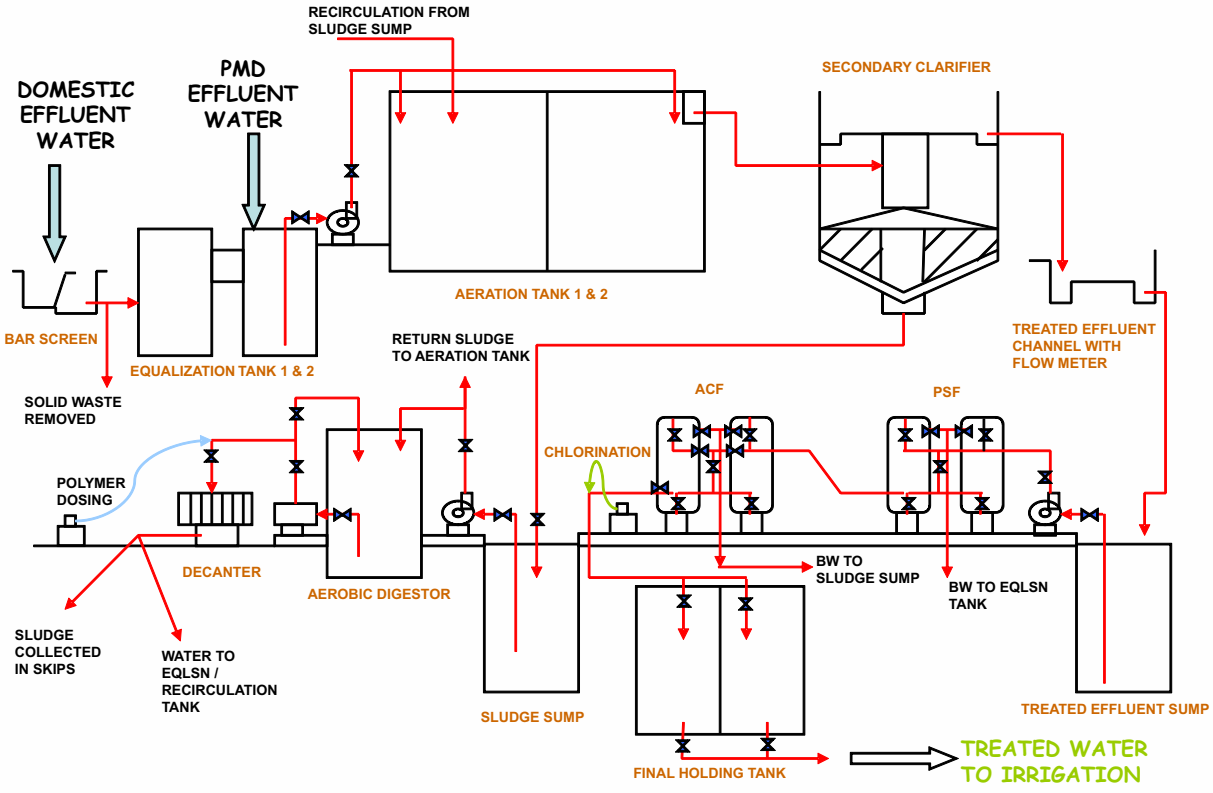
The water from the Treated water tank is then pumped into the Pressurized Sand filter and then Activated carbon filter to remove the suspended solids

"Post this, the water is dosed online with chlorine to maintain the Free residual chlorine in the water.

An Effluent water treatment plant having a capacity to hold 300 m^3/day has been installed and is monitored 24 hours through out the clock. 100% of water is recycled and issued for gardening. It is a zero discharge unit. Provision is made for the usage of tertiary treated water for non-potable applications in the flushing of toilets and usage in the air washers.

The unit is procuring sewage treated water from BWSSB. This water is further treated in an Ultra filtration system followed by a RO system. The treated water is being used for non-potable applications such as Cooling towers scrubbers etc. This has reduced dependency on borewells by 6 % of the total demand annually.

Figure 5: Process Flow Diagram



Rainwater Harvesting and Use

Two Rainwater harvesting ponds of 11700 kL combined capacity and ten recharge wells have been created at the Unit site.

1. South Western Pond 1 – 5000 kL capacity
2. North Eastern Pond 2– 3700 kL capacity
3. South Pond 3- 3000 kl capacity



Ten Recharge Wells Created

Recharge well	Description of building
RCW 1	Inactive godown
RCW 2	Inactive godown
RCW 3	Vehicle section
RCW 4	Contractor's Shed
RCW 5	PMD Garage
RCW 7	Security Qtrs & Record room
RCW 8	Behind Admin Block
RCW 9	Behind UGR
BW B	Waste material store

Awareness Generation and Capacity Building: Employees

ITC Bangalore's top management has defined its policy with ITC Limited Triple Bottom Line and Corporate policy on environmental, health and safety (EHS). The responsibility for review and updation of water conservation has been vested primarily with the Engineering Department. The unit has a detailed organization structure for Water management headed by the Branch Engineer and an Identified Water manager for the unit.

Water conservation projects and targets are part of yearly objectives for performance assessment of the engineers in the plant. Half yearly review is done with senior people from the head office to ensure progress and correction.

An i3i (innovation to implementation to imitation) competition is arranged annually at divisional level. Teams selected at the unit level qualify for all India final. The possible ideas are imitated across the divisions. Moreover water consumption details, ideas and status of proposals are discussed in EHS meeting held in various departments involving mangers, supervisors and workmen, once in a month.

Water management is taken up in a structured manner for continual and sustained improvements. A variety of internal and external techniques are adopted

- Internal Audit - Once in a Year.
- External water audits - Once in 5 years.
- Adopting techniques such as Six Sigma and brainstorming specifically on water conservation

The Bangalore Water Supply and Sewerage Board has made rainwater harvesting compulsory for all residential buildings which have an area of 1600 ft^2 and above. The unit had made an awareness campaign for the same and also handouts were provided regarding the design and specific guidelines for implementing the same.

Capability Building: Employees

ITC has partnered the Indian farmer for close to a century. ITC is significantly widening its value-adding activities; creating livelihoods by helping poor people, investing in rainwater harvesting, empowering rural women by helping them evolve into entrepreneurs, providing infrastructural support to make schools exciting for village children.

ITC as a responsible corporate citizen has taken up the following social work in the neighboring villages.

1. **Water management programs** launched in these villages to improve quality and Farm Ponds:
    - These are small water harvesting structures dug out in the agricultural lands to harvest surface run off
    - The primary objectives of the initiative is to provide critical irrigation to crops apart from providing for recharge of Bore wells

2. **Bore Well/Open Well Recharge:**
    - Based on the model of indirect injection, surface run off is channelized from nearby drainage points into the shaft of the bore well.
    - This would assist the recharging of the groundwater and raising water level in aquifers

3. **Community Ponds:**
    - These are common water harvesting structures which aim at collective management of water by the communities
    - A village resource, it aims at providing support to household as well as livestock requirements, besides also providing a sound base for sub surface recharge.
    - Quantity of surface water (to reduce dependency on under groundwater sources).





Category: Community Initiatives by Industries

4th Edition of FICCI WATER AWARDS

ITC Ltd.

Project programme: Watershed management and Water harvesting

ITC's Environmental Policy

ITC's Board approved Policies such as those on Environment, Health and Safety, Life-Cycle Sustainability of Products and Services and Responsible Sourcing, provide the necessary framework to address the direct impacts of the Company's own Environmental Performance operations as well as progressively extend the efforts along the supply chain. In all its business operations, ITC proactively pursues a low carbon growth path and strives toward beyond compliance environmental performance across all its units. Each unit is mandated to implement measures to continuously improve energy and water efficiency as well as solid waste recycling.

Project Description

ITC has adopted the integrated watershed development approach since participatory and well managed watershed development at the grassroots level is the most successful strategy for addressing the complex inter-relationships between natural resources and their impact on agricultural productivity, and therefore on livelihood security. While physical implementation of soil and moisture conservation measures and building rainwater harvesting structures along with biodiversity conservation are key activities, the definitive objective of ITC's Integrated Watershed Development Programme is to enhance the ecological resource base of rural economies to secure eco-systems services and create sustainable livelihood opportunities for rural communities.

Objectives

The three critical objectives that the Programme seeks to achieve are:

(i) water conservation and soil enrichment, (ii) village-based management of water and other natural resources, and (iii) optimising the usage of water resources created by the watershed development projects to build a more vibrant farm portfolio.

Programme Cost

ITC's Integrated Watershed Development Programme (Rs. In lakhs)			
Particulars	**2013-14**	**2014-15**	**2015-16**
ITC Expenditure	2,660	4,012	5,673
Local/Community Contribution	664	924	882
Other Agencies (State Governments/ NABARD/ Banks)	998	938	1188
Total	**4,322**	**5,874**	**7,743**

Long-term secular decline in productivity per hectare were due to a variety of factors:

- Fragmentation of landholdings and depleted soils which are pushing up cultivation costs, thereby jeopardising the future of these holdings as viable farming units.
- Year-on-year lowering of the water column indicating poor groundwater recharge. Dwindling bio-mass, creating pressure on fodder and energy needs of rural households.
- Lack of access to modern scientific agricultural practices to improve productivity.
- Lack of timely availability of quality agri-inputs and institutional credit.
- Inadequate public investment, lack of infrastructure and inefficient marketing channels.
- High incidence of poverty due to falling incomes and indebtedness.

Intervention and the Planned Outputs

- Carrying out field bunding along with building gully plugs, boulder checks, loose stone check dams, contour bunds and trenches to regulate water run-off and minimise erosion of drains.
- Constructing, reviving and maintaining water-harvesting/water re-charging structures like percolation/irrigation/village tanks, nalla bunds, farm ponds, stop/check dams, etc. to build water storage capacities.
- Re-vegetation of commons/wastelands/ pasture lands to increase biomass cover and revive and enhance native floral and faunal

species to maintain bio-diversity.

- Integrating interventions under ITC's Sustainable Agriculture Practices Programme to optimise the use of available water and improve soil health through the promotion of water-saving technologies e.g. sprinkler/drip irrigation and group irrigation wells.

Target Group

The primary target population consists of resource-poor small and marginal farmers with low adaptive capacities as a result of their direct and symbiotic dependence on climate sensitive sectors, by taking a collective participatory approach and making the creation of sustainable. It is observed that a large number of women have taken up vermi-composting and utilised ITC's Livestock Development programme to upgrade their cattle for supplementary income avenues.

Community Involvement

In ITC's Integrated Watershed Development Programme, the project delivery model essentially mobilises a three-way collaborative partnership between the target community, the Company and NGOs who function as Project Implementation Agencies.

- Local Community: participation is the cornerstone of ITC's watershed development model. Anchored in community-based self-help initiatives, it employs a bottom-up participatory approach which ensures that target communities are active participants and key decision-makers at every stage of the project.
- NGOs: NGOs are selected on the basis of their in-depth knowledge of the project area and appropriate technical expertise. Prior to the initiation of any project, they have the primary responsibility of conducting village meetings and intensive PRA exercises to select target beneficiaries, create awareness and assess their willingness to participate in the project.
- ITC & ITC's Social Investments Team: While strategic direction for all ITC's Social Investments Programmes is provided at the Board level (primarily through the Company's Sustainability & CSR Committee headed by the Company Chairman), responsibility for progress extends right down to the unit level. The Company is the major funding agency for all initiatives under its Programmes.
- Governments: ITC is working with state government in the area of Watershed through PPP projects. It signed its first agreement in 2007 and since then it has signed 25 PPPs similar agreements with 5 State Governments and NABARD mostly for 5-year projects

Environmental Benefits

Targeted outcomes in terms of environmental benefits created by ITC's Watershed Development projects include increasing groundwater recharge and raising the water table, creating water storage capacities, reducing erosion through water run-off and conserving in situ moisture and soil nutrients as well as in-situ biodiversity conservation. These positive impacts work together to improve the availability of water (primarily for irrigation, but also for household consumption and livestock as discussed above) and enhance the local natural resource base - supporting a more stable agricultural regime.

By 2015-16, the Programme is operational in across 46 districts in 12 States, covering over 2,59,000 hectares. Over 10.8 million CMT of soil & moisture conservation measures are undertaken and over 3.17 million saplings had been planted as an effort towards pastureland development activity.

These benefits have been amplified by the promotion of best practices and modern agronomic techniques through ITC's Improved Agriculture Practices Programme and Choupal Pradarshan Khets. It is done through initiatives such as (i) the production and use of organic compost - leading to improved soil health and cleaner crops as well as IPNM (Integrated Pest & Nutrient Management) with an emphasis on organic pesticides, and (ii) promotion of water-saving technologies to optimise usage of water.

Socio-economic Benefits

- Economically, raising productivity and upgrading/diversifying farm portfolios to boost incomes,
- Environmentally, by improving the local natural resource base, especially water availability, and
- Socially, by promoting a culture of responsibility and enterprise through the experience of joining together to form a WUG and acting collectively.
- Increased availability of water for a longer period has enabled crop diversification towards commercial varieties, has led to a multiple-cropping regime with the introduction of Rabi crops.
- Notable impact was observed among the landless, small and marginal households. Prior to the projects, members of this group had little choice but to migrate post the Kharif harvest due to lack of work opportunities in the village.

Financial Sustainability

- Watershed development projects are implemented by participation of the community, wherein the community contributes both in physical and financial forms. WUGs are required to contribute towards the cost of the interventions – this ranges between 20 to 40% of total cost, depending on their socio-economic conditions.
- The sustainability of the Programme is to a great extent dependent on the operation and maintenance work on the structures, so that the benefits continue over the long-term.
- A key community resource in expanding choice and decision-making abilities, the Fund enables collective long-term planning. Ensuring that communities have a financial stake in the projects goes a long way in building high ownership levels ensuring long-term sustainability of projects.

Institutional Sustainability

- ITC's model has in-built potential for sustainability, scalability and replicability as it converges social, business and environmental goa. ITC is positioned to promote this end-to-end solution approach.
- Its large agri-businesses offer target beneficiaries better market channels/ linkages, the benefit of its long experience and superior R&D capabilities as well as integration with its other mutually reinforcing programmes
- Mandatory community contribution – in terms of time, labour, skills and, perhaps most crucially, cash – also drives high ownership levels.
- Farmers and Panchayat representatives are trained to develop plans for convergence of various government schemes within the existing watershed projects.

Challenges Faced

Changing community perceptions in PPP projects: In ITC's PPP partnerships linked to MGNREGA and IWMP, a key challenge is to change the common community perception that these are not only off-season wage-earning schemes but are major opportunities to create durable community assets

Promoting supply/demand balance: The overall objective is to build awareness of the importance of supply and demand balance among target communities and build their capacity to optimise resource use. The Programme has promoted mass scale interventions in water saving cum productive

practices such as: Intensification and Direct Seeding of Rice in paddy crops; the Zero Tillage cultivation method in paddy and wheat and; Drip and Sprinkler irrigation in various crops.

Effective monitoring systems: is critical to successful project implementation, primarily through regular scheduled and informal meetings with field officers of ITC's Social Investments Team, personnel in local Company units and partner NGOs.












Category: Initiatives by NGOs

4th Edition of FICCI WATER AWARDS

Self Employed Women's Association (SEWA)

Project Programme: Safe Drinking Water

SEWA is a member-based organization of poor women workers from the informal sector. SEWA is working on organizing and empowering women to progress with raised self-esteem, dignity and improved access to economic resources. SEWA's strategy involves working around the achievement of twin goals, with women at the centrality of (a) full employment - employment that provides work, income and food security and (b) self-reliance – economically & decision-making.

Project Description

SEWA's millennium women, water and work campaign is one among the above which has led to decentralized local water management in the dry and drought prone areas that has resulted into (a) employment and income opportunities to rural communities, (b) construction of 4023 roof rainwater harvesting structures facilitating water conservation of 84,744,000 liters of water, (c) building a cadre of grass root technicians receiving regular contracts for the repairs and maintenance of water structures, (d) revival of traditional source and avail the water at the door step of the members living in the remote areas

Intervention and Planned Outputs

Equitable access to safe drinking / household / livelihood water;

Ensure adequate quantity of good quality of water;

Identify appropriate/innovative technologies for treatment, restoration and development of sustainable water resource mechanisms (including financial and social models);

Promote hygiene and sanitation practices in schools and targeted communities;

Capacitate Community Based Organizations (CBOs) in management of water and sanitation facilities and promotion of hygiene;

Promote water based livelihoods and build a cadre/ cohort of women led service providers and Experience and knowledge sharing on good practices in SAARC countries.

Target group: Few of the major partners / stakeholders in the Project along with their roles are as mentioned below:

SAARC Development Fund

In India, given the experience of SEWA in working with community members and its approaches with focus on community participation and ownership the implementation of the Project is given to SEWA in Rajasthan, Dungarpur District.

WASH Committees

WASH Committees were formed in each of the villages. The process was participatory wherein all members of the village were assembled in a village council meeting and SEWA introduced WASH project in connection to and as a solution to the existing problems faced by the villagers in the area- water, sanitation and hygiene. In each village, committees were formed between the sizes of 11-15 members with 75 % representation of women.

Community Involvement

SEWA has its presence in Dungarpur, Rajasthan since 2006 and has a membership of 13000. Each and every activity at SEWA are based on the needs and demands of the members; thus formulation of the current Project was also based on the needs / demand of the local community followed by gramsabhas and Participatory Rural Approach (PRA).

Apart from capacity building initiatives, various other trainings were given to the community regarding hygiene, hand pump repairing, preconstruction, WASH in schools, menstrual and personal hygiene, water security, water testing, chlorination of wells, etc., the WASH committee and community themselves did the survey along with the project engineer to map the existing water resources, human resources in the village.

Environmental Benefits

Few of such quantifiable benefits are as mentioned below.

- 1077 number of individual toilets constructed in co-ordination with Swachh Bharat Abhiyan in the 11 project villages and 3 community level toilets construction in process;
- Renovation of traditional sources (ponds, wells and others)6 under construction village ponds renovation, 9 wells cleaned and recharged / re-developed, 23 Hand pump platform repairing, Well chlorination, 1 public drinking water point constructed etc. resulting in to safe water, water conservation;
- 3 community Roof Rain Water Harvesting Tank (RRWHT) each of 25000 litres of water constructed would conserve rain water;
- 39 Hand pump repairing done by the bare foot technicians trained under the current Programme.

Socio-economic Benefits

The Project has followed community participation and managed approaches and worked towards building the local capacities; it has worked towards increasing the ownership and belongingness of the Project activities among the WASH Committees and community members. Also the timely and regular co-ordination with the local / state / central government has also brought in the visibility of the Project, especially the approach which has brought in multiplier effects of convergence and scaling up opportunities within the Project as well as outside the Project.

Financial Sustainability

The WASH Committee of all the 11 villages has opened the village WASH/ O&M bank accounts, to which the village households contribute a pre-agreed contribution on regular monthly basis. Further to it the WASH Committees are also provided record keeping and accounting trainings which would further facilitate the operation of accounts. Till date INR. 407400 have been collected and deposited in the Wash village Bank Accounts opened in each of the villages keeping in mind the sustainability of the Programme.

Institutional Sustainability

The community driven approach SEWA is facilitating through WASH Committees and at the same time also proving on the job trainings to come with solutions for the same is a constructive challenge resulting into building the cadre of grass root WASH Managers.

The process is slow given the community engagement process and approach adopted under the Project, but at the same time this would bring in the best community ownership and sustainability.

Coordination and communication with Gram Panchayat at times is also contributing to slowing down the start of activities at certain point of time but at the same time this also brings in the ownership of the Programme and activities among the local communities and government bodies including Gram Panchayat, PHED etc.

Community Initiatives



Participatory Rural Approach in the village



Water testing of the village water



Measurement of the excavation work done in pond



Construction of Roof Rain Water Harvesting Structure

About FICCI

FICCI, the apex industry organization in India, is the leader in policy thinking and change and is in the vanguard of nation building. Established in 1927 and with a nationwide membership of over 1800 corporates and over 300 chambers of commerce and sectoral industry associations, FICCI espouses the shared vision of Indian businesses and speaks directly and indirectly for over 2,50,000 business units. FICCI facilitates business-to-business linkages, promotes trade and investment linkages, creates awareness on key issues for the economy, provides inputs for policymaking, facilitates government-industry exchange and promotes bilateral ties.

FICCI has a three tier membership including companies as direct members, sectoral industry associations, and chambers of commerce from all State of India. It has 14 States offices and 14 global offices with around 600 employees. FICCI has expert committees and task forces for about 70 economic sectors. The list of task forces and committees under these sectors are listed in Annexure 3. FICCI also has MoUs with around 250 international partners across 120 countries. FICCI provides insights into all sectors of the economy through reports, surveys and knowledge papers which gets disseminated through 300 conferences/summits each year.

FICCI hosts Invest India which is a not-for-profit joint venture between FICCI; the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce & Industry; and state governments. Invest India is the official Investment Promotion and Facilitation Agency of the Government of India, mandated to facilitate investments into India to help realize the government's 'Make in India' campaign. 'Invest India' has set up a dedicated 'Investor Facilitation Cell' at FICCI to act as primary support for all investment queries and for providing handholding and liaisoning services to investors.

FICCI Water Mission

Access to safe water is one of the essential elements for sustainable development and poverty reduction. However, the past few decades has seen an increase in demand amongst various water using sectors putting enormous stress on the natural resource.

FICCI constituted a 'Water Mission' to promote and provide thought leadership in the area of water efficiency. It aims to facilitate the sharing and dissemination of best practices across industry sectors in order to encourage corporate and industry players to imbibe a culture of water conservation within their organizations.

The Mission is working to create awareness on the existing situation pertaining to water scarcity, quality and generate a discourse on sustainable use of water amongst various users. With growing and extensive depletion and pollution of our water resources, our current work is being restructured to bring this issue back in focus to provide a sense of urgency to the debate of water management.

The objectives of the Mission's work are:

- To formulate suggestions for changes in policy framework in India for better water resource allocation, conservation and management;
- To promote fresh water conservation strategies across the irrigation, industry and domestic sectors;
- To document and disseminate best practices across various sectors and create a forum to facilitate exchange of information and experiences in the country;
- To promote new innovative technologies of water saving and management like rainwater harvesting, watershed management, desalination, water auditing and accounting across water intensive sectors through projects, workshops, conferences and training programmes.

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